Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
		- Leaving from / going to cities - Departure date/ departure time - Return date / return time The Yahoo! travel page will include a cars express path. Modify the Travelocity entry point to accept the following parameters: - Pick-up city - Pick-up date / pick-up time - Return date / return time - Number of travelers - Type of car The Yahoo! travel page will include a cars express path. Modify the Travelocity entry point to accept the following parameters: - Check-in city - Check-in / check-out dates - Number of travelers - Number of rooms" *Yahoo! Travel Booking Engine - Scope Definition,* last modified on 8/1/1997. *See* DFNDT000413-422. "2 User Interface and Site Functionality The following functionality will remain available to the Yahoo! booking engine. - 3 Best Itineraries - Flights & Prices - Cars - Hotels - Existing Reservations - Make Changes including Buy Now - Profile - Login *** The Yahoo! Travel main travel page will consist of an air, car, and hotel express user interface. In addition, the interface will have links to more comprehensive request

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
		pages (ffrqst.pgd, fprqst.pgd, htrqst.pgd, and crrqst.pgd)." *Yahoo! Travel Booking Engine - Scope Definition,* last modified on 8/1/1997. *See* DFNDT000413-422.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages;	*See* 1(a)-1(b), *supra.*
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	*See* 1(a)-1(b), *supra.*
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	*See* 1(a)-1(b), *supra.*
	(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* 1(a)-1(b), *supra.*
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to:	*See* 1(a)-1(c), *supra.*
	(i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages;	*See* 1(a)-1(c), *supra.*
	(ii) automatically identify as the source page the one of the first web pages on which the link has been activated;	*See* 1(a)-1(c), *supra.*
	(iii) in response to identification of the source	*See* 1(a)-1(c), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
	page, automatically retrieve the stored data corresponding to the source page; and	
	(iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays:	*See* 1(a)-1(c), *supra.*
	(A) information associated with the commerce object associated with the link that has been activated, and	*See* 1(a)-1(c), *supra.*
	(B) the plurality of visually perceptible elements visually corresponding to the source page.	*See* 1(a)-1(c), *supra.*
20.	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of:	*See* 1, *supra.*
	(a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated;	*See* 1(a)(i), *supra.*
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	*See* 1(a)(ii), *supra.*
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	The Travelocity/Yahoo! Prior Art discloses that each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants. "1.1 'Booking Engine' means a database containing availability, schedule, and price information connected to a graphical user interface that allows users of the World Wide Web to make reservations for Travel Services, as a minimum, and complete payment for such Travel Services online." *Travel Services Advertising and Promotion*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
		Agreement, June 30, 1997. *See* DFNDT000388-412. "2 User Interface and Site Functionality The following functionality will remain available to the Yahoo! booking engine. - 3 Best Itineraries - Flights & Prices -Cars - Hotels - Existing Reservations - Make Changes including Buy Now - Profile - Login * * * The Yahoo! Travel main travel page will consist of an air, car, and hotel express user interface. In addition, the interface will have links to more comprehensive request pages (ffrqst.pgd, fprqst.pgd, htrqst.pgd, and crrqst.pgd)." *Yahoo! Travel Booking Engine - Scope Definition*, last modified on 8/1/1997. *See* DFNDT000423-428. "2.1 Yahoo! Travel Page. Yahoo! shall provide a prominent hyperlink on the Yahoo! Travel Page to the Co-Branded Pages described in Section 2.2. Such hyperlink shall be placed above the fold on the Yahoo! Travel Page." *Travel Services Advertising and Promotion Agreement*, June 30, 1997. *See* DFNDT000388-412. "Purpose: To provide the ability to make flight, car and hotel reservations via Travelocity starting from a prominent hyperlink on the Yahoo! Travel Page." *Yahoo! Travel Booking Engine - High Level Requirements*, July 14, 1997, last modified on February 18, 1998. *See* DFNDT000413-422. "Travelocity URL's and URL parameter names will be provided to Yahoo! three weeks after start of development. * * *

<table>
<tr><th>Claim No.</th><th>Claim Language of U.S. Patent No. 7,818,399</th><th>Relevant Disclosure in the Travelocity/Yahoo! Prior Art</th></tr>
<tr><td></td><td></td><td>The Yahoo! travel page will include a flight express path. Modify the Travelocity entry point to accept the following parameters:
- Number of passengers
- Leaving from / going to cities
- Departure date/ departure time
- Return date / return time
The Yahoo! travel page will include a cars express path. Modify the Travelocity entry point to accept the following parameters:
- Pick-up city
- Pick-up date / pick-up time
- Return date / return time
- Number of travelers -Type of car
The Yahoo! travel page will include a cars express path. Modify the Travelocity entry point to accept the following parameters:
- Check-in city
- Check-in / check-out dates
- Number of travelers
- Number of rooms”
Yahoo! Travel Booking Engine - Scope Definition, last modified on 8/1/1997 (emphasis added). *See* DFNDT000423-428.</td></tr>
<tr><td></td><td>(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another;</td><td>*See* 1(a)(iii), *supra.*</td></tr>
<tr><td></td><td>(b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then</td><td>The Travelocity/Yahoo! Prior Art discloses automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page.

“The following pages within Travelocity will be co-branded for Yahoo!:<table><tr><th>Path</th><th>Page Name</th></tr></table></td></tr>
</table>

<table>
<tr><th>Claim No.</th><th>Claim Language of U.S. Patent No. 7,818,399</th><th>Relevant Disclosure in the Travelocity/Yahoo! Prior Art</th></tr>
<tr><td></td><td></td><td><table><tr><td>3 Best</td><td>ffrqst
ffdisp
ffprice</td></tr><tr><td>Flights & Prices</td><td>fprqst
fpdispl
fpdisp2
fppricl</td></tr><tr><td>Hotels</td><td>htrqst
htavail
htdisp
htcdnbrl
htcdnbr2</td></tr><tr><td>Cars</td><td>crrqst
crcdnbr1
crcdnbr2
crdisp
crdetail</td></tr><tr><td>Existing Reservations</td><td>Exrqst</td></tr></table>*Yahoo! Travel Booking Engine - High Level Requirements,* July 14, 1997, last modified on February 18, 1998. *See* DFNDT000423-428.

“2.1 Yahoo! Travel Page. Yahoo! shall provide a prominent hyperlink on the Yahoo! Travel Page to the Co-Branded Pages described in Section 2.2. Such hyperlink shall be placed above the fold on the Yahoo! Travel Page.”
Travel Services Advertising and Promotion Agreement, June 30, 1997. *See* DFNDT000388-412.

“Purpose:
To provide the ability to make flight, car and hotel reservations via Travelocity starting from a prominent hyperlink on the Yahoo! Travel Page.”
Yahoo! Travel Booking Engine - High Level Requirements, July 14, 1997, last modified on February 18, 1998. *See* DFNDT000423-428.</td></tr>
</table>

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
		“Travelocity URL’s and URL parameter names will be provided to Yahoo! three weeks after start of development. *** The Yahoo! travel page will include a flight express path. Modify the Travelocity entry point to accept the following parameters: - Number of passengers - Leaving from / going to cities - Departure date/ departure time - Return date / return time The Yahoo! travel page will include a cars express path. Modify the Travelocity entry point to accept the following parameters: - Pick-up city - Pick-up date / pick-up time - Return date / return time - Number of travelers - Type of car The Yahoo! travel page will include a cars express path. Modify the Travelocity entry point to accept the following parameters: - Check-in city - Check-in / check-out dates - Number of travelers - Number of rooms” *Yahoo! Travel Booking Engine - Scope Definition,* last modified on 8/1/1997. *See* DFNDT000413-422. “2 User Interface and Site Functionality The following functionality will remain available to the Yahoo! booking engine. - 3 Best Itineraries - Flights & Prices - Cars - Hotels

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
		- Existing Reservations - Make Changes including Buy Now - Profile - Login *** The Yahoo! Travel main travel page will consist of an air, car, and hotel express user interface. In addition, the interface will have links to more comprehensive request pages (ffrqst.pgd, fprqst.pgd, htrqst.pgd, and crrqst.pgd).” *Yahoo! Travel Booking Engine - Scope Definition,* last modified on 8/1/1997. *See* DFNDT000413-422.
	(c) automatically computer-generating and transmitting to the web browser a second web page that includes:	The Travelocity/Yahoo! Prior Art discloses automatically computer-generating and transmitting to the web browser a second web page. “2.2 Co-Branded Pages. SI shall create and serve a series of co-branded pages that guide Yahoo! Site users through the booking process for the Travel Services, at a minimum (the ‘Co-Branded Pages’). The Co-Branded Pages shall include all pages through the first page containing a price quotation for travel-related services, but shall not include any pages in payment process.” *Travel Services Advertising and Promotion Agreement*, June 30, 1997. *See* DFNDT000388-412. “1.1 ‘Booking Engine’ means a database containing availability, schedule, and price information connected to a graphical user interface that allows users of the World Wide Web to make reservations for Travel Services, as a minimum, and complete payment for such Travel Services online.” *Travel Services Advertising and Promotion Agreement*, June 30, 1997. *See* DFNDT000388-412. “(b) User Interface. The Co-Branded Pages shall conform to the graphical user interface utilized by Yahoo! across Yahoo!’s network of branded Internet properties as of the first date of the Exclusivity Period, and Yahoo! shall have the right reasonably to approve the final design of all Co-Branded Pages. Any material changes to the Co-

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
		Branded Pages thereafter shall be made upon the mutual agreement of the parties. Yahoo! shall assign one individual to work with SI to ensure that the Co-Branded Pages satisfy Yahoo!'s requirements. Yahoo! will use reasonable best efforts to ensure continuity of Yahoo! personnel involved in the design process. All pages displayed to Yahoo! Site users, other than the Co-Branded Pages, shall conform to the graphical interface utilized by SI, provided however Yahoo! shall have a reasonable right of approval with respect to such interface." *Travel Services Advertising and Promotion Agreement*, June 30, 1997. *See* DFNDT000388-412. "Because the Yahoo! Travel express page will be hosted on Yahoo!'s site, Yahoo! must have the ability to receive and pass the Session Identification (SID) between Travelocity in order to keep the user's Travelocity session established. This does not apply for users that have cookie browsers because the SID is stored and retrieved from the cookie. * * * Modify lgbecome.pgd, vars.sub, lgmemnew.pgd, lgmemcon.pgd, lglogin.pgd, lgnewinf.pgd, and lgspflog.ctl to pass the session parameters to ensure the reservation process can continue without interruption. Place the session parameters into the Parameter's Database (PDB) and remove them from the PDB once the user has completed the login process." *Yahoo! Travel Booking Engine - Scope Definition*, last modified on 8/1/1997. *See* DFNDT000423-428. "Certain pages within Travelocity will be designated as co-brand. Co-brand means that the pages will look and feel like Yahoo! pages, but will function the same as they do today in terms of required data elements, navigation and flow; except where otherwise indicated in this document." *Yahoo! Travel Booking Engine - High Level Requirements*, July 14, 1997, last modified on February 18, 1998. *See* DFNDT000413-422. "Several Travelocity pages (fprqst, fpdisp1, fpdisp2, fpprice and bargain) will be

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
		designed with the Yahoo! masthead, footer and toolbar. 1. All references to Travelocity within the above pages will be modified to reflect Yahoo! Travel." *Yahoo! Travel Build your own itinerary*, last modified on March 24, 1998. *See* DFNDT000429-432.
	(i) information associated with the commerce object associated with the link that has been activated, and	The Travelocity/Yahoo! Prior Art discloses that the second web page includes information associated with the commerce object associated with the link that has been activated. "2.2 Co-Branded Pages. SI shall create and serve a series of co-branded pages that guide Yahoo! Site users through the booking process for the Travel Services, at a minimum (the 'Co-Branded Pages'). The Co-Branded Pages shall include all pages through the first page containing a price quotation for travel-related services, but shall not include any pages in payment process." *Travel Services Advertising and Promotion Agreement*, June 30, 1997. *See* DFNDT000388-412. "1.1 'Booking Engine' means a database containing availability, schedule, and price information connected to a graphical user interface that allows users of the World Wide Web to make reservations for Travel Services, as a minimum, and complete payment for such Travel Services online." *Travel Services Advertising and Promotion Agreement*, June 30, 1997. *See* DFNDT000388-412. "(b) User Interface. The Co-Branded Pages shall conform to the graphical user interface utilized by Yahoo! across Yahoo!'s network of branded Internet properties as of the first date of the Exclusivity Period, and Yahoo! shall have the right reasonably to approve the final design of all Co-Branded Pages. Any material changes to the Co-Branded Pages thereafter shall be made upon the mutual agreement of the parties. Yahoo! shall assign one individual to work with SI to ensure that the Co-Branded Pages satisfy Yahoo!'s requirements. Yahoo! will use reasonable best efforts to ensure continuity of Yahoo! personnel involved in the design process. All pages displayed to

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
		Yahoo! Site users, other than the Co-Branded Pages, shall conform to the graphical interface utilized by SI, provided however Yahoo! shall have a reasonable right of approval with respect to such interface." *Travel Services Advertising and Promotion Agreement*, June 30, 1997. *See* DFNDT000388-412. "Because the Yahoo! Travel express page will be hosted on Yahoo!'s site, Yahoo! must have the ability to receive and pass the Session Identification (SID) between Travelocity in order to keep the user's Travelocity session established. This does not apply for users that have cookie browsers because the SID is stored and retrieved from the cookie. * * * Modify lgbecome.pgd, vars.sub, lgmemnew.pgd, lgmemcon.pgd, lglogin.pgd, lgnewinf.pgd, and lgspflog.ctl to pass the session parameters to ensure the reservation process can continue without interruption. Place the session parameters into the Parameter's Database (PDB) and remove them from the PDB once the user has completed the login process." *Yahoo! Travel Booking Engine - Scope Definition*, last modified on 8/1/1997. *See* DFNDT000423-428. "Certain pages within Travelocity will be designated as co-brand. Co-brand means that the pages will look and feel like Yahoo! pages, but will function the same as they do today in terms of required data elements, navigation and flow; except where otherwise indicated in this document." *Yahoo! Travel Booking Engine - High Level Requirements*, July 14, 1997, last modified on February 18, 1998. *See* DFNDT000413-422. "Several Travelocity pages (fprqst, fpdisp1, fpdisp2, fpprice and bargain) will be designed with the Yahoo! masthead, footer and toolbar. 1. All references to Travelocity within the above pages will be modified to reflect Yahoo! Travel." *Yahoo! Travel Build your own itinerary*, last modified on March 24, 1998. *See*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
		DFNDT000429-432.
	(ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	*See* 1(c)(ii), *supra.*
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra.*
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra.*
24	The computer-readable memory of claim 20,	
	(i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and	*See* 13-14, *supra.*
	(ii) wherein the computer-readable memory is	*See* 15-16, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Travelocity/Yahoo! Prior Art
	used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra.*

Comparison of U.S. Patent No. 7,818,399 and Digital River Secure Sales System Prior Art[1]

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, the Digital River Secure Sales System ("SSS") anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	"Digital River's Secure Sales System (SSS) brings together software manufacturers and dealers enabling them to sell and deliver product via the Internet. This service will provide all digital delivery, security, collections and reporting of the sale of software. Throughout this process, it will appear to the consumer as if the transaction is being processed by the manufacturer or dealer while the Digital River SSS is handling the whole transaction 'behind the scenes'." [sic] *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19970412100754/http://www.digitalriver.com/; [DR000001-2]. "**Extend your selling environment** Better yet, the entire transaction takes place in the selling environment you've created, surrounded by the look and feel of your identity, with your products presented the way you want them presented, with no competition. Your customers simply hit the purchase icon at your site and the whole process unfolds smoothly. There's no sensation of being suddenly hustled off to another location. Your customers won't end up at some foreign-looking page where they have to hunt to find your product." *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19971221024519/.digitalriver.com/Page3.html; [DR000003-4] (emphasis original). Maintain your own identity and branding. Digital River facilitates the sale of your products to your customers. To most consumers, our services often appear as nothing more than a web site "buy" button. But behind this simple device is sophisticated electronic commerce technology which gives consumers the ability to immediately and easily purchase and download the digital products of their choice. As

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[1] The Digital River SSS process was offered for sale, sold, and publicly used in connection with more than 500 client websites prior to September 17, 1998. While the referenced steps of the Digital River SSS process were consistently used with respect to these client websites, the specific elements Digital River utilized to create "transparent e-commerce support pages" for its clients varied based upon the specific look and feel of the host (client) website. The documents expressly referenced herein are provided as illustrative examples of the Digital River SSS process as utilized prior to September 17, 1998. Additional documents evidencing the offer for sale, sale and public use of the Digital River SSS process will be produced pursuant to Local Patent Rule 3-4(b).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		consumers become more savvy, this efficiency of purchase and delivery will become one of the primary advantages of selling digital products over the Internet. When customers want to purchase, they push the "buy" button and are transferred immediately and transparently to the Digital River Central Commerce Server. This retains the 'look and feel' of your own site and encourages the customer to buy – easily and quickly. Depending on your preferences and marketing initiatives, buyers can be offered additional cross-sell, up-sell, special offer and bundled products related to their purchases. Credit information is verified, the sale is transacted and the purchases are then downloaded to the buyer. *Digital River Information Kit* at 8 [DR004326]. "Digital River, Inc. proposes to maintain and develop transparent secure Internet marketing and sales services for Adobe's Web site and products. Services will be provided through Digital River's S3 commerce encryption solution which was designed to manage transactions behind the scenes . . . ." *Internet Commerce Services Proposal for Adobe,* July 25, 1996; [DR000005-6]. [DR004245-66].
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated;	"Vendor's Delivery Obligations. a. Initial Deliverables. . . . Vendor will provide Electronic Distributor with . . . (iv) hypertext link to www.digitalrivcr.com in the Vendor's World Wide Web home page . . . ." *Electronic Software Distribution Agreement* between Digital River and Auto F/X Corp. dated July 18, 1996; [DR000013-21]; *see also e.g., Email from Digital River to Auto FX*, dated September 26, 1997; [DR000033] ("The URL for the Auto FX site is at the bottom of this email."); "Bitstream Fonts Online!" hypertext link ("<A HREF=http://www2.digitalriver.com/bit/index.html">Bitstream fonts online!<A>"); *Bitstream.com Home Page*, http://webarchive.org/web/19970117165233/http://www.bitstream.com/; [DR000034-38]; "Shop Online" hypertext link; *Seattle Support Group Home Page*, www.ssgrp.com, [DR000039-50]; "Welcome to 1stSoftware" hypertext link ("<a href="http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=1285&SP=10007&CID=0"

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		GATEOFF>Welcome to 1stSoftware"); [DR000051-54]; and "purchase QFX on the web" hypertext link ("A href=http://www3.digitalriver.com/cgi-bin/tango.cgi/digitalriver/rscott/welcome.qry?"); *QFX Home Page*, http://web.archive.org/web/19970707093153/www.qfx.com/frmain.html; [DR000055-62]; DR026692]; [DR026693]; and [DR026694]. "**Consistent Look and Feel between Store and Home Site** Customers will have the ability to click a 'buy button' from any number of places within www.ea.com and will be linked to a complete store, or a specific product detail page. All of the Commerce pages will carry the branding, look and feel of www.ea.com. This consistent look and feel is essential to a smooth customer experience, and will promote high conversion ratios. For every product page within www.ea.com, Digital River can provide EA with specific URL's for direct product links. This will allow users to shop direction on www.ea.com, and have the ability to purchase product at any time. The page presented will have a single produce listed, and will be linked directly to the shopping basket. For an example of such a product page, please refer to Fignre 2 [sic]. In addition, Digital River will develop an online store featuring all of EA's products. Like the current EA Store, users can search by product category, key words, or platform. Product specials or new products can be featured on the front page of this store to provide for greater attention. For an example of how the EA Store might look, please refer to Fignre 2." *Digital River Proposal Summary,* April 29, 1998; [DR000066-72] (emphasis original). *See also* Tango, Webstar, and other CGIs from July 1996 Backup [DR026771-DR033425]

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
1(a)(i)	wherein each of the first web pages belongs to one of a plurality of web page owners;	 [DR037478- DR037479]. [DR026695-729] (showing agreement and fax communications between DR and Mitek regarding selling Mitek software on Cyber411, dtpdirect, winsite, 21softwaredrive, and other sites). [DR026737-57] (Setting out commission rates for sale of products from software publishers through "3rd Party Hosts," DR, or DTP websites). *See also* [DR074637-074669].

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
1(a)(ii)	wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	1) End User 2) Client Web Site 4) Secure Purchase and Download 3) Client Web Store 5) End User Transaction Data Warehouse 6) Reports and Analysis "After clicking on the "Buy Button", the end-user is transferred to a Web store hosted on Digital River's commerce network server ("CNS"), which replicates the look and feel of the client Web site." [DR037478-DR037479].

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		 August 11, 1998 Prospectus at 2 [DR074557-074636]. "Vendor's Delivery Obligations. a. Initial Deliverables. . . . Vendor will provide Electronic Distributor with . . . (iv) hypertext link to www.digitalriver.com in the Vendor's World Wide Web home page . . . ." *Electronic Software Distribution Agreement* between Digital River and Auto F/X Corp. dated July 18, 1996; [DR000013-21]; *see also e.g., Email from Digital River to Auto FX*, dated September 26, 1997; [DR000033] ("The URL for the Auto FX site is at the bottom of this email.");

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		"Bitstream Fonts Online!" hypertext link ("<A HREF=http://www2.digitalriver.com/bit/index.html">Bitstream fonts online!<A>"); *Bitstream.com Home Page*, http://webarchive.org/web/19970117165233/http://www.bitstream.com/; [DR000034-38]; "Shop Online" hypertext link; *Seattle Support Group Home Page*, www.ssgrp.com; [DR000039-50]; "Welcome to 1stSoftware" hypertext link ("Welcome to 1stSoftware"); [DR000051-54]; and "purchase QFX on the web" hypertext link ("A href=http://www3.digitalriver.com/cgi-bin/tango.cgi/digitalriver/rscott/welcome.qry?"); *QFX Home Page*, http://web.archive.org/web/19970707093153/www.qfx.com/frmain.html; [DR000055-62]; [DR026692]; [DR026693]; and [DR026694].

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
1(a)(iii)	wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	 [DR037478- DR037479]. [DR026695-729] (showing agreement and fax communications between DR and Mitek regarding selling Mitek software on Cyber411, dtpdirect, winsite, 21softwaredrive, and other sites). [DR026737-57] (Setting out commission rates for sale of products from software publishers through "3rd Party Hosts," DR, or DTP websites). *See also* [DR074637-074669].
1(b)	automatically retrieving from a storage coupled to the	Flow chart depicting "The Digital River Internet Ordering System (StoryBoard Overview)" and stating "[a]ll ISV and Dealer pages are located on the Digital River Server." DR000007-12].

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
	server pre stored data associated with the source page; and then	Flow chart depicting "Level 1" and stating that depicted ISV and Dealer pages "will actually be built 'on-the-fly' as users arrive from various ISV and Dealer web pages using database image and content values . . . The user will be presented with a page on the Digital River Server that is similar in feel to the ISV or Dealer page." [DR000007-12]. "Vendor's Delivery Obligations. a. Initial Deliverables. . . . Vendor will provide Electronic Distributor with . . . (v) all the items and materials specified in the 'Requirements Checklist' on Exhibit A . . . . Exhibit A . . . II Requirements Checklist . . . 7) Trademarks/logos (.gif file). *Electronic Software Distribution Agreement* between Digital River and Auto F/X Corp. dated July 18, 1996; [DR000013-21]; *see also e.g., Email from root to ftplist@digitalriver.com*, dated October 19, 1997; [DR000022] (example of Digital River client "FTP upload notification"). "Adobe's customers will be able to access Adobe products at maximum bandwidth from multiple FTP servers." *Internet Commerce Services Proposal for Adobe,* July 25, 1996; [DR000005-6]. "**Digital River's Proposed Solution** Digital River will manage MathSoft's online store and work with MathSoft's current staff to integrate purchasing options throughout the entire web site to enable customers to purchase products more easily. We will develop all commerce pages using MathSoft's branding and color schemes in an effort to remain as transparent as possible." *Digital River Proposal To Mathsoft, Inc.*; [DR000023-25]at 2 (emphasis original). "**Development** – the development of an easy to use online store is done by DR [Digital River] to fit the look and feel of your home web site at no cost. DR will incorporate your color schemes, logos and general feel in an attempt to remain as transparent as possible. **Maintenance of the online store** – DR gives you two options in the maintenance of your store. First, you have access to your Account Development Manager to make changes to your site. These may include pricing changes, product additions or deletions, or just a change in the look or flow of the site which may increase revenues. Your second option is to make these changes yourself in DR's system through a private, secure URL." *Digital River's Percentage of Sales Model – A Value Proposition;* [DR000026-27]at 2 (emphasis original).

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		Welcome to Bitstream, Inc., http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstructed inserting referenced .gif files; [DR000028-31], [DR000032]; "Vendor's Delivery Obligations. a. Initial Deliverables. . . . Vendor will provide Electronic Distributor with . . . (iv) hypertext link to www.digitalriver.com in the Vendor's World Wide Web home page . . . ." *Electronic Software Distribution Agreement* between Digital River and Auto F/X Corp. dated July 18, 1996; [DR000013-21]; *see also e.g., Email from Digital River to Auto FX*, dated September 26, 1997; [DR000033] ("The URL for the Auto FX site is at the bottom of this email."); "Bitstream Fonts Online!" hypertext link ("<A HREF=http://www2.digitalriver.com/bit/index.html">Bitstream fonts online!<A>"); *Bitstream.com Home Page*, http://webarchive.org/web/19970117165233/http://www.bitstream.com/; [DR000034-38]; "Shop Online" hypertext link; *Seattle Support Group Home Page*, www.ssgrp.com; [DR000039-50]; "Welcome to 1stSoftware" hypertext link ("Welcome to 1stSoftware"); [DR000051-54]; "purchase QFX on the web" hypertext link ("A href=http://www3.digitalriver.com/cgi-bin/tango.cgi/digitalriver/rscott/welcome.qry?"); *QFX Home Page*, http://web.archive.org/web/19970707093153/www.qfx.com/frmain.html; [DR000055-62]; [DR026692]; [DR026693]; and [DR026694]. [DR034615-16] (data associated with source page Digital Frontiers stored on DR server). [DR034606-07] (data associated with source page Bitstream stored on DR server).

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1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes:	4) Secure Purchase and Download 1) End User 7) Merchandising Services 2) Client Web Site 3) Client Web Store 5) End-User Transaction Data Warehouse 6) Reports and Analysis "After clicking on the "Buy Button", the end-user is transferred to a Web store hosted on Digital River's commerce network server ("CNS"), which replicates the look and feel of the client Web site." [DR037478-DR037479].

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		 August 11, 1998 Prospectus at 2 [DR074557-074636]. "**Extending your selling environment** Better yet, the entire transaction takes place in the selling environment you've created, surrounded by the look and feel of your identity, with your products presented the way you want them presented, with no competition. Your customers simply hit the purchase icon at your site and the whole process unfolds smoothly. There's no sensation of being suddenly hustled off to another location. Your customers won't end up at some foreign-looking page where they have to hunt to find your product. You can even prompt customers to purchase additional products, for instance printed

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		manuals or more of your software. And it all takes place during a single purchase process. Digital River has created seamless continuity." *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19971221024519/.digitalriver.com/Page3.html; [DR000003-4] (emphasis original). "Digital River's Secure Sales System (SSS) brings together software manufacturers and dealers enabling them to sell and deliver product via the Internet. This service will provide all digital delivery, security, collections and reporting of the sale of software. Throughout this process it will appear to the consumer as if the transaction is being processed by the manufacturer or dealer while Digital River SSS is handling the whole transaction 'behind the scenes'." [sic] *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19970412100754/http://www.digitalriver.com/; [DR000001-2]. "Digital River will develop and manage an online store for IMSI for the purpose of offering MasterClips products for sale on the www.masterclips.com web site. These products will include: up to 300,000 MasterClips images and clipart, 40,000 images under license from Corel and assorted applications from the IMSI selection of software. This store will be designed to mirror the look and feel of www.masterclips.com and will contain a complete commerce system for online product delivery." *IMSI/Digital River Online Store for Masterclips Products Software Superstore linked to www.masterclips.com,* dated December 16, 1997; [DR000063-64]. "[W]e provide an electronic commerce solution for your website. We emulate the look and feel of your site so an end-user can come in and pay for product via a secure credit card solution and download the product directly." *Letter from Digital River to Kathy Haynes of Traveling Software,* dated September 11, 1997; [DR000065]. "**Consistent Look and Feel between Store and Home Site** Customers will have the ability to click a 'buy button' from any number of places within www.ea.com and will be linked to a complete store, or a specific product detail page. All of the Commerce pages will carry the branding, look and feel of www.ea.com. This consistent look and feel is essential to a smooth customer experience, and will promote high conversion ratios.

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		For every product page within www.ea.com, Digital River can provide EA with specific URL's for direct product links. This will allow users to shop direction on www.ea.com, and have the ability to purchase product at any time. The page presented will have a single produce listed, and will be linked directly to the shopping basket. For an example of such a product page, please refer to Figure 2 [sic]. In addition, Digital River will develop an online store featuring all of EA's products. Like the current EA Store, users can search by product category, key words, or platform. Product specials or new products can be featured on the front page of this store to provide for greater attention. For an example of how the EA Store might look, please refer to Figure 2." *Digital River Proposal Summary,* April 29, 1998; [DR000066-72] (emphasis original). "Using its CNS platform, the Company creates Web stores for its clients that replicate the look and feel of such client's own Web sites. End-users browse for products and make purchases online, and, once purchases are made, the Company delivers the products directly to the end-users, primarily through ESD." BancAmerica, *Digital River, Inc., Initiating Coverage of Emerging Software E-Business Franchise,* September 8, 1998; [DR000073-79]. As explained above, the specific elements contained on the e-commerce supported web pages corresponding to the captured "look and feel description" of the host (client) website vary based upon the look and feel of the host website. Such elements utilized in the Digital River SSS process include: top banners utilizing host logos and/or names, and hypertext links to host webpages; left side navigation buttons; footers utilizing host logos and/or names, hypertext links to host webpages, and copyright notices; color schemes consistent with those utilized in host websites, including background, font, and graphics color schemes; and page layout consistent with host website. Examples of the use of such elements include: *Welcome to Bitstream, Inc.*, http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstructed inserting referenced .gif files; [DR000028-31], [DR000032]; *see also Facsimile from Andrea Rizzo of Bitstream, Inc.*, dated January 24, 1997; [DR000080-86] (forwarding copies of individual Digital River maintained pages for Bitstream online ordering system); *Seattle Support Group*, http://www.digitalriver.com/digitalriver/Welcome.qry?type=I+id=1001; and http://www.digitalriver.com/digitalriver/insertitem.qry?function=insert&item=CDPLV1-TOTW;

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		[DR000039-50] (Correspondence from Yasuo Noshiro, dated August 2, 1996); *1st Software*, http://www3.digitalriver.com/cgi-b...A1&_UserReference=88DE7EC7E9BB083A; [DR000087-88]; *Ronn Scott, Inc. Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10295; [DR000089]; *Arrow Publishing Software Store*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000090]; *DTP Direct Software Store*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000091]; *Integratech Software Software Store*, https://www.digitalriver.com/v2...c_Main.Entry9?SP=10039&PN=1&s1=; [DR000092]; *Innovation Multimedia Software Store*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000093]; *2ask Software Store*, http://www3.digitalriver.com/cgi-b...C958CCE254093&function=search_prod; [DR000094]; *North Beach Labs Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&CID=0&SID=66; [DR000095]; *Welcome to Blue Byte Software, Inc. Ordering System*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/Blubyte/welcome.qry; [DR000096-97]; *Auto F/X Corporation Software Store*, http://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=29; [DR000098-100]; *SFS Software Software Store*,

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		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR000101];
		Sapient Software Software Store, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR000102-103];
		Buycomp.com, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?V1=10029&PN=1&xid=5452; [DR000104-111];
		DTP Direct, http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112];
		Lucia Font Family, http://www3digitalriver.com/cgi-bin/Tango3.cgi/digitalriver/yandy/setdetail.qry?set=Lucid2;[DR000113-115;
		Digital River Proposal Summary, April 29, 1998, Figures 1, 2; [DR000066-72];
		MICROPROSE; [DR001002-1003];
		http://www.digitalriver.com/dr/v2/...IN.Entry10?SP=10023&PN=1&V1=101760; [DR001247];
		Adaptec, Inc., http://wwwdigitalriver.com/dr/v2/ec_main.entry?sid=6734&sp=10007/&cid=0; [DR002313];
		Sapient Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR011752-11753];
		SFS Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR011948];
		Ositis Software; https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR012171];
		Net Nanny; https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR012399];
		Nesbitt Software Corporation, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR012486-12487];
		Sunbow International, Inc.;

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		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19980; [DR012586]; *Tympani Development*, http://www4.digitalriver.com/digitalriver/tympani/basket2.htm; [DR013400-13401; DR013404-13410]; *Valley of Fire Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR013718-13720]; *Virtus Corporation*, http://www4.digitalriver/cgi-bin/Tango.cgi/digitalriver/virtus/welcome.qry; [DR013998-14003; DR014005-14007]; *Jan's Journeys*, http://www3.digitalriver/cgi-bin/Tango.cgi/esd/Webering/insertitem.qry?_UserReference=; [DR014211]; *Wheeler Arts*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=748&SP=10007&CID=0; [DR014452-14453]; *Whirlwind Technologies*, http://www3.digitalriver.com/cgi-b...digitalriver/whirlwind/welcome.qry; [DR014553-14555]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR014746-14747]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR014794]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR015415]; *Encore Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR015956]; *Extensis PhotoTools*, http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305];

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		Peach Systems, http://www/digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&v1=114/9; [DR016499]; *Peak Technology Ltd.*, http://www.digitalriver.com/v20/plsql/ec_Main.Entry?SP=10007&SID=15008&CID=0; [DR016550-16552]; *PIM Sarl*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR016751; DR016754-16755]; *PY Software, Inc*., http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=20061; [DR017056]; *RBC, Inc.*; https://www.digitalriver.com/v2…c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR017278]; *JP Software, Inc*., http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/jpsoft/welcome.qry; [DR018176]; *Sonera Technologies*, http://www3.digitalriver.com/cgi-bin/Tango6.cgi/esd/sonera/welcome.qry; [DR018642]; *DisplayMate for Windows*, http://www3.digitalriver.com/cgi-bin/Tang...erence=2BD41D0878A00990&prod=STD-60001-A1; [DR018643]; *Southern Software, Inc*., http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19092; [DR018660]; *Spectrum Unlimited*, http://www.digitalriver.com/dr/v2/ec_Main.Entry?SP=10007&SID=399&CID=0&CUR=840; [DR019032]; *Cat Computer Services (P) Ltd*.,

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		https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR019161]; *Cloud Dragon Designs*, http://www.digitalriver.com/v20...IN.Entry11?sp=10007&PN=1&xid=57; [DR019348]; *Cloud Dragon Designs*, http://www3.digitalriver.com/cgi-bin/Ta...ence=EECF0FF7BC4E7715&function=continue; [DR019354-19357]; *QRSMusic*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020394]; *QRSMusic*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/QRSMusic/welcome.qry?; [DR020395-20398]; *PHD Computer Consultants Ltd*., https://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=237; [DR020584]; *ParaMind*, http://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020638]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR020696]; *Fixed It! Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020730]; *Forward Design*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020807]; *Global Majic Software, Inc*., http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/gms/welcome.qry; [DR020915-20916]; *Global Majic Software, Inc*., https://www.digitalriver.com/v20/plsql/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020931] *Global Majic Software, Inc*., http://www.digitalriver.com/v20...IN.Entry?SID=129&SP=10007&CID=0;

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		[DR020932-20933]; *IDM Computer Services*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021425]; *Incline Software, LC*, …/ec_MAIN.Entry?SP=10007&SID=30196&CID=0&CUR=840&DSP=0&PGRP=0&CACHE_ID; [DR021508]; *Innovation Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021688]; *Intelligent Technologies*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021824]; *InterDimensions Corp*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021884]; *IrwinWare*, http://www.digitalri.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=546&PID=24147; [DR021996]; *Olympus America, Inc*., http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&SID=64&CID=0; [DR022112-22116]; *Omnibus Typografi*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=405&SP=10007&CID=0; [DR022212]; *Open Window Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022232]; *FileStream.com, Inc*., http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18660; [DR022291];

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		FileStream.com, Inc., http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18267; [DR022295-22296]; *Parthenon Development Corp*., https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022379]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022396]; *KH Software Development*, http://www.digitalriver.com/dr/v2/...10007&PN=5&CID=0&SID=912&PID=20301; [DR022595]; *KnoWare, Inc*., wysiwyg://178/https://www.digitalr…r/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022645]; *KnoWare, Inc*., http://www3.digitalriver.com/cgi-b...c/itemdetail.qry?prod=KWI-60001-D1; [DR022671-22672]; *Lateral Technologies*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022714]; *LatticeWork Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=255&PID=11972; [DR022732-22733]; *Live Picture*, http://www3.digitalriver.com/cg...alriver/livepicture/welcome.qry; [DR023055]; *Live Picture*, http://www3.digitalriver.com/di..._UserReference=D39AE4981060E05E; [DR023056-23057]; http://www3.digitalriver.com/di...&item=LP!-5000-A1&Version=WIN95; [DR023058];

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		http://www3.digitalriver.com/di...E05E&function=form&order=113646; [DR023059]; *WinSite*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023093; DR023095]; *DTP Direct*, http://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023202]; *M.Casco Associates*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023236]; *Mach5 Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023264]; *MacPEAK*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=37&PID=9749; [DR023328]; *Magic Software*, http://www.digitalrive...ver/magic3/welcome.qry; [DR023359]; *Markus Friberg Data*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023404]; *Matchup Sports*, https://www.digitalriver.com/v2..c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023442]; *Medea International Limited*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023746]; *KittyHawk Software, Inc*., http://www3.digitalriver.com/cgi-b...wk/itemdetail.qry?prod=KH-60002-A1; [DR023884]; *Mercury Interactive Corp*., https://www.digitalriver.com/v2...i/ec_Main.Entry11?SP=10039&PN=1; [DR023887-23888]; *Morpheus Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024342];

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		DTP Direct, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024360]; *M & R Technologies, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024369]; *MSI Software, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024389]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024415]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024512]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024532]; *NetFormation, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024601]; *NetResults Corporation*, https://www.digitalriver.com/v2...l/ec_MAIN.Entry11?SP=10039&PN=1; [DR024649]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024675]; *New Perspective Software, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024693]; *New Vision Technologies, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024736]; *NiceTime Entertainment*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024844]; *Nordic Software*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024880]; *3DP Object Technology, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=;

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		[DR025125]; *DTP Direct,* https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025142]; *A. J. Enterprises*, http://www.digitalriver.com/digitalriver/ajent/itemdetail.qry?prod=AJ-001; [DR025445-25446]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...BA5E73D1BF84D&function=search_prod; [DR025637]; *Apple Mountain Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025786]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tan...ion=insert&item=ARC-60012-A1&version=DC; [DR025814]; *ARCaine Technology*, http://inv1.digitalriver.com/cgi-bin/uncgi/arcaine.htm; [DR025816]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/arcaine/welcome.q; [DR025821-25823]; *Artbeats Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=11495; [DR025922]; *Atlanta Computer Resources*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025990]; *Up To Par*, http://www3.digitalriver.com/cgi-b...s/itemdetail.qry?prod=AUT-00001-A1; [DR026068]; *Author Direct Shareware*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026163]; *Best Effort Software*, http://www,digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=81&PID=17937; [DR026303];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Best Effort Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026323]; *BuenSoft Co.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026516]; *1st Stop*, http://www.1stopsoft.com/how2buy.htm; [DR001141-1143]; *ScheduleMaker*, http://webarchive.org/web/20000303191644/www.craigsystems.com/; [DR026692]; [DR026693]; and [DR026694].
1(c)(i)	(i) information associated with the commerce object associated with the link that has been activated, and	"**Extending your selling environment** Better yet, the entire transaction takes place in the selling environment you've created, surrounded by the look and feel of your identity, with your products presented the way you want them presented, with no competition. Your customers simply hit the purchase icon at your site and the whole process unfolds smoothly. There's no sensation of being suddenly hustled off to another location. Your customers won't end up at some foreigu-looking page where they have to hunt to find your product. You can even prompt customers to purchase additional products, for instance printed manuals or more of your software. And it all takes place during a single purchase process. Digital River has created seamless continuity." *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19971221024519/.digitalriver.com/Page3.html; [DR000003-4] (emphasis original). "Digital River's Secure Sales System (SSS) brings together software manufacturers and dealers enabling them to sell and deliver product via the Internet. This service will provide all digital delivery, security, collections and reporting of the sale of software. Throughout this process it will appear to the consumer as if the transaction is being processed by the manufacturer or dealer while Digital River SSS is handling the whole transaction 'behind the scenes'." [sic] *Digital River – Secure Encrypted Software Distribution,*

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		http://web.archive.org/web/19970412100754/http://www.digitalriver.com/; [DR000001-2]. "Digital River will develop and manage an online store for IMSI for the purpose of offering MasterClips products for sale on the www.masterclips.com web site. These products will include: up to 300,000 MasterClips images and clipart, 40,000 images under license from Corel and assorted applications from the IMSI selection of software. This store will be desigued to mirror the look and feel of www.masterclips.com and will contain a complete commerce system for online product delivery." *IMSI/Digital River Online Store for Masterclips Products Software Superstore linked to www.masterclips.com,* dated December 16, 1997; [DR000063-64]. "[W]e provide an electronic commerce solution for your website. We emulate the look and feel of your site so an end-user can come in and pay for product via a secure credit card solution and download the product directly." *Letter from Digital River to Kathy Haynes of Traveling Software,* dated September 11, 1997; [DR000065]. "**Consistent Look and Feel between Store and Home Site** Customers will have the ability to click a 'buy button' from any number of places within www.ea.com and will be linked to a complete store, or a specific product detail page. All of the Commerce pages will carry the branding, look and feel of www.ea.com. This consistent look and feel is essential to a smooth customer experience, and will promote high conversion ratios. For every product page within www.ea.com, Digital River can provide EA with specific URL's for direct product links. This will allow users to shop direction on www.ea.com, and have the ability to purchase product at any time. The page presented will have a single produce listed, and will be linked directly to the shopping basket. For an example of such a product page, please refer to Figure 2 [sic]. In addition, Digital River will develop an online store featuring all of EA's products. Like the current EA Store, users can search by product category, key words, or platform. Product specials or new products can be featured on the front page of this store to provide for greater attention. For an example of how the EA Store might look, please refer to Figure 2." *Digital River Proposal Summary,* April 29, 1998; [DR000066-72] (emphasis original). "Using its CNS platform, the Company creates Web stores for its clients that replicate the look and feel of

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		such client's own Web sites. End-users browse for products and make purchases online, and, once purchases are made, the Company delivers the products directly to the end-users, primarily through ESD." BancAmerica, *Digital River, Inc., Initiating Coverage of Emerging Software E-Business Franchise,* September 8, 1998; [DR000073-79].
		
		As explained above, the specific elements contained on the e-commerce supported web pages corresponding to the captured "look and feel description" of the host (client) website vary based upon the look and feel of the host website. Such elements utilized in the Digital River SSS process include: top banners utilizing host logos and/or names, and hypertext links to host webpages; left side navigation buttons; footers utilizing host logos and/or names, hypertext links to host webpages, and copyright notices; color schemes consistent with those utilized in host websites, including background, font, and graphics color schemes; and page layout consistent with host website. Examples of the use of such elements include:
		
		Welcome to Bitstream, Inc.,
		http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstrncted inserting referenced .gif files; Exs. 9 [DR000028-31], 10 [DR000032]; *see also Facsimile from Andrea Rizzo of Bitstream, Inc.*, dated January 24, 1997; [DR000080-86] (forwarding copies of individual Digital River maintained pages for Bitstream online ordering system);
		
		Seattle Support Group, http://www.digitalriver.com/digitalriver/Welcome.qry?type=I+id=1001; and http://www.digitalriver.com/digitalriver/insertitem.qry?function=insert&item=CDPLV1-TOTW; [DR000039-50] (Correspondence from Yasuo Noshiro, dated August 2, 1996);
		
		1st Software, http://www3.digitalriver.com/cgi-b...A1&_UserReference=88DE7EC7E9BB083A; [DR000087-88];
		
		Ronn Scott, Inc. Software Store,
		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10295; [DR000089];
		
		Arrow Publishing Software Store,
		https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000090];
		
		DTP Direct Software Store, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=;

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		[DR000091]; *Integratech Software Software Store,* https://www.digitalriver.com/v2...c_Main.Entry9?SP=10039&PN=1&s1=; [DR000092]; *Innovation Multimedia Software Store,* https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000093]; *2ask Software Store,* http://www3.digitalriver.com/cgi-b...C958CCE254093&function=search_prod; [DR000094]; *North Beach Labs Software Store,* http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&CID=0&SID=66; [DR000095]; *Welcome to Blue Byte Software, Inc. Ordering System,* http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/Blubyte/welcome.qry; [DR000096-97]; *Auto F/X Corporation Software Store,* http://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=29; [DR000098-100]; *SFS Software Software Store,* http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR000101]; *Sapient Software Software Store,* http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR000102-103]; *Buycomp.com,* http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?V1=10029&PN=1&xid=5452; [DR000104-111]; *DTP Direct,* http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112]; *Lucia Font Family,* http://www3digitalriver.com/cgi-bin/Tango3.cgi/digitalriver/yandy/setdetail.qry?set=Lucid2; [DR000113-115;

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		Digital River Proposal Summary, April 29, 1998, Figures 1, 2; [DR000066-72]; *MICROPROSE*; [DR001002-1003]; http://www.digitalriver.com/dr/v2/...IN.Entry10?SP=10023&PN=1&V1=101760; [DR001247]; *Adaptec, Inc.*, http://wwwdigitalriver.com/dr/v2/ec_main.entry?sid=6734&sp=10007/&cid=0; [DR002313]; *Sapient Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR011752-11753]; *SFS Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR011948]; *Ositis Software*; https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR012171]; *Net Nanny*; https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR012399]; *Nesbitt Software Corporation*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR012486-12487]; *Sunbow International, Inc.*; http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19980; [DR012586]; *Tympani Development*, http://www4.digitalriver.com/digitalriver/tympani/basket2.htm; [DR013400-13401; DR013404-13410]; *Valley of Fire Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR013718-13720]; *Virtus Corporation*, http://www4.digitalriver/cgi-bin/Tango.cgi/digitalriver/virtus/welcome.qry; [DR013998-14003; DR014005-14007];

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		Jan's Journeys, http://www3.digitalriver/cgi-bin/Tango.cgi/esd/Webering/insertitem.qry?_UserReference=; [DR014211]; *Wheeler Arts*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=748&SP=10007&CID=0; [DR014452-14453]; *Whirlwind Technologies*, http://www3.digitalriver.com/cgi-b...digitalriver/whirlwind/welcome.qry; [DR014553-14555]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry9?SP=10039&PN=1&s1=;[DR014746-14747]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR014794]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR015415]; *Encore Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR015956]; *Extensis PhotoTools*, http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305]; *Peach Systems*, http://www/digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&v1=114/9; [DR016499]; *Peak Technology Ltd.*, http://www.digitalriver.com/v20/pisql/ec_Main.Entry?SP=10007&SID=15008&CID=0; [DR016550-16552]; *PIM Sarl*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR016751; DR016754-16755];

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		PY Software, Inc., http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=20061; DR017056]; *RBC, Inc.*; https://www.digitalriver.com/v2…c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR017278]; *JP Software, Inc.*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/jpsoft/welcome.qry; [DR018176]; *Sonera Technologies*, http://www3.digitalriver.com/cgi-bin/Tango6.cgi/esd/sonera/welcome.qry; [DR018642]; *DisplayMate for Windows*, http://www3.digitalriver.com/cgi-bin/Tang...erence=2BD41D0878A00990&prod=STD-60001-A1; [DR018643]; *Southern Software, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19092; [DR018660]; *Spectrum Unlimited*, http://www,digitalriver.com/dr/v2/ec_Main.Entry?SP=10007&SID=399&CID=0&CUR=840; [DR019032]; *Cat Computer Services (P) Ltd.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR019161]; *Cloud Dragon Designs*, http://www.digitalriver.com/v20...IN.Entry11?sp=10007&PN=1&xid=57; [DR019348]; *Cloud Dragon Designs*, http://www3.digitalriver.com/cgi-bin/Ta...ence=EECF0FF7BC4E7715&function=continue; [DR019354-19357]; *QRSMusic*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020394];

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		QRSMusic, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/QRSMusic/welcome.qry?; [DR020395-20398]; *PHD Computer Consultants Ltd.*, https://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=237; [DR020584]; *ParaMind*, http://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020638]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR020696]; *Fixed It! Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020730]; *Forward Design*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020807]; *Global Majic Software, Inc.*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/gms/welcome.qry; [DR020915-20916]; *Global Majic Software, Inc.*, https://www.digitalriver.com/v20/plsql/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020931] *Global Majic Software, Inc.*, http://www.digitalriver.com/v20...IN.Entry?SID=129&SP=10007&CID=0; [DR020932-20933]; *IDM Computer Services*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021425]; *Incline Software, LC*, .../ec_MAIN.Entry?SP=10007&SID=30196&CID=0&CUR=840&DSP=0&PGRP=0&CACHE_ID; [DR021508]; *Innovation Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021688];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Intelligent Technologies, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021824]; *InterDimensions Corp.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021884]; *IrwinWare*, http://www.digitalri.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=546&PID=24147; [DR021996]; *Olympus America, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&SID=64&CID=0; [DR022112-22116]; *Omnibus Typografi*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=405&SP=10007&CID=0; [DR022212]; *Open Window Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022232]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18660; [DR022291]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18267; [DR022295-22296]; *Parthenon Development Corp.*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022379]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022396]; *KH Software Development*,

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		http://www.digitalriver.com/dr/v2/...10007&PN=5&CID=0&SID=912&PID=20301; [DR022595];
		KnoWare, Inc., wysiwyg://178/https://www.digitalr…r/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022645];
		KnoWare, Inc., http://www3.digitalriver.com/cgi-b...c/itemdetail.qry?prod=KWI-60001-D1; [DR022671-22672];
		Lateral Technologies, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022714];
		LatticeWork Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=255&PID=11972; [DR022732-22733];
		Live Picture, http://www3.digitalriver.com/cg...alriver/livepicture/welcome.qry; [DR023055];
		Live Picture, http://www3.digitalriver.com/di..._UserReference=D39AE4981060E05E; [DR023056-23057];
		http://www3.digitalriver.com/di...&item=LP!-5000-A1&Version=WIN95; [DR023058];
		http://www3.digitalriver.com/di...E05E&function=form&order=113646; [DR023059];
		WinSite, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023093; DR023095];
		DTP Direct, http://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023202];
		M.Casco Associates, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023236];
		Mach5 Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023264];

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		MacPEAK, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=37&PID=9749; [DR023328]; *Magic Software*, http://www.digitalrive...ver/magic3/welcome.qry; [DR023359]; *Markus Friberg Data*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023404]; *Matchup Sports*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023442]; *Medea International Limited*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023746]; *KittyHawk Software, Inc.*, http://www3.digitalriver.com/cgi-b...wk/itemdetail.qry?prod=KH-60002-A1; [DR023884]; *Mercury Interactive Corp.*, https://www.digitalriver.com/v2...l/ec_Main.Entry11?SP=10039&PN=1; [DR023887-23888]; *Morpheus Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024342]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024360]; *M & R Technologies, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024369]; *MSI Software, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024389]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024415]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024512];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Mythic Images, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024532]; *NetFormation, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024601]; *NetResults Corporation*, https://www.digitalriver.com/v2...l/ec_MAIN.Entry11?SP=10039&PN=1; [DR024649]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024675]; *New Perspective Software, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024693]; *New Vision Technologies, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024736]; *NiceTime Entertainment*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024844]; *Nordic Software*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024880]; *3DP Object Technology, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025125]; *DTP Direct,* https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025142]; *A. J. Enterprises*, http://www.digitalriver.com/digitalriver/ajent/itemdetail.qry?prod=AJ-001; [DR025445-25446]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...BA5E73D1BF84D&function=search_prod; [DR025637]; *Apple Mountain Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025786];

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		ARCaine Technology, http://www4.digitalriver.com/cgi-bin/Tan...ion=insert&item=ARC-60012-A1&version=DC; [DR025814]; *ARCaine Technology*, http://inv1.digitalriver.com/cgi-bin/uncgi/arcaine.htm; [DR025816]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/arcaine/welcome.q; [DR025821-25823]; *Artbeats Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=11495; [DR025922]; *Atlanta Computer Resources*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025990]; *Up To Par*, http://www3.digitalriver.com/cgi-b...s/itemdetail.qry?prod=AUT-00001-A1; [DR026068]; *Author Direct Shareware*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026163]; *Best Effort Software*, http://www,digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=81&PID=17937; [DR026303]; *Best Effort Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026323]; *BuenSoft Co.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026516]; *1st Stop*, http://www.1stopsoft.com/how2buy.htm; [DR001141-1143]; *ScheduleMaker*, http://webarchive.org/web/20000303191644/www.craigsystems.com/; [DR026692];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		[DR026693]; and [DR026694].
1(c)(ii)	(ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	"**Extending your selling environment** Better yet, the entire transaction takes place in the selling environment you've created, surrounded by the look and feel of your identity, with your products presented the way you want them presented, with no competition. Your customers simply hit the purchase icon at your site and the whole process unfolds smoothly. There's no sensation of being suddenly hustled off to another location. Your customers won't end up at some foreign-looking page where they have to hunt to find your product. You can even prompt customers to purchase additional products, for instance printed manuals or more of your software. And it all takes place during a single purchase process. Digital River has created seamless continuity." *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19971221024519/.digitalriver.com/Page3.html; [DR000003-4] (emphasis original). "Digital River's Secure Sales System (SSS) brings together software manufacturers and dealers enabling them to sell and deliver product via the Internet. This service will provide all digital delivery, security, collections and reporting of the sale of software. Throughout this process it will appear to the consumer as if the transaction is being processed by the manufacturer or dealer while Digital River SSS is handling the whole transaction 'behind the scenes'." [sic] *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19970412100754/http://www.digitalriver.com/; [DR000001-2]. "Digital River will develop and manage an online store for IMSI for the purpose of offering MasterClips products for sale on the www.masterclips.com web site. These products will include: up to 300,000 MasterClips images and clipart, 40,000 images under license from Corel and assorted applications from the IMSI selection of software. This store will be designed to mirror the look and feel of www.masterclips.com and will contain a complete commerce system for online product delivery." *IMSI/Digital River Online Store for Masterclips Products Software Superstore linked to www.masterclips.com,* dated December 16, 1997; [DR000063-64]. "[W]e provide an electronic commerce solution for your website. We emulate the look and feel of your site

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		so an end-user can come in and pay for product via a secure credit card solution and download the product directly." *Letter from Digital River to Kathy Haynes of Traveling Software,* dated September 11, 1997; [DR000065]. "**Consistent Look and Feel between Store and Home Site** Customers will have the ability to click a 'buy button' from any number of places within www.ea.com and will be linked to a complete store, or a specific product detail page. All of the Commerce pages will carry the branding, look and feel of www.ea.com. This consistent look and feel is essential to a smooth customer experience, and will promote high conversion ratios. For every product page within www.ea.com, Digital River can provide EA with specific URL's for direct product links. This will allow users to shop direction on www.ea.com, and have the ability to purchase product at any time. The page presented will have a single produce listed, and will be linked directly to the shopping basket. For an example of such a product page, please refer to Fignre 2 [sic]. In addition, Digital River will develop an online store featuring all of EA's products. Like the current EA Store, users can search by product category, key words, or platform. Product specials or new products can be featured on the front page of this store to provide for greater attention. For an example of how the EA Store might look, please refer to Fignre 2." *Digital River Proposal Summary,* April 29, 1998; [DR000066-72] (emphasis original). "Using its CNS platform, the Company creates Web stores for its clients that replicate the look and feel of such client's own Web sites. End-users browse for products and make purchases online, and, once purchases are made, the Company delivers the products directly to the end-users, primarily through ESD." BancAmerica, *Digital River, Inc., Initiating Coverage of Emerging Software E-Business Franchise,* September 8, 1998; [DR000073-79]. As explained above, the specific elements contained on the e-commerce supported web pages corresponding to the captured "look and feel description" of the host (client) website vary based upon the look and feel of the host website. Such elements utilized in the Digital River SSS process include: top banners utilizing host logos and/or names, and hypertext links to host webpages; left side navigation buttons; footers utilizing host logos and/or names, hypertext links to host webpages, and copyright notices; color schemes consistent with those utilized in host websites, including background, font, and graphics

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		color schemes; and page layout consistent with host website. Examples of the use of such elements include: *Welcome to Bitstream, Inc.*, http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstructed inserting referenced .gif files; Exs. 9 [DR000028-31], 10 [DR000032]; *see also Facsimile from Andrea Rizzo of Bitstream, Inc.*, dated January 24, 1997; [DR000080-86] (forwarding copies of individual Digital River maintained pages for Bitstream online ordering system); *Seattle Support Group*, http://www.digitalriver.com/digitalriver/Welcome.qry?type=I+id=1001; and http://www.digitalriver.com/digitalriver/insertitem.qry?function=insert&item=CDPLV1-TOTW; [DR000039-50] (Correspondence from Yasuo Noshiro, dated August 2, 1996); *1st Software*, http://www3.digitalriver.com/cgi-b...A1& UserReference=88DE7EC7E9BB083A; [DR000087-88]; *Ronn Scott, Inc. Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10295; [DR000089]; *Arrow Publishing Software Store*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000090]; *DTP Direct Software Store*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000091]; *Integratech Software Software Store*, https://www.digitalriver.com/v2...c_Main.Entry9?SP=10039&PN=1&s1=; [DR000092]; *Innovation Multimedia Software Store*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000093]; *2ask Software Store*, http://www3.digitalriver.com/cgi-b...C958CCE254093&function=search_prod; [DR000094];

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		North Beach Labs Software Store, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&CID=0&SID=66; [DR000095]; *Welcome to Blue Byte Software, Inc. Ordering System*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/Blubyte/welcome.qry; [DR000096-97]; *Auto F/X Corporation Software Store*, http://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=29; [DR000098-100]; *SFS Software Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR000101]; *Sapient Software Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR000102-103]; *Buycomp.com*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?V1=10029&PN=1&xid=5452; [DR000104-111]; *DTP Direct*, http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112]; *Lucia Font Family*, http://www3digitalriver.com/cgi-bin/Tango3.cgi/digitalriver/yandy/setdetail.qry?set=Lucid2; [DR000113-115; *Digital River Proposal Summary*, April 29, 1998, Figures 1, 2; [DR000066-72]; *MICROPROSE*; [DR001002-1003]; http://www.digitalriver.com/dr/v2/...IN.Entry10?SP=10023&PN=1&V1=101760; [DR001247]; *Adaptec, Inc.*, http://wwwdigitalriver.com/dr/v2/ec_main.entry?sid=6734&sp=10007/&cid=0; [DR002313]; *Sapient Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR011752-11753];

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		SFS Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR011948]; *Ositis Software*; https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR012171]; *Net Nanny*; https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR012399]; *Nesbitt Software Corporation*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR012486-12487]; *Sunbow International, Inc.*; http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19980; [DR012586]; *Tympani Development*, http://www4.digitalriver.com/digitalriver/tympani/basket2.htm; [DR013400-13401; DR013404-13410]; *Valley of Fire Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR013718-13720]; *Virtus Corporation*, http://www4.digitalriver/cgi-bin/Tango.cgi/digitalriver/virtus/welcome.qry; [DR013998-14003; DR014005-14007]; *Jan's Journeys*, http://www3.digitalriver/cgi-bin/Tango.cgi/esd/Webering/insertitem.qry?_UserReference=; [DR014211]; *Wheeler Arts*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=748&SP=10007&CID=0; [DR014452-14453]; *Whirlwind Technologies*, http://www3.digitalriver.com/cgi-b...digitalriver/whirlwind/welcome.qry; [DR014553-14555]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR014746-14747];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Wilson Learning Corporation, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR014794]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR015415]; *Encore Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR015956]; *Extensis PhotoTools*, http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305]; *Peach Systems*, http://www/digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&v1=114/9; [DR016499]; *Peak Technology Ltd.*, http://www.digitalriver.com/v20/plsql/ec_Main.Entry?SP=10007&SID=15008&CID=0; [DR016550-16552]; *PIM Sarl*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR016751; DR016754-16755]; *PY Software, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=20061; [DR017056]; *RBC, Inc.*; https://www.digitalriver.com/v2…c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR017278]; *JP Software, Inc.*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/jpsoft/welcome.qry; [DR018176]; *Sonera Technologies*, http://www3.digitalriver.com/cgi-bin/Tango6.cgi/esd/sonera/welcome.qry; [DR018642]; *DisplayMate for Windows*,

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		http://www3.digitalriver.com/cgi-bin/Tang...erence=2BD41D0878A00990&prod=STD-60001-A1; [DR018643]; *Southern Software, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19092; [DR018660]; *Spectrum Unlimited*, http://www,digitalriver.com/dr/v2/ec_Main.Entry?SP=10007&SID=399&CID=0&CUR=840; [DR019032]; *Cat Computer Services (P) Ltd.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR019161]; *Cloud Dragon Designs*, http://www.digitalriver.com/v20...IN.Entry11?sp=10007&PN=1&xid=57; [DR019348]; *Cloud Dragon Designs*, http://www3.digitalriver.com/cgi-bin/Ta...ence=EECF0FF7BC4E7715&function=continue; [DR019354-19357]; *QRSMusic*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020394]; *QRSMusic*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/QRSMusic/welcome.qry?; [DR020395-20398]; *PHD Computer Consultants Ltd.*, https://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=237; [DR020584]; *ParaMind*, http://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020638]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR020696]; *Fixed It! Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020730];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Forward Design, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020807]; *Global Majic Software, Inc.*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/gms/welcome.qry; [DR020915-20916]; *Global Majic Software, Inc.*, https://www.digitalriver.com/v20/plsql/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020931] *Global Majic Software, Inc.*, http://www.digitalriver.com/v20...IN.Entry?SID=129&SP=10007&CID=0; [DR020932-20933]; *IDM Computer Services*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021425]; *Incline Software, LC*, .../ec_MAIN.Entry?SP=10007&SID=30196&CID=0&CUR=840&DSP=0&PGRP=0&CACHE_ID; [DR021508]; *Innovation Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021688]; *Intelligent Technologies*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021824]; *InterDimensions Corp.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021884]; *IrwinWare*, http://www.digitalri.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=546&PID=24147; [DR021996]; *Olympus America, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&SID=64&CID=0; [DR022112-22116];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Omnibus Typografi, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=405&SP=10007&CID=0; [DR022212]; *Open Window Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022232]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18660; [DR022291]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18267; [DR022295-22296]; *Parthenon Development Corp.*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022379]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022396]; *KH Software Development*, http://www.digitalriver.com/dr/v2/...10007&PN=5&CID=0&SID=912&PID=20301; [DR022595]; *KnoWare, Inc.*, wysiwyg://178/https://www.digitalr…r/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022645]; *KnoWare, Inc.*, http://www3.digitalriver.com/cgi-b...c/itemdetail.qry?prod=KWI-60001-D1; [DR022671-22672]; *Lateral Technologies*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022714]; *LatticeWork Software*,

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		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=255&PID=11972; [DR022732-22733];
		Live Picture, http://www3.digitalriver.com/cg...alriver/livepicture/welcome.qry; [DR023055];
		Live Picture, http://www3.digitalriver.com/di..._UserReference=D39AE4981060E05E; [DR023056-23057];
		http://www3.digitalriver.com/di...&item=LPI-5000-A1&Version=WIN95; [DR023058];
		http://www3.digitalriver.com/di...E05E&function=form&order=113646; [DR023059];
		WinSite, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023093; DR023095];
		DTP Direct, http://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023202];
		M.Casco Associates, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023236];
		Mach5 Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023264];
		MacPEAK, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=37&PID=9749; [DR023328];
		Magic Software, http://www.digitalrive...ver/magic3/welcome.qry; [DR023359];
		Markus Friberg Data, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023404];
		Matchup Sports, https://www.digitalriver.com/v2..c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023442];
		Medea International Limited, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023746];

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		KittyHawk Software, Inc., http://www3.digitalriver.com/cgi-b...wk/itemdetail.qry?prod=KH-60002-A1; [DR023884]; *Mercury Interactive Corp.*, https://www.digitalriver.com/v2...l/ec_Main.Entry11?SP=10039&PN=1; [DR023887-23888]; *Morpheus Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024342]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024360]; *M & R Technologies, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024369]; *MSI Software, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024389]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024415]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024512]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024532]; *NetFormation, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024601]; *NetResults Corporation*, https://www.digitalriver.com/v2...l/ec_MAIN.Entry11?SP=10039&PN=1; [DR024649]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024675]; *New Perspective Software, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024693];

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		New Vision Technologies, Inc., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024736]; *NiceTime Entertainment*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024844]; *Nordic Software*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024880]; *3DP Object Technology, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025125]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025142]; *A. J. Enterprises*, http://www.digitalriver.com/digitalriver/ajent/itemdetail.qry?prod=AJ-001; [DR025445-25446]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...BA5E73D1BF84D&function=search_prod; [DR025637]; *Apple Mountain Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025786]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tan...ion=insert&item=ARC-60012-A1&version=DC; [DR025814]; *ARCaine Technology*, http://inv1.digitalriver.com/cgi-bin/uncgi/arcaine.htm; [DR025816]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/arcaine/welcome.q; [DR025821-25823]; *Artbeats Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=11495; [DR025922];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Atlanta Computer Resources, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025990]; *Up To Par*, http://www3.digitalriver.com/cgi-b...s/itemdetail.qry?prod=AUT-00001-A1; [DR026068]; *Author Direct Shareware*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026163]; *Best Effort Software*, http://www,digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=81&PID=17937; [DR026303]; *Best Effort Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026323]; *BuenSoft Co.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026516]; *1st Stop*, http://www.1stopsoft.com/how2buy.htm; [DR001141-1143]; *ScheduleMaker*, http://webarchive.org/web/20000303191644/www.craigsystems.com/; [DR026692]; [DR026693]; and [DR026694]. [DR034615-16] (data associated with source page Digital Frontiers stored on DR server). [DR034606-07] (data associated with source page Bitstream stored on DR server).
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements	*Welcome to Bitstream, Inc.*, http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstructed inserting referenced .gif files; [DR000028-31], [DR000032]; *see also Facsimile from Andrea Rizzo of Bitstream, Inc.*, dated January 24, 1997; [DR000080-86] (forwarding copies of individual Digital River

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
	includes a set of navigational links on the source page.	maintained pages for Bitstream online ordering system); *Seattle Support Group*, http://www.digitalriver.com/digitalriver/Welcome.qry?type=I+id=1001; and http://www.digitalriver.com/digitalriver/insertitem.qry?function=insert&item=CDPLV1-TOTW; [DR000039-50] (Correspondence from Yasuo Noshiro, dated August 2, 1996); *1st Software*, http://www3.digitalriver.com/cgi-b...A1&_UserReference=88DE7EC7E9BB083A; [DR000087-88]; *DTP Direct Software Store*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000091]; *2ask Software Store*, http://www3.digitalriver.com/cgi-b...C958CCE254093&function=search_prod; [DR000094]; *Buycomp.com*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?V1=10029&PN=1&xid=5452; [DR000104-111]; *DTP Direct*, http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112]; *MICROPROSE*; [DR001002-1003]; *Adaptec, Inc.*, http://wwwdigitalriver.com/dr/v2/ec_main.entry?sid=6734&sp=10007/&cid=0; [DR002313]; *Sapient Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR011752-11753]; *SFS Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR011948]; *Ositis Software*; https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR012171]; *Net Nanny*; https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR012399];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Nesbitt Software Corporation, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR012486-12487]; *Sunbow International, Inc.*; http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19980; [DR012586]; *Valley of Fire Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR013718-13720]; *Wheeler Arts*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=748&SP=10007&CID=0; [DR014452-14453]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR014746-14747]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR014794]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR015415]; *Encore Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR015956]; *Extensis PhotoTools*, http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305]; *Peach Systems*, http://www/digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&v1=114/9; [DR016499]; *Peak Technology Ltd.*, http://www.digitalriver.com/v20/plsql/ec_Main.Entry?SP=10007&SID=15008&CID=0; [DR016550-16552];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		PIM Sarl, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR016751; DR016754-16755]; *PY Software, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=20061; [DR017056]; *RBC, Inc.*; https://www.digitalriver.com/v2…c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR017278]; *Southern Software, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19092; [DR018660]; *Spectrum Unlimited*, http://www,digitalriver.com/dr/v2/ec_Main.Entry?SP=10007&SID=399&CID=0&CUR=840; [DR019032]; *Cat Computer Services (P) Ltd.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR019161]; *Cloud Dragon Designs*, http://www.digitalriver.com/v20...IN.Entry11?sp=10007&PN=1&xid=57; [DR019348]; *QRSMusic*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020394]; *QRSMusic*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/QRSMusic/welcome.qry?; [DR020395-20398]; *ParaMind*, http://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020638]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR020696]; *Fixed It! Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020730]; *Forward Design*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020807];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Global Majic Software, Inc., https://www.digitalriver.com/v20/plsql/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020931]; *Global Majic Software, Inc.*, http://www.digitalriver.com/v20...IN.Entry?SID=129&SP=10007&CID=0; [DR020932-20933]; *IDM Computer Services*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021425]; *Incline Software, LC*, …/ec_MAIN.Entry?SP=10007&SID=30196&CID=0&CUR=840&DSP=0&PGRP=0&CACHE_ID; [DR021508]; *Innovation Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021688]; *Intelligent Technologies*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021824]; *InterDimensions Corp.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021884]; *Olympus America, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&SID=64&CID=0; [DR022112-22116]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18660; [DR022291]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18267; [DR022295-22296];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System

		Parthenon Development Corp., https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022379];
		DTP Direct, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022396];
		KH Software Development, http://www.digitalriver.com/dr/v2/...10007&PN=5&CID=0&SID=912&PID=20301; [DR022595];
		KnoWare, Inc., wysiwyg://178/https://www.digitalr…r/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022645];
		Lateral Technologies, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022714];
		LatticeWork Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=255&PID=11972; [DR022732-22733];
		Live Picture, http://www3.digitalriver.com/cg...alriver/livepicture/welcome.qry; [DR023055];
		Live Picture, http://www3.digitalriver.com/di... UserReference=D39AE4981060E05E; [DR023056-23057];
		http://www3.digitalriver.com/di...&item=LP!-5000-A1&Version=WIN95; [DR023058];
		http://www3.digitalriver.com/di...E05E&function=form&order=113646; [DR023059];
		WinSite, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023093; DR023095];
		DTP Direct, http://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023202];
		M.Casco Associates, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=;

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		[DR023236]; *Mach5 Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023264]; *Markus Friberg Data*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023404]; *Matchup Sports*, https://www.digitalriver.com/v2..c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023442]; *Medea International Limited*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023746]; *Mercury Interactive Corp*., https://www.digitalriver.com/v2...l/ec_Main.Entry11?SP=10039&PN=1; [DR023887-23888]; *Morpheus Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024342]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024360]; *M & R Technologies, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024369]; *MSI Software, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024389]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024415]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024512]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024532]; *NetFormation, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024601];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		NetResults Corporation, https://www.digitalriver.com/v2...l/ec_MAIN.Entry11?SP=10039&PN=1; [DR024649]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024675]; *New Perspective Software, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024693]; *New Vision Technologies, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024736]; *NiceTime Entertainment*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024844]; *Nordic Software*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024880]; *3DP Object Technology, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025125]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025142]; *A. J. Enterprises*, http://www.digitalriver.com/digitalriver/ajent/itemdetail.qry?prod=AJ-001; [DR025445-25446]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...BA5E73D1BF84D&function=search_prod; [DR025637]; *Apple Mountain Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025786]; *ARCaine Technology*, http://inv1.digitalriver.com/cgi-bin/uncgi/arcaine.htm; [DR025816]; *Artbeats Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=11495;

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		[DR025922]; *Atlanta Computer Resources*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025990]; *Author Direct Shareware*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026163]; *Best Effort Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026323]; *BuenSoft Co*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026516]; *1st Stop*, http://www.1stopsoft.com/how2buy.htm; [DR001141-1143]; *ScheduleMaker*, http://webarchive.org/web/20000303191644/www.craigsystems.com/; [DR026692]; [DR026693]; and [DR026694].
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	*1st Software*, http://www3.digitalriver.com/cgi-b...A1&_UserReference=88DE7EC7E9BB083A; [DR000087-88]; *Welcome to Bitstream, Inc*., http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstructed inserting referenced .gif files; [DR000028-31], [DR000032]; *DTP Direct*, http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112]; *Digital River Proposal Summary*, April 29, 1998, Figures 1, 2; [DR000066-72];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Adaptec, Inc., http://wwwdigitalriver.com/dr/v2/ec_main.entry?sid=6734&sp=10007/&cid=0; [DR002313]; *Nesbitt Software Corporation*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR012486-12487]; *Extensis PhotoTools*, http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305]; *PHD Computer Consultants Ltd*., https://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=237; [DR020584]; *Global Majic Software, Inc*., https://www.digitalriver.com/v20/plsql/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020931 *Incline Software, LC*, …/ec_MAIN.Entry?SP=10007&SID=30196&CID=0&CUR=840&DSP=0&PGRP=0&CACHE_ID; [DR021508]; *FileStream.com, Inc*., http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18660; [DR022291]; *FileStream.com, Inc*., http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18267; [DR022295-22296]; *ScheduleMaker*, http://webarchive.org/web/20000303191644/www.craigsystems.com/; [DR026692]; [DR026693]; and [DR026694].

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	*1st Software*, http://www3.digitalriver.com/cgi-b...A1&_UserReference=88DE7EC7E9BB083A; [DR000087-88]; *Welcome to Bitstream, Inc.*, http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstructed inserting referenced .gif files; [DR000028-31], [DR000032]; *2ask Software Store*, http://www3.digitalriver.com/cgi-b...C958CCE254093&function=search_prod; [DR000094]; *Buycomp.com*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?V1=10029&PN=1&xid=5452; [DR000104-111]; *DTP Direct*, http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112]; *Adaptec, Inc.*, http://wwwdigitalriver.com/dr/v2/ec_main.entry?sid=6734&sp=10007/&cid=0; [DR002313]; *Tympani Development*, http://www4.digitalriver.com/digitalriver/tympani/basket2.htm; [DR013400-13401; DR013404-13410]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR015415]; *Extensis PhotoTools*, http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305]; *PIM Sarl*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR016751; DR016754-16755]; *DisplayMate for Windows*, http://www3.digitalriver.com/cgi-bin/Tang...erence=2BD41D0878A00990&prod=STD-60001-A1; [DR018643];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System

		Cyber 411, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR020696];
		
		DTP Direct, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022396];
		
		Live Picture, http://www3.digitalriver.com/cg...alriver/livepicture/welcome.qry; [DR023055];
		
		Live Picture, http://www3.digitalriver.com/di..._UserReference=D39AE4981060E05E; [DR023056-23057];
		
		http://www3.digitalriver.com/di...&item=LP!-5000-A1&Version=WIN95; [DR023058];
		
		http://www3.digitalriver.com/di...E05E&function=form&order=113646; [DR023059];
		
		WinSite, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023093; DR023095];
		
		Medea International Limited, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023746];
		
		DTP Direct, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024360];
		
		DTP Direct, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024415];
		
		DTP Direct, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024675];
		
		DTP Direct, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025142];
		
		Cyber 411, http://www3.digitalriver.com/cgi-b...BA5E73D1BF84D&function=search_prod; [DR025637];
		
		1st Stop, http://www.1stopsoft.com/how2buy.htm; [DR001141-1143];
		
		ScheduleMaker, http://webarchive.org/web/20000303191644/www.craigsystems.com/;
		
		[DR026692];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		[DR026693]; and [DR026694].
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	*Welcome to Bitstream, Inc.*, http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstructed inserting referenced .gif files; [DR000028-31], [DR000032]; *see also Facsimile from Andrea Rizzo of Bitstream, Inc.*, dated January 24, 1997; [DR000080-86] (forwarding copies of individual Digital River maintained pages for Bitstream online ordering system); *Seattle Support Group*, http://www.digitalriver.com/digitalriver/Welcome.qry?type=1+id=1001; and http://www.digitalriver.com/digitalriver/insertitem.qry?function=insert&item=CDPLV1-TOTW; [DR000039-50] (Correspondence from Yasuo Noshiro, dated August 2, 1996); *1st Software*, http://www3.digitalriver.com/cgi-b...A1&_UserReference=88DE7EC7E9BB083A; [DR000087-88]; *Ronn Scott, Inc. Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10295; [DR000089]; *Arrow Publishing Software Store*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000090]; *DTP Direct Software Store*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000091]; *Integratech Software Software Store*, https://www.digitalriver.com/v2...c_Main.Entry9?SP=10039&PN=1&s1=; [DR000092]; *Innovation Multimedia Software Store*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000093]; *2ask Software Store*,

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		http://www3.digitalriver.com/cgi-b...C958CCE254093&function=search_prod; [DR000094]; *North Beach Labs Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&CID=0&SID=66; [DR000095]; *Welcome to Blue Byte Software, Inc. Ordering System*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/Blubyte/welcome.qry; [DR000096-97]; *Auto F/X Corporation Software Store*, http://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=29; [DR000098-100]; *SFS Software Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR000101]; *Sapient Software Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR000102-103]; *Buycomp.com*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?V1=10029&PN=1&xid=5452; [DR000104-111]; *DTP Direct*, http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112]; *Lucia Font Family*, http://www3digitalriver.com/cgi-bin/Tango3.cgi/digitalriver/yandy/setdetail.qry?set=Lucid2; [DR000113-115]; *Digital River Proposal Summary*, April 29, 1998, Figures 1, 2; [DR000066-72]; *MICROPROSE*; [DR001002-1003]; *Adaptec, Inc.*, http://wwwdigitalriver.com/dr/v2/ec_main.entry?sid=6734&sp=10007/&cid=0; [DR002313]; *Sapient Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR011752-11753];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		SFS Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR011948]; *Ositis Software*; https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR012171]; *Net Nanny*; https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR012399]; *Nesbitt Software Corporation*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR012486-12487]; *Sunbow International, Inc.*; http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19980; [DR012586]; *Tympani Development*, http://www4.digitalriver.com/digitalriver/tympani/basket2.htm; [DR013400-13401; DR013404-13410]; *Valley of Fire Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR013718-13720]; *Virtus Corporation*, http://www4.digitalriver/cgi-bin/Tango.cgi/digitalriver/virtus/welcome.qry; [DR013998-14003; DR014005-14007]; *Jan's Journeys*, http://www3.digitalriver/cgi-bin/Tango.cgi/esd/Webering/insertitem.qry?_UserReference= ; [DR014211]; *Wheeler Arts*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=748&SP=10007&CID=0; [DR014452-14453]; *Whirlwind Technologies*, http://www3.digitalriver.com/cgi-b...digitalriver/whirlwind/welcome.qry; [DR014553-14555]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR014746-14747];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Wilson Learning Corporation, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR014794]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR015415]; *Encore Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR015956]; *Extensis PhotoTools*, http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305]; *Peach Systems*, http://www/digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&v1=114/9; [DR016499]; *Peak Technology Ltd.*, http://www.digitalriver.com/v20/plsql/ec_Main.Entry?SP=10007&SID=15008&CID=0; [DR016550-16552]; *PIM Sarl*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR016751; DR016754-16755]; *PY Software, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=20061; [DR017056]; *RBC, Inc.*, https://www.digitalriver.com/v2…c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR017278]; *JP Software, Inc.*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/jpsoft/welcome.qry; [DR018176]; *Sonera Technologies*, http://www3.digitalriver.com/cgi-bin/Tango6.cgi/esd/sonera/welcome.qry; [DR018642]; *DisplayMate for Windows*,

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		http://www3.digitalriver.com/cgi-bin/Tang...erence=2BD41D0878A00990&prod=STD-60001-A1; [DR018643]; *Southern Software, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19092; [DR018660]; *Spectrum Unlimited*, http://www,digitalriver.com/dr/v2/ec_Main.Entry?SP=10007&SID=399&CID=0&CUR=840; [DR019032]; *Cat Computer Services (P) Ltd.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR019161]; *Cloud Dragon Designs*, http://www.digitalriver.com/v20...IN.Entry11?sp=10007&PN=1&xid=57; [DR019348]; *Cloud Dragon Designs*, http://www3.digitalriver.com/cgi-bin/Ta...ence=EECF0FF7BC4E7715&function=continue; [DR019354-19357]; *QRSMusic*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020394]; *QRSMusic*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/QRSMusic/welcome.qry?; [DR020395-20398]; *PHD Computer Consultants Ltd.*, https://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=237; [DR020584]; *ParaMind*, http://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020638]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR020696]; *Fixed It! Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020730];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Forward Design, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020807]; *Global Majic Software, Inc.*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/gms/welcome.qry; [DR020915-20916]; *Global Majic Software, Inc.*, https://www.digitalriver.com/v20/plsql/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020931]; *IDM Computer Services*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021425]; *Incline Software, LC*, …/ec_MAIN.Entry?SP=10007&SID=30196&CID=0&CUR=840&DSP=0&PGRP=0&CACHE_ID; [DR021508]; *Innovation Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021688]; *Intelligent Technologies*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021824]; *InterDimensions Corp.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021884]; *IrwinWare*, http://www.digitalri.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=546&PID=24147; [DR021996]; *Olympus America, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&SID=64&CID=0; [DR022112-22116]; *Omnibus Typografi*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=405&SP=10007&CID=0; [DR022212];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Open Window Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022232]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18660; [DR022291]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18267; [DR022295-22296]; *Parthenon Development Corp*., https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022379]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022396]; *KH Software Development,* http://www.digitalriver.com/dr/v2/...10007&PN=5&CID=0&SID=912&PID=20301; [DR022595]; *KnoWare, Inc*., wysiwyg://178/https://www.digitalr…r/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022645]; *KnoWare, Inc*., http://www3.digitalriver.com/cgi-b...c/itemdetail.qry?prod=KWI-60001-D1; [DR022671-22672]; *Lateral Technologies*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022714]; *LatticeWork Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=255&PID=11972; [DR022732-22733]; *Live Picture*, http://www3.digitalriver.com/cg...alriver/livepicture/welcome.qry; [DR023055];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System

		Live Picture, http://www3.digitalriver.com/di... UserReference=D39AE4981060E05E; [DR023056-23057];
		
		http://www3.digitalriver.com/di...&item=LP!-5000-A1&Version=WIN95; [DR023058];
		
		http://www3.digitalriver.com/di...E05E&function=form&order=113646; [DR023059];
		
		WinSite, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023093; DR023095];
		
		DTP Direct, http://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023202];
		
		M.Casco Associates, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023236];
		
		Mach5 Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023264];
		
		MacPEAK, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=37&PID=9749; [DR023328];
		
		Magic Software, http://www.digitalrive...ver/magic3/welcome.qry; [DR023359];
		
		Markus Friberg Data, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023404];
		
		Matchup Sports, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023442];
		
		Medea International Limited, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023746];
		KittyHawk Software, Inc., http://www3.digitalriver.com/cgi-b...wk/itemdetail.qry?prod=KH-60002-A1; [DR023884];
		
		Mercury Interactive Corp., https://www.digitalriver.com/v2...l/ec_Main.Entry11?SP=10039&PN=1; [DR023887-23888];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Morpheus Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024342]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024360]; *M & R Technologies, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024369]; *MSI Software, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024389]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024415]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024512]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024532]; *NetFormation, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024601]; *NetResults Corporation*, https://www.digitalriver.com/v2...l/ec_MAIN.Entry11?SP=10039&PN=1; [DR024649]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024675]; *New Perspective Software, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024693]; *New Vision Technologies, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024736]; *NiceTime Entertainment*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024844];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Nordic Software, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024880]; *3DP Object Technology, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025125]; *DTP Direct,* https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025142]; *A. J. Enterprises*, http://www.digitalriver.com/digitalriver/ajent/itemdetail.qry?prod=AJ-001; [DR025445-25446]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...BA5E73D1BF84D&function=search_prod; [DR025637]; *Apple Mountain Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025786]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tan...ion=insert&item=ARC-60012-A1&version=DC; [DR025814]; *ARCaine Technology*, http://inv1.digitalriver.com/cgi-bin/uncgi/arcaine.htm; [DR025816]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/arcaine/welcome.q; [DR025821-25823]; *Artbeats Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=11495; [DR025922]; *Atlanta Computer Resources*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025990]; *Up To Par*, http://www3.digitalriver.com/cgi-b...s/itemdetail.qry?prod=AUT-00001-A1; [DR026068]; *Author Direct Shareware*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=;

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		[DR026163]; *Best Effort Software*, http://www,digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=81&PID=17937; [DR026303]; *Best Effort Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=;; *BuenSoft Co*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026516]; *1st Stop*, http://www.1stopsoft.com/how2buy.htm; [DR001141-1143]; *ScheduleMaker*, http://webarchive.org/web/20000303191644/www.craigsystems.com/; [DR026692]; [DR026693]; and [DR026694].
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a	*Welcome to Bitstream, Inc*., http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstructed inserting referenced .gif files; [DR000028-31], [DR000032]; *see also Facsimile from Andrea Rizzo of Bitstream, Inc*., dated January 24, 1997; [DR000080-86] (forwarding copies of individual Digital River maintained pages for Bitstream online ordering system); *Seattle Support Group*, http://www.digitalriver.com/digitalriver/Welcome.qry?type=I+id=1001; and http://www.digitalriver.com/digitalriver/insertitem.qry?function=insert&item=CDPLV1-TOTW; [DR000039-50] (Correspondence from Yasuo Noshiro, dated August 2, 1996); *1st Software*, http://www3.digitalriver.com/cgi-b...A1&_UserReference=88DE7EC7E9BB083A; [DR000087-88]; *DTP Direct Software Store*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=;

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
	subset of the offerings in the catalog.	[DR000091]; *2ask Software Store*, http://www3.digitalriver.com/cgi-b...C958CCE254093&function=search_prod; [DR000094]; *Buycomp.com,* http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?V1=10029&PN=1&xid=5452; [DR000104-111]; *DTP Direct,* http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112]; *MICROPROSE*; [DR001002-1003]; *Adaptec, Inc*., http://wwwdigitalriver.com/dr/v2/ec_main.entry?sid=6734&sp=10007/&cid=0; [DR002313]; *Sapient Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR011752-11753]; *SFS Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR011948]; *Ositis Software*; https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR012171]; *Net Nanny*; https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR012399]; *Nesbitt Software Corporation*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR012486-12487]; *Sunbow International, Inc*.; http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19980; [DR012586]; *Valley of Fire Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR013718-13720]; *Wheeler Arts*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=748&SP=10007&CID=0;

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		[DR014452-14453]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR014746-14747]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR014794]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR015415]; *Encore Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR015956]; *Extensis PhotoTools*, http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305]; *Peach Systems*, http://www/digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&v1=114/9; [DR016499]; *Peak Technology Ltd*., http://www.digitalriver.com/v20/plsql/ec_Main.Entry?SP=10007&SID=15008&CID=0; [DR016550-16552]; *PIM Sarl*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR016751; DR016754-16755]; *PY Software, Inc*., http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=20061; [DR017056]; *RBC, Inc*.; https://www.digitalriver.com/v2…c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR017278]; *Southern Software, Inc*., http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19092;; [DR018660];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Spectrum Unlimited, http://www,digitalriver.com/dr/v2/ec_Main.Entry?SP=10007&SID=399&CID=0&CUR=840; [DR019032]; *Cat Computer Services (P) Ltd*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR019161]; *Cloud Dragon Designs*, http://www.digitalriver.com/v20...IN.Entry11?sp=10007&PN=1&xid=57; [DR019348]; *QRSMusic*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020394]; *QRSMusic*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/QRSMusic/welcome.qry?; [DR020395-20398]; *ParaMind*, http://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020638]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR020696]; *Fixed It! Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020730]; *Forward Design*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020807]; *Global Majic Software, Inc*., https://www.digitalriver.com/v20/plsql/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020931]; *Global Majic Software, Inc*., http://www.digitalriver.com/v20...IN.Entry?SID=129&SP=10007&CID=0; [DR020932-20933]; *IDM Computer Services*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021425];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Incline Software, LC, .../ec_MAIN.Entry?SP=10007&SID=30196&CID=0&CUR=840&DSP=0&PGRP=0&CACHE_ID; [DR021508]; *Innovation Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021688]; *Intelligent Technologies*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021824]; *InterDimensions Corp.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021884]; *Olympus America, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&SID=64&CID=0; [DR022112-22116]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18660; [DR022291]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18267; [DR022295-22296]; *Parthenon Development Corp.*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022379]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022396]; *KH Software Development*, http://www.digitalriver.com/dr/v2/...10007&PN=5&CID=0&SID=912&PID=20301; [DR022595]; *KnoWare, Inc.*, wysiwyg://178/https://www.digitalr…r/v2/ec_MAIN.Entry11?SP=10039&PN=1;

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System

		[DR022645];
		Lateral Technologies, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022714];
		LatticeWork Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=255&PID=11972; [DR022732-22733];
		Live Picture, http://www3.digitalriver.com/cg...alriver/livepicture/welcome.qry; [DR023055];
		Live Picture, http://www3.digitalriver.com/di..._UserReference=D39AE4981060E05E; [DR023056-23057];
		http://www3.digitalriver.com/di...&item=LP!-5000-A1&Version=WIN95; [DR023058];
		http://www3.digitalriver.com/di...E05E&function=form&order=113646; [DR023059];
		WinSite, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023093; DR023095];
		DTP Direct, http://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023202];
		M.Casco Associates, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023236];
		Mach5 Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023264];
		Markus Friberg Data, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023404];
		Matchup Sports, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023442];
		Medea International Limited, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023746];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Mercury Interactive Corp., https://www.digitalriver.com/v2...l/ec_Main.Entry11?SP=10039&PN=1; [DR023887-23888]; *Morpheus Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024342]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024360]; *M & R Technologies, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024369]; *MSI Software, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024389]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024415]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024512]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024532]; *NetFormation, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024601]; *NetResults Corporation*, https://www.digitalriver.com/v2...l/ec_MAIN.Entry11?SP=10039&PN=1; [DR024649]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024675]; *New Perspective Software, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024693];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		New Vision Technologies, Inc., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024736]; *NiceTime Entertainment*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024844]; *Nordic Software*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024880]; *3DP Object Technology, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025125]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025142]; *A. J. Enterprises*, http://www.digitalriver.com/digitalriver/ajent/itemdetail.qry?prod=AJ-001; [DR025445-25446]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...BA5E73D1BF84D&function=search_prod; [DR025637]; *Apple Mountain Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025786]; *ARCaine Technology*, http://inv1.digitalriver.com/cgi-bin/uncgi/arcaine.htm; [DR025816]; *Artbeats Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=11495; [DR025922]; *Atlanta Computer Resources*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025990]; *Author Direct Shareware*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026163]; *Best Effort Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=;

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		[DR026323]; *BuenSoft Co.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026516]; *1st Stop*, http://www.1stopsoft.com/how2buy.htm; [DR001141-1143]; *ScheduleMaker*, http://webarchive.org/web/20000303191644/www.craigsystems.com/; [DR026692]; [DR026693]; and [DR026694].
8	The method of claim 1 wherein the second web page is generated dynamically.	*Welcome to Bitstream, Inc.*, http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstructed inserting referenced .gif files; [DR000028-31], [DR000032]; *Seattle Support Group*, http://www.digitalriver.com/digitalriver/Welcome.qry?type=I+id=1001; and http://www.digitalriver.com/digitalriver/insertitem.qry?function=insert&item=CDPLV1-TOTW; [DR000039-50] (Correspondence from Yasuo Noshiro, dated August 2, 1996); *1st Software*, http://www3.digitalriver.com/cgi-b...A1&_UserReference=88DE7EC7E9BB083A; [DR000087-88]; *DTP Direct Software Store*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; 4 [DR000091]; *Integratech Software Software Store*, https://www.digitalriver.com/v2...c_Main.Entry9?SP=10039&PN=1&s1=; [DR000092]; *Innovation Multimedia Software Store*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000093];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		2ask Software Store, http://www3.digitalriver.com/cgi-b...C958CCE254093&function=search_prod; [DR000094]; *North Beach Labs Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&CID=0&SID=66; [DR000095]; *Welcome to Blue Byte Software, Inc. Ordering System*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/Blubyte/welcome.qry; [DR000096-97]; *Auto F/X Corporation Software Store*, http://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=29; [DR000098-100]; *SFS Software Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR000101]; *Sapient Software Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR000102-103]; *Buycomp.com*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?V1=10029&PN=1&xid=5452; [DR000104-111]; *DTP Direct*, http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112]; *Lucia Font Family*, http://www3digitalriver.com/cgi-bin/Tango3.cgi/digitalriver/yandy/setdetail.qry?set=Lucid2; [DR000113-115]; "In addition, Digital River will develop an online store featuring all of EA's products. Like the current EA Store, users can search by product category, key words, or platform. Product specials or new products can be featured on the front page of this store to provide for greater attention. For an example of how the EA Store might look, please refer to Figure 2." *Digital River Proposal Summary*, April 29, 1998, Figure 2; [DR000066-72]; *MICROPROSE*; [DR001002-1003];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		http://www.digitalriver.com/dr/v2/...IN.Entry10?SP=10023&PN=1&V1=101760; [DR001247]; *Adaptec, Inc.* http://wwwdigitalriver.com/dr/v2/ec_main.entry ?sid=6734&sp=10007/&cid=0; [DR002313]; *Ositis Software*; https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR012171]; *Net Nanny*; https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR012399]; *Sunbow International, Inc.*; http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19980; [DR012586]; *Virtus Corporation*, http://www4.digitalriver/cgi-bin/Tango.cgi/digitalriver/virtus/welcome.qry; [DR013998-14003; DR014005-14007]; *Wheeler Arts*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=748&SP=10007&CID=0; [DR014452-14453]; *Whirlwind Technologies*, http://www3.digitalriver.com/cgi-b...digitalriver/whirlwind/welcome.qry; [DR014553-14555]; *Wilson Learning Corporation*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR014794]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod [DR015415]; *Encore Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR015956]; *Extensis PhotoTools*, http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Peak Technology Ltd., http://www.digitalriver.com/v20/plsql/ec_Main.Entry?SP=10007&SID=15008&CID=0; [DR016550-16552]; *PIM Sarl*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR016751; DR016754-16755]; *RBC, Inc.*; https://www.digitalriver.com/v2…c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR017278]; *JP Software, Inc.*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/jpsoft/welcome.qry; [DR018176]; *Sonera Technologies*, http://www3.digitalriver.com/cgi-bin/Tango6.cgi/esd/sonera/welcome.qry; [DR018642]; *DisplayMate for Windows*, http://www3.digitalriver.com/cgi-bin/Tang...erence=2BD41D0878A00990&prod=STD-60001-A1; [DR018643]; *Southern Software, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19092; [DR018660]; *Spectrum Unlimited*, http://www,digitalriver.com/dr/v2/ec_Main.Entry?SP=10007&SID=399&CID=0&CUR=840; [DR019032]; *Cloud Dragon Designs*, http://www.digitalriver.com/v20...IN.Entry11?sp=10007&PN=1&xid=57; [DR019348]; *Cloud Dragon Designs*, http://www3.digitalriver.com/cgi-bin/Ta...ence=EECF0FF7BC4E7715&function=continue; [DR019354-19357]; *QRSMusic*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020394];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		QRSMusic, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/QRSMusic/welcome.qry?; [DR020395-20398]; *PHD Computer Consultants Ltd.*, https://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=237; [DR020584]; *ParaMind*, http://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020638]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR020696]; *Fixed It! Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020730]; *Forward Design*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020807]; *Global Majic Software, Inc.*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/gms/welcome.qry; [DR020915-20916]; *Global Majic Software, Inc.*, https://www.digitalriver.com/v20/plsql/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020931]; *Global Majic Software, Inc.*, http://www.digitalriver.com/v20...IN.Entry?SID=129&SP=10007&CID=0; [DR020932-20933]; *IDM Computer Services*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021425]; *Incline Software, LC*, .../ec_MAIN.Entry?SP=10007&SID=30196&CID=0&CUR=840&DSP=0&PGRP=0&CACHE_ID; [DR021508]; *Innovation Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=;

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		[DR021688]; *InterDimensions Corp.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021884]; *Olympus America, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&SID=64&CID=0; [DR022112-22116]; *Omnibus Typografi*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=405&SP=10007&CID=0; [DR022212]; *Open Window Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022232]; *Parthenon Development Corp.*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022379]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022396]; *KnoWare, Inc.*, wysiwyg://178/https://www.digitalr...r/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022645]; *LatticeWork Software*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=255&PID=11972; [DR022732-22733]; *Live Picture*, http://www3.digitalriver.com/cg...alriver/livepicture/welcome.qry; [DR023055]; *Live Picture*, http://www3.digitalriver.com/di..._UserReference=D39AE4981060E05E; [DR023056-23057]; http://www3.digitalriver.com/di...&item=LP!-5000-A1&Version=WIN95; [DR023058];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		WinSite, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023093; DR023095]; *DTP Direct*, http://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023202]; *M.Casco Associates*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023236]; *Mach5 Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023264]; *Magic Software*, http://www.digitalrive...ver/magic3/welcome.qry; [DR023359]; *Matchup Sports*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023442]; *Medea International Limited*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023746]; *KittyHawk Software, Inc.*, http://www3.digitalriver.com/cgi-b...wk/itemdetail.qry?prod=KH-60002-A1; [DR023884]; *M & R Technologies, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024369]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024415]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024512]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024532]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024675]; *New Perspective Software, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024693]; *New Vision Technologies, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=;

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		[DR024736]; *NiceTime Entertainment*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024844]; *Nordic Software*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024880]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025142]; *A. J. Enterprises*, http://www.digitalriver.com/digitalriver/ajent/itemdetail.qry?prod=AJ-001; [DR025445-25446]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...BA5E73D1BF84D&function=search_prod; [DR025637]; *Apple Mountain Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025786]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tan...ion=insert&item=ARC-60012-A1&version=DC; [DR025814]; *ARCaine Technology*, http://inv1.digitalriver.com/cgi-bin/uncgi/arcaine.htm; [DR025816]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/arcaine/welcome.q; [DR025821-25823]; *Up To Par*, http://www3.digitalriver.com/cgi-b...s/itemdetail.qry?prod=AUT-00001-A1; [DR026068]; *Author Direct Shareware*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026163]; *Best Effort Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026323];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		BuenSoft Co., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026516]; [DR026692]; [DR026693]; and [DR026694].
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	[DR026737-57] (Setting out commission rates for sale of products from software publishers through "3rd Party Hosts," DR, or DTP websites). *Cyberian Outpost, Inc. Dealer Agreement effective March 30, 1998* at 3-4 [DR059440- DR059447]. [DR006649-86].
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	"A key advantage to a partnership with Digital River is the high level of service offered by the company, including customization of Web presentation so that the SSS remains behind the scenes, rapid posting of new software and new versions, and of course timely reporting and payment on all software sales. Included in the reporting will be each customers [sic] name, address, phone number and user profile that will provide manufacturers and dealers with unprecedented marketing opportunities in the future." *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19970412100754/http://www.digitalriver.com/; [DR000001-2]. "We'll customize your Web presentation to make sure design continuity is maintained throughout the purchase, we'll post your new software and new versions as soon as they're available, and we'll deliver the reports and payments you need on a timely basis. (You get each customer's name, address, phone number, fax number, and email address, a profile that provide unprecedented marketing opportunities)." *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19971221024519/.digitalriver.com/Page3.html; [DR000003-4] (emphasis original).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		"The key advantage to a partnership with Digital River, Inc. is the high level of service offered by the company, including customization of Web presentation so that the S3 remains behind the scenes, rapid posting of new versions, and of course timely reporting and payment on all software sales." *Internet Commerce Services Proposal for Adobe,* July 25, 1996; [DR000005-6]. *Electronic Software Distribution Agreement* between Digital River and Auto F/X Corp. dated July 18, 1996; [DR000013-21] (detailing contractual obligations with respect to "Payment and Reports;" "End User Information;" and "Books and Records"). "Sales and customer information is accessed via the Digital River Reporting System, which is available to EA employees in their offices. Sales can be tracked on an immediate basis, and reports include: Sales by product Campaign tracking Summary reports by site, product, source and customer Banner click through Source and tracking codes Order detail." *Digital River Proposal Summary,* April 29, 1998; [DR000066-72]. Digital River has eliminated the need for the customer to enter their credit card and password data more than once. Less advanced e-commerce systems ask customers to enter this data more than once -- an approach that is more burdensome to the customer and offers more opportunity to the hacker. When the customer data is entered, including the credit card number, an external connection is established to validate the credit card number and authorize the transaction. It is important to ensure that your software sales site offers products to the consumer in an interesting, user-friendly manner. The design and flow of sites should facilitate the purchasing experience. For example, "buy" buttons should be positioned and sized to make them easy to find. A shopping basket which will hold multiple products will encourage multiple sales increasing average sale size. The online sales system should hold customer information so that the buyer does not have to complete several personal information and credit card screens during the purchase. These are just a few examples of how to optimize your site. While the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		look and feel of a particular site is in that client's control, the client also can benefit from Digital River's considerable experience in setting up online retail environments. *Digital River Information Kit* at 22 [DR004340].
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*Welcome to Bitstream, Inc.*, http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstructed inserting referenced .gif files; [DR000028-31], [DR000032]; *Seattle Support Group*, http://www.digitalriver.com/digitalriver/Welcome.qry?type=1+id=1001; and http://www.digitalriver.com/digitalriver/insertitem.qry?function=insert&item=CDPLV1-TOTW; [DR000039-50] (Correspondence from Yasuo Noshiro, dated August 2, 1996); *1st Software*, http://www3.digitalriver.com/cgi-b...A1& UserReference=88DE7EC7E9BB083A; [DR000087-88]; *DTP Direct Software Store*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000091]; *Integratech Software Software Store*, https://www.digitalriver.com/v2...c_Main.Entry9?SP=10039&PN=1&s1=; [DR000092]; *Innovation Multimedia Software Store*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000093]; *2ask Software Store*, http://www3.digitalriver.com/cgi-b...C958CCE254093&function=search_prod; [DR000094]; *North Beach Labs Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&CID=0&SID=66; [DR000095]; *Welcome to Blue Byte Software, Inc. Ordering System*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/Blubyte/welcome.qry; [DR000096-97];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		Auto F/X Corporation Software Store, http://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=29; [DR000098-100]; *SFS Software Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR000101]; *Sapient Software Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR000102-103]; *Buycomp.com*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?V1=10029&PN=1&xid=5452; [DR000104-111]; *DTP Direct*, http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112]; *Lucia Font Family*, http://www3digitalriver.com/cgi-bin/Tango3.cgi/digitalriver/yandy/setdetail.qry?set=Lucid2; [DR000113-115]; "In addition, Digital River will develop an online store featuring all of EA's products. Like the current EA Store, users can search by product category, key words, or platform. Product specials or new products can be featured on the front page of this store to provide for greater attention. For an example of how the EA Store might look, please refer to Figure 2." *Digital River Proposal Summary,* April 29, 1998, Figure 2; [DR000066-72]; *MICROPROSE*; [DR001002-1003]; http://www.digitalriver.com/dr/v2/...IN.Entry10?SP=10023&PN=1&V1=101760; [DR001247]; *Adaptec, Inc.* http://wwwdigitalriver.com/dr/v2/ec_main.entry ?sid=6734&sp=10007/&cid=0; [DR002313]; *Ositis Software*; https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR012171]; *Net Nanny*; https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR012399];

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		Sunbow International, Inc.;
		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19980; [DR012586];
		
		Virtus Corporation, http://www4.digitalriver/cgi-bin/Tango.cgi/digitalriver/virtus/welcome.qry; [DR013998-14003; DR014005-14007];
		
		Wheeler Arts, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=748&SP=10007&CID=0; [DR014452-14453];
		
		Whirlwind Technologies, http://www3.digitalriver.com/cgi-b...digitalriver/whirlwind/welcome.qry; [DR014553-14555];
		
		Wilson Learning Corporation, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR014794];
		
		Cyber 411, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR015415];
		
		Encore Multimedia, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR015956];
		
		Extensis PhotoTools,
		http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305];
		
		Peak Technology Ltd.,
		http://www.digitalriver.com/v20/plsql/ec_Main.Entry?SP=10007&SID=15008&CID=0; [DR016550-16552];
		
		PIM Sarl, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR016751; DR016754-16755];
		
		RBC, Inc.; https://www.digitalriver.com/v2…c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR017278];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System

		JP Software, Inc., http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/jpsoft/welcome.qry; [DR018176];
		
		Sonera Technologies, http://www3.digitalriver.com/cgi-bin/Tango6.cgi/esd/sonera/welcome.qry; [DR018642];
		
		DisplayMate for Windows,
		http://www3.digitalriver.com/cgi-bin/Tang...erence=2BD41D0878A00990&prod=STD-60001-A1; [DR018643];
		
		Southern Software, Inc.,
		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19092; [DR018660];
		
		Spectrum Unlimited,
		http://www,digitalriver.com/dr/v2/ec_Main.Entry?SP=10007&SID=399&CID=0&CUR=840; [DR019032];
		
		Cloud Dragon Designs, http://www.digitalriver.com/v20...IN.Entry11?sp=10007&PN=1&xid=57; [DR019348];
		
		Cloud Dragon Designs,
		http://www3.digitalriver.com/cgi-bin/Ta...ence=EECF0FF7BC4E7715&function=continue; [DR019354-19357];
		
		QRSMusic, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020394];
		
		QRSMusic, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/QRSMusic/welcome.qry?; [DR020395-20398];
		
		PHD Computer Consultants Ltd.,
		https://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=237; [DR020584];
		
		ParaMind, http://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020638];

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		Cyber 411, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR020696]; *Fixed It! Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020730]; *Forward Design*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020807]; *Global Majic Software, Inc.*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/gms/welcome.qry; [DR020915-20916]; *Global Majic Software, Inc.*, https://www.digitalriver.com/v20/plsql/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020931]; *Global Majic Software, Inc.*, http://www.digitalriver.com/v20...IN.Entry?SID=129&SP=10007&CID=0; [DR020932-20933]; *IDM Computer Services*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021425]; *Incline Software, LC*, …/ec_MAIN.Entry?SP=10007&SID=30196&CID=0&CUR=840&DSP=0&PGRP=0&CACHE_ID; [DR021508]; *Innovation Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021688]; *InterDimensions Corp.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021884]; *Olympus America, Inc.*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&SID=64&CID=0; [DR022112-22116]; *Omnibus Typografi*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=405&SP=10007&CID=0;

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		[DR022212];
		
		Open Window Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022232];
		
		Parthenon Development Corp., https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022379];
		
		DTP Direct, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022396];
		
		KnoWare, Inc., wysiwyg://178/https://www.digitalr…r/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022645];
		
		LatticeWork Software,
		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=255&PID=11972; [DR022732-22733];
		
		Live Picture, http://www3.digitalriver.com/cg...alriver/livepicture/welcome.qry; [DR023055];
		
		Live Picture, http://www3.digitalriver.com/di..._UserReference=D39AE4981060E05E; [DR023056-23057];
		
		http://www3.digitalriver.com/di...&item=LP!-5000-A1&Version=WIN95; [DR023058];
		
		WinSite, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023093; DR023095];
		
		DTP Direct, http://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023202];
		
		M.Casco Associates, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023236];
		
		Mach5 Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023264];

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		Magic Software, http://www.digitalrive...ver/magic3/welcome.qry; [DR023359]; *Matchup Sports*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023442]; *Medea International Limited*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023746]; *KittyHawk Software, Inc*., http://www3.digitalriver.com/cgi-b...wk/itemdetail.qry?prod=KH-60002-A1; [DR023884]; *M & R Technologies, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024369]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024415]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024512]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024532]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024675]; *New Perspective Software, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024693]; *New Vision Technologies, Inc*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024736]; *NiceTime Entertainment*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024844]; *Nordic Software*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024880]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025142];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		A. J. Enterprises, http://www.digitalriver.com/digitalriver/ajent/itemdetail.qry?prod=AJ-001; [DR025445-25446]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...BA5E73D1BF84D&function=search_prod; [DR025637]; *Apple Mountain Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025786]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tan...ion=insert&item=ARC-60012-A1&version=DC; [DR025814]; *ARCaine Technology*, http://inv1.digitalriver.com/cgi-bin/uncgi/arcaine.htm; [DR025816]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/arcaine/welcome.q; [DR025821-25823]; *Up To Par*, http://www3.digitalriver.com/cgi-b...s/itemdetail.qry?prod=AUT-00001-A1; [DR026068]; *Author Direct Shareware*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; 7 [DR026163]; *Best Effort Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026323]; *BuenSoft Co*., https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026516]; [DR026692]; [DR026693]; and [DR026694].
12	The method of claim 1, wherein the link activated by	[DR026771-DR033425] (source code stored on DR database).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
	the web browser is stored in a database associated with the source page.	
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	[DR026771-DR033425] (source code for shopping cart and checkout function). [DR036047-104] (reflecting consummated sales from individuals who used the DR SSS shopping cart to purchase products). It is important to ensure that your software sales site offers products to the consumer in an interesting, user-friendly manner. The design and flow of sites should facilitate the purchasing experience. For example, "buy" buttons should be positioned and sized to make them easy to find. A shopping basket which will hold multiple products will encourage multiple sales increasing average sale size. The online sales system should hold customer information so that the buyer does not have to complete several personal information and credit card screens during the purchase. These are just a few examples of how to optimize your site. While the look and feel of a particular site is in that client's control, the client also can benefit from Digital River's considerable experience in setting up online retail environments. *Digital River Information Kit* at 22 [DR004340].
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	[DR026771-DR033425] (source code for shopping cart and checkout function). [DR036047-104] (reflecting consummated sales from individuals who used the DR SSS shopping cart to purchase products).
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer	"A key advantage to a partnership with Digital River is the high level of service offered by the company, including customization of Web presentation so that the SSS remains behind the scenes, rapid posting of new software and new versions, and of course timely reporting and payment on all software sales. Included in the reporting will be each customers [sic] name, address, phone number and user profile that will provide manufacturers and dealers with unprecedented marketing opportunities in the future." *Digital River –*

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	user to the merchant associated with the activated link.	*Secure Encrypted Software Distribution,* http://web.archive.org/web/19970412100754/http://www.digitalriver.com/; [DR000001-2]. "We'll customize your Web presentation to make sure design continuity is maintained throughout the purchase, we'll post your new software and new versions as soon as they're available, and we'll deliver the reports and payments you need on a timely basis. (You get each customer's name, address, phone number, fax number, and email address, a profile that provide unprecedented marketing opportunities)." *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19971221024519/.digitalriver.com/Page3.html; [DR000003-4] (emphasis original). "The key advantage to a partnership with Digital River, Inc. is the high level of service offered by the company, including customization of Web presentation so that the S3 remains behind the scenes, rapid posting of new versions, and of course timely reporting and payment on all software sales." *Internet Commerce Services Proposal for Adobe,* July 25, 1996; [DR000005-6]. *Electronic Software Distribution Agreement* between Digital River and Auto F/X Corp. dated July 18, 1996; [DR000013-21] (detailing contractual obligations with respect to "Payment and Reports;" "End User Information;" and "Books and Records"). "Sales and customer information is accessed via the Digital River Reporting System, which is available to EA employees in their offices. Sales can be tracked on an immediate basis, and reports include: Sales by product Campaign tracking Summary reports by site, product, source and customer Banner click through Source and tracking codes Order detail." *Digital River Proposal Summary,* April 29, 1998; [DR000066-72]. Digital River has eliminated the need for the customer to enter their credit card and password data more than once. Less advanced e-commerce systems ask customers to enter this data more than once -- an approach that is more burdensome to the customer and offers more

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		opportunity to the hacker. When the customer data is entered, including the credit card number, an external connection is established to validate the credit card number and authorize the transaction. It is important to ensure that your software sales site offers products to the consumer in an interesting, user-friendly manner. The design and flow of sites should facilitate the purchasing experience. For example, "buy" buttons should be positioned and sized to make them easy to find. A shopping basket which will hold multiple products will encourage multiple sales increasing average sale size. The online sales system should hold customer information so that the buyer does not have to complete several personal information and credit card screens during the purchase. These are just a few examples of how to optimize your site. While the look and feel of a particular site is in that client's control, the client also can benefit from Digital River's considerable experience in setting up online retail environments. *Digital River Information Kit* at 22 [DR004340].
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra*.
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	Digital River has eliminated the need for the customer to enter their credit card and password data more than once. Less advanced e-commerce systems ask customers to enter this data more than once -- an approach that is more burdensome to the customer and offers more opportunity to the hacker. When the customer data is entered, including the credit card number, an external connection is established to validate the credit card number and authorize the transaction. It is important to ensure that your software sales site offers products to the consumer in an interesting, user-friendly manner. The design and flow of sites should facilitate the purchasing experience. For example, "buy" buttons should be positioned and sized to make them easy to find. A shopping basket which will hold multiple products will encourage multiple sales

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		increasing average sale size. The online sales system should hold customer information so that the buyer does not have to complete several personal information and credit card screens during the purchase. These are just a few examples of how to optimize your site. While the look and feel of a particular site is in that client's control, the client also can benefit from Digital River's considerable experience in setting up online retail environments. *Digital River Information Kit* at 22 [DR004340].
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	"**Extending your selling environment** Better yet, the entire transaction takes place in the selling environment you've created, surrounded by the look and feel of your identity, with your products presented the way you want them presented, with no competition. Your customers simply hit the purchase icon at your site and the whole process unfolds smoothly. There's no sensation of being suddenly hustled off to another location. Your customers won't end up at some foreign-looking page where they have to hunt to find your product. You can even prompt customers to purchase additional products, for instance printed manuals or more of your software. And it all takes place during a single purchase process. Digital River has created seamless continuity." *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19971221024519/.digitalriver.com/Page3.html; [DR000003-4] (emphasis original). "Digital River's Secure Sales System (SSS) brings together software manufacturers and dealers enabling them to sell and deliver product via the Internet. This service will provide all digital delivery, security, collections and reporting of the sale of software. Throughout this process it will appear to the consumer as if the transaction is being processed by the manufacturer or dealer while Digital River SSS is handling the whole transaction 'behind the scenes'." [sic] *Digital River – Secure Encrypted Software Distribution,* http://web.archive.org/web/19970412100754/http://www.digitalriver.com/; [DR000001-2]. "Digital River will develop and manage an online store for IMSI for the purpose of offering MasterClips products for sale on the www.masterclips.com web site. These products will include: up to 300,000 MasterClips images and clipart, 40,000 images under license from Corel and assorted applications from the IMSI selection of software. This store will be designed to mirror the look and feel of www.masterclips.com and will contain a complete commerce system for online product delivery." *IMSI/Digital River Online Store for Masterclips Products Software Superstore linked to www.masterclips.com,* dated December 16,

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		1997; [DR000063-64]. "[W]e provide an electronic commerce solution for your website. We emulate the look and feel of your site so an end-user can come in and pay for product via a secure credit card solution and download the product directly." *Letter from Digital River to Kathy Haynes of Traveling Software,* dated September 11, 1997; [DR000065]. "**Consistent Look and Feel between Store and Home Site** Customers will have the ability to click a 'buy button' from any number of places within www.ea.com and will be linked to a complete store, or a specific product detail page. All of the Commerce pages will carry the branding, look and feel of www.ea.com. This consistent look and feel is essential to a smooth customer experience, and will promote high conversion ratios. For every product page within www.ea.com, Digital River can provide EA with specific URL's for direct product links. This will allow users to shop direction on www.ea.com, and have the ability to purchase product at any time. The page presented will have a single produce listed, and will be linked directly to the shopping basket. For an example of such a product page, please refer to Fignre 2 [sic]. In addition, Digital River will develop an online store featuring all of EA's products. Like the current EA Store, users can search by product category, key words, or platform. Product specials or new products can be featured on the front page of this store to provide for greater attention. For an example of how the EA Store might look, please refer to Fignre 2." *Digital River Proposal Summary,* April 29, 1998; [DR000066-72] (emphasis original). "Using its CNS platform, the Company creates Web stores for its clients that replicate the look and feel of such client's own Web sites. End-users browse for products and make purchases online, and, once purchases are made, the Company delivers the products directly to the end-users, primarily through ESD." BancAmerica, *Digital River, Inc., Initiating Coverage of Emerging Software E-Business Franchise,* September 8, 1998; [DR000073-79]. As explained above, the specific elements contained on the e-commerce supported web pages corresponding to the captured "look and feel description" of the host (client) website vary based upon the look and feel of the host website. Such elements utilized in the Digital River SSS process include: top

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
		banners utilizing host logos and/or names, and hypertext links to host webpages; left side navigation buttons; footers utilizing host logos and/or names, hypertext links to host webpages, and copyright notices; color schemes consistent with those utilized in host websites, including background, font, and graphics color schemes; and page layout consistent with host website. Examples of the use of such elements include: *Welcome to Bitstream, Inc.*, http://web.archive.org/web/19961019044742/ww2.digitalriver.com/bit/index.html; and as reconstrncted inserting referenced .gif files; [DR000028-31], [DR000032]; *see also Facsimile from Andrea Rizzo of Bitstream, Inc.*, dated January 24, 1997; [DR000080-86] (forwarding copies of individual Digital River maintained pages for Bitstream online ordering system); *Seattle Support Group*, http://www.digitalriver.com/digitalriver/Welcome.qry?type=I+id=1001; and http://www.digitalriver.com/digitalriver/insertitem.qry?function=insert&item=CDPLV1-TOTW; [DR000039-50] (Correspondence from Yasuo Noshiro, dated Augnst 2, 1996); *1st Software*, http://www3.digitalriver.com/cgi-b...A1&_UserReference=88DE7EC7E9BB083A; [DR000087-88]; *Ronn Scott, Inc. Software Store*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10295; [DR000089]; *Arrow Publishing Software Store*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000090]; *DTP Direct Software Store*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000091]; *Integratech Software Software Store*, https://www.digitalriver.com/v2...c_Main.Entry9?SP=10039&PN=1&s1=; [DR000092]; *Innovation Multimedia Software Store*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR000093];

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		2ask Software Store,
		http://www3.digitalriver.com/cgi-b...C958CCE254093&function=search_prod; [DR000094];
		
		North Beach Labs Software Store,
		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&CID=0&SID=66; [DR000095];
		
		Welcome to Blue Byte Software, Inc. Ordering System,
		http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/Blubyte/welcome.qry; [DR000096-97];
		
		Auto F/X Corporation Software Store,
		http://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=29; [DR000098-100];
		
		SFS Software Software Store,
		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR000101];
		
		Sapient Software Software Store, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR000102-103];
		
		Buycomp.com, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?V1=10029&PN=1&xid=5452; [DR000104-111];
		
		DTP Direct, http://www4.digitalriver.com/cgi-bin/Tango2.cgi/dealer/dtpdirect/home/qry?1d=1020&level=; [DR000112];
		
		Lucia Font Family, http://www3digitalriver.com/cgi-bin/Tango3.cgi/digitalriver/yandy/setdetail.qry?set=Lucid2; [DR000113-115;
		
		Digital River Proposal Summary, April 29, 1998, Figures 1, 2; [DR000066-72];
		
		MICROPROSE; [DR001002-1003];
		
		http://www.digitalriver.com/dr/v2/...IN.Entry10?SP=10023&PN=1&V1=101760; [DR001247];
		
		Adaptec, Inc., http://wwwdigitalriver.com/dr/v2/ec_main.entry?sid=6734&sp=10007/&cid=0; [DR002313];

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		Sapient Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR011752-11753];
		
		SFS Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=10952; [DR011948];
		
		Ositis Software; https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR012171];
		
		Net Nanny; https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR012399];
		
		Nesbitt Software Corporation, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR012486-12487];
		
		Sunbow International, Inc.;
		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19980; [DR012586];
		
		Tympani Development, http://www4.digitalriver.com/digitalriver/tympani/basket2.htm; [DR013400-13401; DR013404-13410];
		
		Valley of Fire Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR013718-13720];
		
		Virtus Corporation, http://www4.digitalriver/cgi-bin/Tango.cgi/digitalriver/virtus/welcome.qry; [DR013998-14003; DR014005-14007];
		
		Jan's Journeys,
		http://www3.digitalriver/cgi-bin/Tango.cgi/esd/Webering/insertitem.qry?_UserReference=; [DR014211];
		
		Wheeler Arts, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=748&SP=10007&CID=0; [DR014452-14453];
		
		Whirlwind Technologies, http://www3.digitalriver.com/cgi-b...digitalriver/whirlwind/welcome.qry; [DR014553-14555];

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		Wilson Learning Corporation,
		https://www.digitalriver.com/dr/v2/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR014746-14747];
		
		Wilson Learning Corporation, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR014794];
		
		Cyber 411, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR015415];
		
		Encore Multimedia, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR015956];
		
		Extensis PhotoTools, http://www3.digitalriver.com/cgi-b...8FAA5AEAB59B66B0&detail=phototools; [DR016261-16268; DR016300-16305];
		
		Peach Systems, http://www/digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&v1=114/9; [DR016499];
		
		Peak Technology Ltd.,
		http://www.digitalriver.com/v20/plsql/ec_Main.Entry?SP=10007&SID=15008&CID=0; [DR016550-16552];
		
		PIM Sarl, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR016751; DR016754-16755];
		
		PY Software, Inc., http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=20061; [DR017056];
		
		RBC, Inc.; https://www.digitalriver.com/v2…c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR017278];
		
		JP Software, Inc., http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/jpsoft/welcome.qry; [DR018176];
		
		Sonera Technologies, http://www3.digitalriver.com/cgi-bin/Tango6.cgi/esd/sonera/welcome.qry;

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		[DR018642];
		
		DisplayMate for Windows,
		http://www3.digitalriver.com/cgi-bin/Tang...erence=2BD41D0878A00990&prod=STD-60001-A1; [DR018643];
		
		Southern Software, Inc.,
		http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=19092; [DR018660];
		
		Spectrum Unlimited,
		http://www.digitalriver.com/dr/v2/ec_Main.Entry?SP=10007&SID=399&CID=0&CUR=840; [DR019032];
		
		Cat Computer Services (P) Ltd.,
		https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR019161];
		
		Cloud Dragon Designs, http://www.digitalriver.com/v20...IN.Entry11?sp=10007&PN=1&xid=57; [DR019348];
		
		Cloud Dragon Designs,
		http://www3.digitalriver.com/cgi-bin/Ta...ence=EECF0FF7BC4E7715&function=continue; [DR019354-19357];
		
		QRSMusic, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020394];
		
		QRSMusic, http://www3.digitalriver.com/cgi-bin/Tango.cgi/esd/QRSMusic/welcome.qry?; [DR020395-20398];
		
		PHD Computer Consultants Ltd.,
		https://www.digitalriver.com/dr/v2/ec_main.entry?sp=10007&cid=0&sid=237; [DR020584];
		
		ParaMind, http://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020638];
		
		Cyber 411, http://www3.digitalriver.com/cgi-b...2AC16A60DCD29&function=search_prod; [DR020696];

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		Fixed It! Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020730]; *Forward Design*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020807]; *Global Majic Software, Inc.*, http://www3.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/gms/welcome.qry; [DR020915-20916]; *Global Majic Software, Inc.*, https://www.digitalriver.com/v20/plsql/ec_MAIN.Entry9?SP=10039&PN=1&s1=; [DR020931] *Global Majic Software, Inc.*, http://www.digitalriver.com/v20...IN.Entry?SID=129&SP=10007&CID=0; [DR020932-20933]; *IDM Computer Services*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021425]; *Incline Software, LC*, .../ec_MAIN.Entry?SP=10007&SID=30196&CID=0&CUR=840&DSP=0&PGRP=0&CACHE_ID; [DR021508]; *Innovation Multimedia*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021688]; *Intelligent Technologies*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021824]; *InterDimensions Corp.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR021884]; *IrwinWare*, http://www.digitalri.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=546&PID=24147; [DR021996];

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		Olympus America, Inc., http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SP=10007&SID=64&CID=0; [DR022112-22116]; *Omnibus Typografi*, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry?SID=405&SP=10007&CID=0; [DR022212]; *Open Window Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022232]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18660; [DR022291]; *FileStream.com, Inc.*, http://www.digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=124&PID=18267; [DR022295-22296]; *Parthenon Development Corp.*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022379]; *DTP Direct*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022396]; *KH Software Development*, http://www.digitalriver.com/dr/v2/...10007&PN=5&CID=0&SID=912&PID=20301; [DR022595]; *KnoWare, Inc.*, wysiwyg://178/https://www.digitalr…r/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR022645]; *KnoWare, Inc.*, http://www3.digitalriver.com/cgi-b...c/itemdetail.qry?prod=KWI-60001-D1; [DR022671-22672];

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System

		Lateral Technologies, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR022714];
		LatticeWork Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=255&PID=11972; [DR022732-22733];
		Live Picture, http://www3.digitalriver.com/cg...alriver/livepicture/welcome.qry; [DR023055];
		Live Picture, http://www3.digitalriver.com/di..._UserReference=D39AE4981060E05E; [DR023056-23057];
		http://www3.digitalriver.com/di...&item=LP!-5000-A1&Version=WIN95; [DR023058];
		http://www3.digitalriver.com/di...E05E&function=form&order=113646; [DR023059];
		WinSite, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023093; DR023095];
		DTP Direct, http://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023202];
		M.Casco Associates, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023236];
		Mach5 Software, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023264];
		MacPEAK, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=37&PID=9749; [DR023328];
		Magic Software, http://www.digitalrive...ver/magic3/welcome.qry; [DR023359];
		Markus Friberg Data, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023404];

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		Matchup Sports, https://www.digitalriver.com/v2..c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR023442]; *Medea International Limited*, http://www.digitalriver.com/dr/v2/ec_MAIN.Master; [DR023746]; *KittyHawk Software, Inc.*, http://www3.digitalriver.com/cgi-b...wk/itemdetail.qry?prod=KH-60002-A1; [DR023884]; *Mercury Interactive Corp.*, https://www.digitalriver.com/v2...l/ec_Main.Entry11?SP=10039&PN=1; [DR023887-23888]; *Morpheus Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024342]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024360]; *M & R Technologies, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024369]; *MSI Software, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024389]; *DTP Direct*, https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024415]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024512]; *Mythic Images*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024532]; *NetFormation, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024601]; *NetResults Corporation*, https://www.digitalriver.com/v2...l/ec_MAIN.Entry11?SP=10039&PN=1; [DR024649];

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		DTP Direct, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024675]; *New Perspective Software, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024693]; *New Vision Technologies, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024736]; *NiceTime Entertainment*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR024844]; *Nordic Software*, https://www.digitalriver.com/dr/v2/ec_MAIN.Entry11?SP=10039&PN=1; [DR024880]; *3DP Object Technology, Inc.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025125]; *DTP Direct,* https://www.digitalriver.com/dr...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025142]; *A. J. Enterprises*, http://www.digitalriver.com/digitalriver/ajent/itemdetail.qry?prod=AJ-001; [DR025445-25446]; *Cyber 411*, http://www3.digitalriver.com/cgi-b...BA5E73D1BF84D&function=search_prod; [DR025637]; *Apple Mountain Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025786]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tan...ion=insert&item=ARC-60012-A1&version=DC; [DR025814]; *ARCaine Technology*, http://inv1.digitalriver.com/cgi-bin/uncgi/arcaine.htm; [DR025816]; *ARCaine Technology*, http://www4.digitalriver.com/cgi-bin/Tango.cgi/digitalriver/arcaine/welcome.q; [DR025821-25823];

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		Artbeats Software, http://www.digitalriver.com/dr/v2/ec_MAIN.Entry10?PN=1&SP=10023&V1=11495; [DR025922]; *Atlanta Computer Resources*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR025990]; *Up To Par*, http://www3.digitalriver.com/cgi-b...s/itemdetail.qry?prod=AUT-00001-A1; [DR026068]; *Author Direct Shareware*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026163]; *Best Effort Software*, http://www,digitalriv.../ec_MAIN.Entry17c?SP=10007&PN=5&CID=0&SID=81&PID=17937; [DR026303]; *Best Effort Software*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026323]; *BuenSoft Co.*, https://www.digitalriver.com/v2...c_MAIN.Entry9?SP=10039&PN=1&s1=; [DR026516]; *1st Stop*, http://www.1stopsoft.com/how2buy.htm; [DR001141-1143]; *ScheduleMaker*, http://webarchive.org/web/20000303191644/www.craigsystems.com/; [DR026692]; [DR026693]; and [DR026694]. [DR034615-16] (data associated with source page Digital Frontiers stored on DR server). [DR034606-07] (data associated with source page Bitstream stored on DR server).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* 1(a)-1(b), *supra.*
19(b)	(b) a computer server at the outsource provider, which	*See* 1(a)-1(c), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
	computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	
20	A computer-readable memory adapted for use by an outsource provider in	*See* 1, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
	serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the	

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
	computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of	*See* 7, *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
	the offerings in the catalog.	
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra*.
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory	*See* 13-16, *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Digital River Secure Sales System
	is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra*.

Comparison of the U.S. Patent No. 7,818,399 and U.S. Patent No. 6,141,666 “Method and system for customizing marketing services on networks communicating with hypertext tagging convention”[1]

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants’ products in Plaintiff’s Infringement Contentions served April 15, 2011, U.S. Patent No. 6,141,666 anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants’ Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 (“the ‘666 patent”)
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	“Referring now to FIG. 1C there is shown PC Flowers & Gifts home page Web site 100 providing Internet consumers a variety of floral and gift purchasing opportunities.” Column 6, lines 55-58. “Although the present invention can be used in many applications which can utilize customization marketing tools unique to client/server communications across variety of communication network strnctures, the present invention is described in its application to PC Flowers & Gifts, an Internet site providing floral and gift services through Web site pages which are dynamically customized to the requirements of other Internet sites referring clients, e.g., consumers, to the PC Flowers & Gifts Web site pages.” Column 5, lines 3-11. “The automatic tracking of the participating or referring Internet sites is crncial to transparently customizing Web site pages to take advantage of brand name recognition and customer loyalty.” Column 5, lines 42-45. *Also see* column 9, lines 5-51; FIGs. 11A-20.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page	The ‘666 Patent teaches • a link (e.g., label 21B1 in FIG. 21B; and label 11B3 in FIG. 11B) • first web pages, recognizing as the source page the one of the first web pages (e.g., http://homearts.com; FIGs. 21A-B; and http://pathfinder.com/...; FIGs. 11A-B) • the second website page (e.g., http://homearts.pcflowers.com/; FIG. 21C; and http://pathfinder.pcflowers.com/; FIG. 11C) “Each private label web site has on each page a custom icon that hyperlinks back to

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[1] Unless noted, all citations in this chart are to U.S. Patent No. 6,141,666 “Method and system for customizing marketing services on networks communicating with hypertext tagging conventions” by William J. Tobin (filed Jan. 21, 1997, issued Oct. 31, 2000). *[DFNT0000001-0000053]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 (“the ‘666 patent”)
	owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	the private label partner’s web site, a navigation bar that hyperlinks to areas within the private label partner’s web site and maintains the look and feel of the partner’s web site.” Column 12, lines 47-51. “A hypertext link 11A1 provides a jump to a Web site page 11B0, shown in FIG. 11B, which provides shopping opportunities to the client. The Web site page 11B0 contains hypertext links, 11B2, 11B3, and 11B4, which provide jumps to Web site pages, related to the PC Flowers and Gifts marketing program for floral and gift services, which are co-branded with the participating Web site partner, in this instance Pathfinder. “ “The Web site page 21A0 includes a hypertext link 21A1 to a Homearts’ Web site page 21B1 shown in FIG. 21B, which offers marketing services to clients. The hypertext link 21B1 provides a jump to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10, but which have been customized in accordance with the marketing partner’s private label requirements.” Column 9, lines 56-62; FIGs. 21A-C. “The PC Flowers & Gifts marketing program comprising the floral and gift Web site pages are dynamically customized in accordance with the participating Internet site’s requirements which may be co-branded, private label or, a program of labeling unique to the participating Web site. More specifically, the PC Flowers & Gifts Web site pages are customized in both a graphic and a content format to take advantage of the consumers [sic] familiarity with the participating Internet site’s position in the marketplace, the consumer’s trnst in the participating Internet site’s established brand name, or the consumer’s existing relationship with the participating Web site.” Column 5, lines 18-29. “[I]f a consumer were to visit one of the private label floral and gift services home page of the Internet site “Homearts”, all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 (“the ‘666 patent”)
		the Homearts brand name.” Column 5, lines 55-60. “FIGS. 21C-30 show private label Web site pages that correlate to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10. However, the Web site pages of FIGS. 21C-30 are customized with only the marketing partner’s brand, Pathfinder [sic]. Referring to the Web site page 2100, shown in FIG. 21C, the client’s familiarity with the marketing partner’s brand is reinforced through the use of a fully customized header 2116, “Homearts Flowers & Gifts”, and a fully customized footer 2117, “Homearts”. The fully customized header 1116 and footer 2117 are also used on Web site pages 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900 and 3000.” Column 9, line 63 - column 6, line 7; FIGs. 21C-30. “Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts’ preferences. Such a private label customization of the Web site pages takes advantage of the client’s existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts.” Column 10, lines 8-26; FIG. 21C. Also see column 9, lines 5-51; FIGs. 11A-20. The owner of the first web page is the owner of a participating Web site (e.g., Homearts in FIGs. 21A and 21B or Pathfinder in FIG. 11A and 11B), the outsource provider is PC Flower & Gifts, and the selected merchant is the vendor providing the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 (“the ‘666 patent”)
		flowers or other products (e.g., FTD (label 301), Nature’s Bloom, and Flowers Direct From Grower in FIGs. 3, 13, and 23; Hickory Farms (labels 405 and 406), Russ (label 407) in FIGs. 4, 14, and 24; FTD in FIGs. 5, 15, and 25; Nature’s Bloom in FIGs. 9, 19A and 29A).
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	“The system also includes a database responsive to the server which dynamically retrieves data stored on the system, in accordance with stored requirements which define the customization for the particular class of clients, to provide customized content on HTML documents. Lastly, the system includes a processing subsystem for manipulating the server and database software tools in response to the HTML tagged requests from the client.” Column 2, line 54 through column 3, line 2. “Preferably, the database software operating in conjunction with the server software tool is a commercially available database tool, known as RDBMS, which is produced by Oracle software company. It is understood that other commercially available web server and database software tools may be employed as described herein within the scope and intent of the present invention.” Column 3, lines 9-14. “The database format of hypertext links enables development of "private label" and "co-branded" floral and gift services that can be customized for many of the major Web sites on the Internet and online services. For, example, if a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name. As another example, all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Pathfinder Web site, are partially customized in graphic and content format to reflect both the PC Flowers & Gifts and Pathfinder brand names. This unique database format of server files accessed through the hypertext links permits a participating Internet site to host floral and gift services so as to take advantage of the consumer's familiarity with the participating Internet site.” Column 5, line 51 though column 6, line 3.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		"Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C.
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	*See also* 3-6, *infra.* The web browser is served a second page with information associated with the commerce object associated with the link that has been activated. For example, link 21B1 on the host website shown in FIG. 21B links to the website shown in FIG. 21C. The website shown in FIG. 21C includes the selected commerce object (e.g., an electronic catalog of links to product categories (e.g., links 103-106)) sold at the HomeArts Flower & Gifts website). "The system employs a server software tool for presenting HTML tagged information which is customized according to a particular class to which a client, accessing the system, belongs to." Column 2, lines 59-62. "The PC Flowers & Gifts marketing program comprising the floral and gift Web site pages are dynamically customized in accordance with the participating Internet site's requirements which may be co-branded, private label or, a program of labeling unique

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		to the participating Web site. More specifically, the PC Flowers & Gifts Web site pages are customized in both a graphic and a content format to take advantage of the consumers [sic] familiarity with the participating Internet site's position in the marketplace, the consumer's trust in the participating Internet site's established brand name, or the consumer's existing relationship with the participating Web site." Column 5, lines 18-29. "[I]f a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name." Column 5, lines 55-60. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C. *Also see* column 9, lines 5-51; FIGs. 11A-20.
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source	"Each private label web site has on each page a custom icon that hyperlinks back to the private label partner's web site, a navigation bar that hyperlinks to areas within the private label partner's web site and maintains the look and feel of the partner's web

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
	page.	site." Column 12, lines 47-51. *Also see* column 9, lines 5-51; FIGs. 11A-20.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	"Each private label web site has on each page a custom icon that hyperlinks back to the private label partner's web site, a navigation bar that hyperlinks to areas within the private label partner's web site and maintains the look and feel of the partner's web site." Column 12, lines 47-51. "The Web site page 21A0 includes a hypertext link 21A1 to a Homearts' Web site page 21B1 shown in FIG. 21B, which offers marketing services to clients. The hypertext link 21B1 provides a jump to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10, but which have been customized in accordance with the marketing partner's private label requirements." Column 9, lines 56-62; FIGs. 21A-C. "The PC Flowers & Gifts marketing program comprising the floral and gift Web site pages are dynamically customized in accordance with the participating Internet site's requirements which may be co-branded, private label or, a program of labeling unique to the participating Web site. More specifically, the PC Flowers & Gifts Web site pages are customized in both a graphic and a content format to take advantage of the consumers [sic] familiarity with the participating Internet site's position in the marketplace, the consumer's trust in the participating Internet site's established brand name, or the consumer's existing relationship with the participating Web site." Column 5, lines 18-29. "[I]f a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name." Column 5, lines 55-60. "FIGS. 21C-30 show private label Web site pages that correlate to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10. However, the Web site pages of FIGS. 21C-30 are customized with only the marketing partner's brand, Pathfinder [sic].

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		Referring to the Web site page 2100, shown in FIG. 21C, the client's familiarity with the marketing partner's brand is reinforced through the use of a fully customized header 2116, "Homearts Flowers & Gifts", and a fully customized footer 2117, "Homearts". The fully customized header 1116 and footer 2117 are also used on Web site pages 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900 and 3000." Column 9, line 63 - column 6, line 7; FIGs. 21C-30. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C. *Also see* column 9, lines 5-51; FIGs. 11A-20.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	"Referring to the Web site page 2100, shown in FIG. 21C, the client's familiarity with the marketing partner's brand is reinforced through the use of a fully customized header 2116, "Homearts Flowers & Gifts", and a fully customized footer 2117, "Homearts". The fully customized header 1116 and footer 2117 are also used on Web site pages 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900 and 3000." Column 9, line 67 - column 6, line 7; FIGs. 21C-30. "Each private label web site has on each page a custom icon that hyperlinks back to the private label partner's web site, a navigation bar that hyperlinks to areas within the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		private label partner's web site and maintains the look and feel of the partner's web site." Column 12, lines 47-51. "The Web site page 21A0 includes a hypertext link 21A1 to a Homearts' Web site page 21B1 shown in FIG. 21B, which offers marketing services to clients. The hypertext link 21B1 provides a jump to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10, but which have been customized in accordance with the marketing partner's private label requirements. FIGS. 21C-30 show private label Web site pages that correlate to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10." Column 9, lines 56-65; FIGs. 21A-C. "The PC Flowers & Gifts marketing program comprising the floral and gift Web site pages are dynamically customized in accordance with the participating Internet site's requirements which may be co-branded, private label or, a program of labeling unique to the participating Web site. More specifically, the PC Flowers & Gifts Web site pages are customized in both a graphic and a content format to take advantage of the consumers [sic] familiarity with the participating Internet site's position in the marketplace, the consumer's trnst in the participating Internet site's established brand name, or the consumer's existing relationship with the participating Web site." Column 5, lines 18-29. "[I]f a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name." Column 5, lines 55-60. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site

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		pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C. *Also see* column 9, lines 5-51; FIGs. 11A-20.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	FIG. 21C illustrates logos 2116, 2117 on the composite web page 2100 (http://homearts.pcflowers.com; FIG. 21B) that are also shown on a web page 21A0 (FIG. 21A) of the first website (http://homearts.com; FIGs. 21A-B). "Referring to the Web site page 2100, shown in FIG. 21C, the client's familiarity with the marketing partner's brand is reinforced through the use of a fully customized header 2116, "Homearts Flowers & Gifts", and a fully customized footer 2117, "Homearts". The fully customized header 1116 and footer 2117 are also used on Web site pages 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900 and 3000." Column 9, line 67 - column 6, line 7; FIGs. 21C-30. *Also see* column 9, lines 5-51; FIGs. 11A-20.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	"Referring now to FIG. 4 there is shown a PC Flowers & Gifts Web site page 400, denoted as "shop by category", accessible via a hypertext link 109 from the home page Web site 100 depicted in FIG. 1. The distinguishing content on this Web site page 400 is that the category image map 401 includes hypertext links 402-408 which provide jumps to Web site pages indicated, respectively, as "flowers", "plants", "balloons", "Hickory Farms gourmet foods", "bears by Russ", and "greeting cards on-line." Column 7, lines 55-63. "FIGS. 21C-30 show private label Web site pages that correlate to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10. However, the Web site pages of FIGS.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		21C-30 are customized with only the marketing partner's brand …." Column 9, lines 63-67. "[I]f a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name." Column 5, lines 55-60. "This unique database format of server files accessed through the hypertext links permits a participating Internet site to host floral and gift services so as to take advantage of the consumer's familiarity with the participating Internet site." Column 5, line 66 – column 6, line 3. *Also see* column 9, lines 5-51; FIGs. 11A-20 and FIG. 24
8	The method of claim 1 wherein the second web page is generated dynamically.	"The PC Flowers & Gifts marketing program comprising the floral and gift Web site pages are dynamically customized in accordance with the participating Internet site's requirements which may be co-branded, private label or, a program of labeling unique to the participating Web site. More specifically, the PC Flowers & Gifts Web site pages are customized in both a graphic and a content format to take advantage of the consumers [sic] familiarity with the participating Internet site's position in the marketplace, the consumer's trnst in the participating Internet site's established brand name, or the consumer's existing relationship with the participating Web site." Column 5, lines 18-29. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences.." Column 10, lines 8-18; FIG. 21C.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		"The system presents HTML documents which contain hypertext links, presented as single links or image maps, e.g., grouped links, which are anchored to data that is dynamically retrieved by the database means in response to the particular class to which the client belongs to, e.g., based on the identity of the network site referring the client to the system's server. Such a dynamic retrieval of data facilitates dynamic configuration of content on all anchored HTML documents so as to meet specific requirements of a marketing participant. … The present invention employs a dynamic tokening scheme whereby a token, indicative of the identity of the referring network site, is passed between successive HTML documents so as to track the necessary customization requirements for all HTML documents presented to the client. This dynamic tokening scheme relies on software executables including tokening.cgi and track.cgi, and markup tags such as PORT#, URL, and IMAGEMAP." Column 3, lines 23-44. *Also see* column 10, line 27 through column 12, line 21; FIGs. 31-33.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	"Although the present invention can be used in many applications which can utilize customization marketing tools unique to client/server communications across variety of communication network strnctures, the present invention is described in its application to PC Flowers & Gifts, an Internet site providing floral and gift services through Web site pages which are dynamically customized to the requirements of other Internet sites referring clients, e.g., consumers, to the PC Flowers & Gifts Web site pages." Column 5, lines 3-11. "The automatic tracking of the participating or referring Internet sites is crncial to transparently customizing Web site pages to take advantage of brand name recoguition and customer loyalty." Column 5, lines 42-45. "Referring now to FIG. 4 there is shown a PC Flowers & Gifts Web site page 400, denoted as "shop by category", accessible via a hypertext link 109 from the home page Web site 100 depicted in FIG. 1. The distinguishing content on this Web site page 400 is that the category image map 401 includes hypertext links 402-408 which provide jumps to Web site pages indicated, respectively, as "flowers", "plants", "balloons",

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		"Hickory Farms gourmet foods", "bears by Russ", and "greeting cards on-line." Column 7, lines 55-63. "FIGS. 21C-30 show private label Web site pages that correlate to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10. However, the Web site pages of FIGS. 21C-30 are customized with only the marketing partner's brand …." Column 9, lines 63-67. *Also see* column 9, lines 5-51; FIGs. 11A-20.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	"Each private label web site has on each page a custom icon that hyperlinks back to the private label partner's web site, a navigation bar that hyperlinks to areas within the private label partner's web site and maintains the look and feel of the partner's web site." Column 12, lines 47-51. "The Web site page 21A0 includes a hypertext link 21A1 to a Homearts' Web site page 21B1 shown in FIG. 21B, which offers marketing services to clients. The hypertext link 21B1 provides a jump to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10, but which have been customized in accordance with the marketing partner's private label requirements." Column 9, lines 56-62; FIGs. 21A-C. "The PC Flowers & Gifts marketing program comprising the floral and gift Web site pages are dynamically customized in accordance with the participating Internet site's requirements which may be co-branded, private label or, a program of labeling unique to the participating Web site. More specifically, the PC Flowers & Gifts Web site pages are customized in both a graphic and a content format to take advantage of the consumers [sic] familiarity with the participating Internet site's position in the marketplace, the consumer's trnst in the participating Internet site's established brand name, or the consumer's existing relationship with the participating Web site." Column 5, lines 18-29.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		"[I]f a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name." Column 5, lines 55-60. "FIGS. 21C-30 show private label Web site pages that correlate to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10. However, the Web site pages of FIGS. 21C-30 are customized with only the marketing partner's brand, Pathfinder [sic]. Referring to the Web site page 2100, shown in FIG. 21C, the client's familiarity with the marketing partner's brand is reinforced through the use of a fully customized header 2116, "Homearts Flowers & Gifts", and a fully customized footer 2117, "Homearts". The fully customized header 1116 and footer 2117 are also used on Web site pages 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900 and 3000." Column 9, line 63 - column 6, line 7; FIGs. 21C-30. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C. *Also see* column 9, lines 5-51; FIGs. 11A-20.
12	The method of claim 1, wherein the link activated by the web browser is stored in a	

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
	database associated with the source page.	
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	"The check-out area of the site has the following components: Order page; Order error page; Order confirmation page. Order Page The order is arrived at from any one of the product detail pages. The site ID, product ID, and any product options are encoded in the hypertext access. The order page prompts the user for sender, recipient, personalization, and payment information." Column 13, lines 8-20. "Upon completing the form, the user submits the information, and is transported to either the order confirmation page or the order error page, in the event of missing or improperly formatted data." Column 13, lines 33-36. "As shown by the schematic 3400 of FIG. 34, vendors FTP to the server to perform the following tasks: … 2) Download encrypted files containing orders 3402." Column 15, lines 46-57; FIG. 34.
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	"The check-out area of the site has the following components: Order page; Order error page; Order confirmation page. Order Page

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		The order is arrived at from any one of the product detail pages. The site ID, product ID, and any product options are encoded in the hypertext access. The order page prompts the user for sender, recipient, personalization, and payment information." Column 13, lines 8-20. "Upon completing the form, the user submits the information, and is transported to either the order confirmation page or the order error page, in the event of missing or improperly formatted data." Column 13, lines 33-36. "As shown by the schematic 3400 of FIG. 34, vendors FTP to the server to perform the following tasks: … 2) Download encrypted files containing orders 3402." Column 15, lines 46-57; FIG. 34.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra*.
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	"The system also includes a database responsive to the server which dynamically retrieves data stored on the system, in accordance with stored requirements which define the customization for the particular class of clients, to provide customized content on HTML documents. Lastly, the system includes a processing subsystem for manipulating the server and database software tools in response to the HTML tagged requests from the client." Column 2, line 54 through column 3, line 2.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		"Preferably, the database software operating in conjunction with the server software tool is a commercially available database tool, known as RDBMS, which is produced by Oracle software company. It is understood that other commercially available web server and database software tools may be employed as described herein within the scope and intent of the present invention." Column 3, lines 9-14. "The database format of hypertext links enables development of "private label" and "co-branded" floral and gift services that can be customized for many of the major Web sites on the Internet and online services. For, example, if a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name. As another example, all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Pathfinder Web site, are partially customized in graphic and content format to reflect both the PC Flowers & Gifts and Pathfinder brand names. This unique database format of server files accessed through the hypertext links permits a participating Internet site to host floral and gift services so as to take advantage of the consumer's familiarity with the participating Internet site." Column 5, line 51 though column 6, line 3. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the

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		links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.* "Referring now to FIG. 1C there is shown PC Flowers & Gifts home page Web site 100 providing Internet consumers a variety of floral and gift purchasing opportunities." Column 6, lines 55-58. "Although the present invention can be used in many applications which can utilize customization marketing tools unique to client/server communications across variety of communication network stnctures, the present invention is described in its application to PC Flowers & Gifts, an Internet site providing floral and gift services through Web site pages which are dynamically customized to the requirements of other Internet sites referring clients, e.g., consumers, to the PC Flowers & Gifts Web site pages." Column 5, lines 3-11. "The automatic tracking of the participating or referring Internet sites is crncial to transparently customizing Web site pages to take advantage of brand name recognition and customer loyalty." Column 5, lines 42-45. *Also see* column 9, lines 5-51; FIGs. 11A-20.
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated	The '666 Patent teaches: • an active link (e.g., label 21B1 in FIG. 21B; and label 11B3 in FIG. 11B); and • first web pages (e.g., http://homearts.com; FIGs. 21A-B; and http://pathfinder.com/...; FIGs. 11A-B). "Each private label web site has on each page a custom icon that hyperlinks back to the private label partner's web site, a navigation bar that hyperlinks to areas within the private label partner's web site and maintains the look and feel of the partner's web

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	with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	site." Column 12, lines 47-51. "A hypertext link 11A1 provides a jump to a Web site page 11B0, shown in FIG. 11B, which provides shopping opportunities to the client. The Web site page 11B0 contains hypertext links, 11B2, 11B3, and 11B4, which provide jumps to Web site pages, related to the PC Flowers and Gifts marketing program for floral and gift services, which are co-branded with the participating Web site partner, in this instance Pathfinder. " "The Web site page 21A0 includes a hypertext link 21A1 to a Homearts' Web site page 21B1 shown in FIG. 21B, which offers marketing services to clients. The hypertext link 21B1 provides a jump to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10, but which have been customized in accordance with the marketing partner's private label requirements." Column 9, lines 56-62; FIGs. 21A-C. "The PC Flowers & Gifts marketing program comprising the floral and gift Web site pages are dynamically customized in accordance with the participating Internet site's requirements which may be co-branded, private label or, a program of labeling unique to the participating Web site. More specifically, the PC Flowers & Gifts Web site pages are customized in both a graphic and a content format to take advantage of the consumers [sic] familiarity with the participating Internet site's position in the marketplace, the consumer's trnst in the participating Internet site's established brand name, or the consumer's existing relationship with the participating Web site." Column 5, lines 18-29. "[I]f a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name." Column 5, lines 55-60. "FIGS. 21C-30 show private label Web site pages that correlate to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10. However, the Web site pages of FIGS.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		21C-30 are customized with only the marketing partner's brand, Pathfinder [sic]. Referring to the Web site page 2100, shown in FIG. 21C, the client's familiarity with the marketing partner's brand is reinforced through the use of a fully customized header 2116, "Homearts Flowers & Gifts", and a fully customized footer 2117, "Homearts". The fully customized header 1116 and footer 2117 are also used on Web site pages 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900 and 3000." Column 9, line 63 - column 6, line 7; FIGs. 21C-30. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C. *Also see* column 9, lines 5-51; FIGs. 11A-20. The owner of the first web page is the owner of a participating Web site (e.g., Homearts in FIGs. 21A and 21B or Pathfinder in FIG. 11A and 11B), the outsource provider is PC Flower & Gifts, and the selected merchant is the vendor providing the flowers and other products (e.g., FTD (label 301), Nature's Bloom, and Flowers Direct From Grower in FIGs. 3, 13, and 23; Hickory Farms (labels 405 and 406), Russ (label 407) in FIGs. 4, 14, and 24; FTD in FIGs. 5, 15, and 25; Nature's Bloom in FIGs. 9, 19A and 29A).

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19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	The visitor computer is served an e commerce supported page with content based on the commerce object associated with the provided link. For example, link 21B1 on the host website shown in FIG. 21B links to the website shown in FIG. 21C. The website shown in FIG. 21C includes the selected commerce object (e.g., an electronic catalog of links to product categories (e.g., links 103-106)) sold at the HomeArts Flower & Gifts website). "The system also includes a database responsive to the server which dynamically retrieves data stored on the system, in accordance with stored requirements which define the customization for the particular class of clients, to provide customized content on HTML documents. Lastly, the system includes a processing subsystem for manipulating the server and database software tools in response to the HTML tagged requests from the client." Column 2, line 54 through column 3, line 2. "Preferably, the database software operating in conjunction with the server software tool is a commercially available database tool, known as RDBMS, which is produced by Oracle software company. It is understood that other commercially available web server and database software tools may be employed as described herein within the scope and intent of the present invention." Column 3, lines 9-14. "The database format of hypertext links enables development of "private label" and "co-branded" floral and gift services that can be customized for many of the major Web sites on the Internet and online services. For, example, if a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name. As another example, all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Pathfinder Web site, are partially customized in graphic and content format to reflect both the PC Flowers & Gifts and Pathfinder brand names. This unique database format of server files

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		accessed through the hypertext links permits a participating Internet site to host floral and gift services so as to take advantage of the consumer's familiarity with the participating Internet site." Column 5, line 51 though column 6, line 3. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C.
	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first	The '666 Patent teaches: • an active link (e.g., label 21B1 in FIG. 21B; and label 11B3 in FIG. 11B); and • first web pages (e.g., http://homearts.com; FIGs. 21A-B; and http://pathfinder.com/...; FIGs. 11A-B). "Each private label web site has on each page a custom icon that hyperlinks back to the private label partner's web site, a navigation bar that hyperlinks to areas within the private label partner's web site and maintains the look and feel of the partner's web site." Column 12, lines 47-51. "A hypertext link 11A1 provides a jump to a Web site page 11B0, shown in FIG. 11B, which provides shopping opportunities to the client. The Web site page 11B0 contains hypertext links, 11B2, 11B3, and 11B4, which provide jumps to Web site pages, related to the PC Flowers and Gifts marketing program for floral and gift services,

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	web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	which are co-branded with the participating Web site partner, in this instance Pathfinder. " "The Web site page 21A0 includes a hypertext link 21A1 to a Homearts' Web site page 21B1 shown in FIG. 21B, which offers marketing services to clients. The hypertext link 21B1 provides a jump to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10, but which have been customized in accordance with the marketing partner's private label requirements." Column 9, lines 56-62; FIGs. 21A-C. "The PC Flowers & Gifts marketing program comprising the floral and gift Web site pages are dynamically customized in accordance with the participating Internet site's requirements which may be co-branded, private label or, a program of labeling unique to the participating Web site. More specifically, the PC Flowers & Gifts Web site pages are customized in both a graphic and a content format to take advantage of the consumers [sic] familiarity with the participating Internet site's position in the marketplace, the consumer's trnst in the participating Internet site's established brand name, or the consumer's existing relationship with the participating Web site." Column 5, lines 18-29. "[I]f a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name." Column 5, lines 55-60. "FIGS. 21C-30 show private label Web site pages that correlate to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10. However, the Web site pages of FIGS. 21C-30 are customized with only the marketing partner's brand, Pathfinder [sic]. Referring to the Web site page 2100, shown in FIG. 21C, the client's familiarity with the marketing partner's brand is reinforced through the use of a fully customized header 2116, "Homearts Flowers & Gifts", and a fully customized footer 2117, "Homearts". The fully customized header 1116 and footer 2117 are also used on Web site pages 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900 and 3000." Column 9, line

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		63 - column 6, line 7; FIGs. 21C-30. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C. *Also see* column 9, lines 5-51; FIGs. 11A-20. The '666 Patent teaches automatically computer-generating and transmitting to the web browser a second web page that includes information associated with the commerce object associated with the link that has been activated. For example, link 21B1 on the host website shown in FIG. 21B links to the website shown in FIG. 21C. The website shown in FIG. 21C includes the selected commerce object (e.g., an electronic catalog of links to product categories (e.g., links 103-106)) sold at the HomeArts Flower & Gifts website). The owner of the first web page is the owner of a participating Web site (e.g., Homearts in FIGs. 21A and 21B or Pathfinder in FIG. 11A and 11B), the outsource provider is PC Flower & Gifts, and the selected merchant is the vendor providing the flowers and other products (e.g., FTD (label 301), Nature's Bloom, and Flowers Direct From Grower in FIGs. 3, 13, and 23; Hickory Farms (labels 405 and 406), Russ

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		(label 407) in FIGs. 4, 14, and 24; FTD in FIGs. 5, 15, and 25; Nature's Bloom in FIGs. 9, 19A and 29A). "The system also includes a database responsive to the server which dynamically retrieves data stored on the system, in accordance with stored requirements which define the customization for the particular class of clients, to provide customized content on HTML documents. Lastly, the system includes a processing subsystem for manipulating the server and database software tools in response to the HTML tagged requests from the client." Column 2, line 54 through column 3, line 2. "Preferably, the database software operating in conjunction with the server software tool is a commercially available database tool, known as RDBMS, which is produced by Oracle software company. It is understood that other commercially available web server and database software tools may be employed as described herein within the scope and intent of the present invention." Column 3, lines 9-14. "The database format of hypertext links enables development of "private label" and "co-branded" floral and gift services that can be customized for many of the major Web sites on the Internet and online services. For, example, if a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name. As another example, all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Pathfinder Web site, are partially customized in graphic and content format to reflect both the PC Flowers & Gifts and Pathfinder brand names. This unique database format of server files accessed through the hypertext links permits a participating Internet site to host floral and gift services so as to take advantage of the consumer's familiarity with the participating Internet site." Column 5, line 51 though column 6, line 3. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C.
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra.* FIG. 24 illustrates a web page, customized with Home Arts' look and feel, where a visitor can search for products and services. The products and services are organized into product categories. "Referring now to FIG. 4 there is shown a PC Flowers & Gifts Web site page 400, denoted as "shop by category", accessible via a hypertext link 109 from the home page Web site 100 depicted in FIG. 1. The distinguishing content on this Web site page 400 is that the category image map 401 includes hypertext links 402-408 which provide jumps to Web site pages indicated, respectively, as "flowers", "plants", "balloons", "Hickory Farms gourmet foods", "bears by Russ", and "greeting cards on-line." Column 7, lines 55-63. "FIGS. 21C-30 show private label Web site pages that correlate to the PC Flowers & Gifts Web site pages depicted in FIGS. 1C-10. However, the Web site pages of FIGS. 21C-30 are customized with only the marketing partner's brand ...." Column 9, lines

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		63-67. "[I]f a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name." Column 5, lines 55-60. "This unique database format of server files accessed through the hypertext links permits a participating Internet site to host floral and gift services so as to take advantage of the consumer's familiarity with the participating Internet site." Column 5, line 66 – column 6, line 3. *Also see* column 9, lines 5-51; FIGs. 11A-20.
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra.*
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider	*See* 13-16, *supra.*

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	to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra.* "The system also includes a database responsive to the server which dynamically retrieves data stored on the system, in accordance with stored requirements which define the customization for the particular class of clients, to provide customized content on HTML documents. Lastly, the system includes a processing subsystem for manipulating the server and database software tools in response to the HTML tagged requests from the client." Column 2, line 54 through column 3, line 2. "Preferably, the database software operating in conjunction with the server software tool is a commercially available database tool, known as RDBMS, which is produced by Oracle software company. It is understood that other commercially available web server and database software tools may be employed as described herein within the scope and intent of the present invention." Column 3, lines 9-14. "The database format of hypertext links enables development of "private label" and "co-branded" floral and gift services that can be customized for many of the major Web sites on the Internet and online services. For, example, if a consumer were to visit one of the private label floral and gift services home page of the Internet site "Homearts", all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Homearts Web site, are fully customized in graphic and content format to reflect only the Homearts brand name. As another example, all the graphics and product categories on each of the PC Flowers & Gifts Web site pages, available through a hypertext link from a Pathfinder Web site, are partially customized in graphic and content format to reflect both the PC Flowers & Gifts and Pathfinder brand names. This unique database format of server files

Comparison of the U.S. Patent No. 7,818,399 and U.S. Patent No. 6,141,666 "Method and system for customizing marketing services on networks communicating with hypertext tagging conventions

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,141,666 ("the '666 patent")
		accessed through the hypertext links permits a participating Internet site to host floral and gift services so as to take advantage of the consumer's familiarity with the participating Internet site." Column 5, line 51 though column 6, line 3. "Still referring to FIG. 21C, like the home page image map 101 discussed above, the home page image map 2101 herein is a grouping of the hypertext links 108-112, wherein the sever files for the linked Web site pages are dynamically created to reflect preferences of the marketing partner, which in this instance is a private label customizing for Homearts. Accordingly, all the server Web site pages accessed through the home page image map 2101 are anchored to PC Flowers & Gifts Web site pages that are dynamically created with fully customized graphic and text features according to Homearts' preferences. Such a private label customization of the Web site pages takes advantage of the client's existing relationship and familiarity with the marketing partner, Homearts. In addition, the hypertext link grouping 2103 retains the links 102-107 of the PC Flowers & Gifts Web site pages, however, like the home page image map 2101, the hypertext link grouping 2103 provides jumps to PC Flowers and Web site pages that are fully customized with the private label Homearts." Column 10, lines 8-26; FIG. 21C.

Comparison of the U.S. Patent No. 7,818,399 and U.S. Patent No. 6,128,655 "Distribution mechanism for filtering, formatting and reuse of web based content"[1]

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, U.S. Patent No. 6,128,655 anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	The '655 patent discloses a method of an outsource provider serving web pages offering commercial opportunities.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated;	The '655 patent discloses automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated. "These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser." Column 4, lines 57-63. "Note also that navigational features 315 and 317 native to the hosting server have been added to the page: A background border 319 giving the hosting web site a distinctive look and feel has also been added." Column 6, lines 42-45. "A representative system in which the present invention is implemented is illustrated in FIG. 1. A plurality of Internet client machines 10 are connectable to a computer network Internet Service Provider (ISP) 12 via a network such as a dialup telephone network 14. As is well known, the dialup telephone network usually has a given, limited number of connections 16a-16n. ISP 12 interfaces the client machines 10 to the remainder of the network 18, which includes the hosting server 19 and a plurality of web content provider server machines 20. A client machine typically includes a suite of known Internet tools, including a Web browser 13, to access the servers of the

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[1] Unless noted, all citations in this chart are to U.S. Patent No. 6,128,655 "Distribution mechanism for filtering, formatting and reuse of web based content" by Fields, Hassinger and Hurley (filed Jul. 10, 1998, issued Oct. 3, 2000). [DFNDT0000054-0000076]

Comparison of the U.S. Patent No. 6,901,393 and U.S. Patent No. 6,128,655

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		network and thus obtain certain services. These services include one-to-one messaging (e-mail), one-to-many messaging (bulletin board), on-line chat, file transfer and browsing. Various known Internet protocols are used for these services. Thus, for example, browsing is effected using the Hypertext Transfer Protocol (HTTP), which provides users access to multimedia files using Hypertext Markup Langnage (HTML). The collection of servers that use HTTP comprise the World Wide Web, which is the Internet's multimedia information retrieval system. As shown in FIG. 2, the invention is a method and system for extracting Web-based content, especially, but not limited to, Web-based news articles, from content provider or source Web sites for use by the hosting or "pass-through" Web site. These articles typically are revenue-generating content for the publisher by carrying advertising banners above and/or below the article text. Therefore, the publishers must benefit from the arrangement provided by the hosting site to be interested in licensing their content for a low or no fee. As explained below, the web content provider maintains his ad revenue as the number of "hits" on the advertisements are maintained in a transparent manner. As the articles are also posted at the hosting site, ad revenues can actually increase since the ad impressions are being solicited from two sites rather than one." Column 3, line 55 through Column 4, line 24. *See* File History for 10/461,997, Office Action, dated September 29, 2004.
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	The '655 patent discloses that each of the first web pages belongs to one of a plurality of web page owners. "If an agreed on set of tags used by the web content provider and hosting sites, 100% of Web documents are parseable. Thus, no intelligence is required from the pass through mechanism and no programming or scripting is required of the user. Special tags are embedded in the source of the targeted document(s) which identify the content areas. This allows a `default` filter to be used that requires no customization beyond supplying it with the target URL. These special tags could take the form of HTML comments. In the future, the tags can be formalized as an XML Document Type Definition. It is envisioned that HTML editing programs used by the content provider can add the tags as the web content is created automatically.

Comparison of the U.S. Patent No. 6,901,393 and U.S. Patent No. 6,128,655

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		The speed of document retrieval is an issue with the invention, since in essence a single user's request for a document is transformed into two separate requests, with all the potential for bottlenecks that any Web transaction has. Caching can provide a partial solution, the title area, article body and other desired content can be cached locally on the hosting site, so that it can be delivered to the user more quickly. Ad source needs to be retrieved from the source site on a per-user basis to preserve the ad accounting process of many web sites. In addition, many ad systems serve ads based on the visitor's browser or other information." Col. 12:30-54. "As shown in FIG. 2, the invention is a method and system for extracting Web-based content, especially, but not limited to, Web-based news articles, from content provider or source Web sites for use by the hosting or "pass-through" Web site. These articles typically are revenue-generating content for the publisher by carrying advertising banners above and/or below the article text. Therefore, the publishers must benefit from the arrangement provided by the hosting site to be interested in licensing their content for a low or no fee. As explained below, the web content provider maintains his ad revenue as the number of "hits" on the advertisements are maintained in a transparent manner. As the articles are also posted at the hosting site, ad revenues can actually increase since the ad impressions are being solicited from two sites rather than one. During configuration, the pass through publisher 101 at the hosting site 103 is provided with the URLs 105 for the desired content provider web servers 107 and a set of filters 109 for the content publisher's document templates 111. For ease in illustration, a single client 113 and a single web content server 107 are depicted. However, the reader should understand that a plurality of clients and web content servers are typically interconnected through the agency of the hosting site. Upon a request 115 from a client 113 for a given web page, typically made through an HTTP request from the resident browser, the process for providing a page using the pass through mechanism begins. Next, after having established that the requested page originates at the web content server 107, the hosting site makes a request 117 for the page. Presuming that this is a first request for the web page or that a more up to date

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		version of the page is available at the web content provider than is cached locally, the page is returned 119. In today's web technology, the web page is typically an HTML file with references to the component .wav, .mov, gif and JPEG files which together make up the web page as perceived by the user. Secondary page components such as cascading style sheets and Java applets can also be accommodated by the invention. The list above is merely exemplary; any component on a web page can be extracted and recast into the hosting site context by the present invention." Col. 4:10-49.
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	The '655 patent discloses that each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants. "These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser." Column 4, lines 57-63. "Note also that navigational features 315 and 317 native to the hosting server have been added to the page: A background border 319 giving the hosting web site a distinctive look and feel has also been added." Column 6, lines 42-45. "A representative system in which the present invention is implemented is illustrated in FIG. 1. A plurality of Internet client machines 10 are connectable to a computer network Internet Service Provider (ISP) 12 via a network such as a dialup telephone network 14. As is well known, the dialup telephone network usually has a given, limited number of connections 16a-16n. ISP 12 interfaces the client machines 10 to the remainder of the network 18, which includes the hosting server 19 and a plurality of web content provider server machines 20. A client machine typically includes a suite of kuown Internet tools, including a Web browser 13, to access the servers of the network and thus obtain certain services. These services include one-to-one messaging (e-mail), one-to-many messaging (bulletin board), on-line chat, file transfer and browsing. Various kuown Internet protocols are used for these services. Thus, for

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		example, browsing is effected using the Hypertext Transfer Protocol (HTTP), which provides users access to multimedia files using Hypertext Markup Language (HTML). The collection of servers that use HTTP comprise the World Wide Web, which is the Internet's multimedia information retrieval system. As shown in FIG. 2, the invention is a method and system for extracting Web-based content, especially, but not limited to, Web-based news articles, from content provider or source Web sites for use by the hosting or "pass-through" Web site. These articles typically are revenue-generating content for the publisher by carrying advertising banners above and/or below the article text. Therefore, the publishers must benefit from the arrangement provided by the hosting site to be interested in licensing their content for a low or no fee. As explained below, the web content provider maintains his ad revenue as the number of "hits" on the advertisements are maintained in a transparent manner. As the articles are also posted at the hosting site, ad revenues can actually increase since the ad impressions are being solicited from two sites rather than one." Column 3, line 55 through Column 4, line 24. *See* File History for 10/461,997, Office Action, dated September 29, 2004.
	(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	The '655 patent discloses that the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other. "As shown in FIG. 2, the invention is a method and system for extracting Web-based content, especially, but not limited to, Web-based news articles, from content provider or source Web sites for use by the hosting or "pass-through" Web site. These articles typically are revenue-generating content for the publisher by carrying advertising banners above and/or below the article text. Therefore, the publishers must benefit from the arrangement provided by the hosting site to be interested in licensing their content for a low or no fee. As explained below, the web content provider maintains his ad revenue as the number of "hits" on the advertisements are maintained in a transparent manner. As the articles are also posted at the hosting site, ad revenues can actually increase since the ad impressions are being solicited from two sites rather than one.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		During configuration, the pass through publisher 101 at the hosting site 103 is provided with the URLs 105 for the desired content provider web servers 107 and a set of filters 109 for the content publisher's document templates 111. For ease in illustration, a single client 113 and a single web content server 107 are depicted. However, the reader should understand that a plurality of clients and web content servers are typically interconnected through the agency of the hosting site. Upon a request 115 from a client 113 for a given web page, typically made through an HTTP request from the resident browser, the process for providing a page using the pass through mechanism begins. Next, after having established that the requested page originates at the web content server 107, the hosting site makes a request 117 for the page. Presuming that this is a first request for the web page or that a more up to date version of the page is available at the web content provider than is cached locally, the page is returned 119. In today's web technology, the web page is typically an HTML file with references to the component .wav, .mov, gif and JPEG files which together make up the web page as perceived by the user. Secondary page components such as cascading style sheets and Java applets can also be accommodated by the invention. The list above is merely exemplary; any component on a web page can be extracted and recast into the hosting site context by the present invention." Col. 4:10-49. "The invention provides a mechanism which allows a hosting web site to provide a wide variety and great amount of third party Web content without incurring high licensing costs. Another benefit of the pass through system is in cost savings. Unlike a traditional system of licensing and republishing content, the hosting system does not require a large production staff since the republishing and re-styling of the content is automatic. A hosting system can provide a much faster production cycle and assure that the content does not quickly go "out of date". A discussion of filter definition creation follows. The collection of document filters help the pass through engine understand the structure of a wide variety of web documents. The document filters can be created through several methods, including the analysis of the HTML source code, imbedded comments or delimiters and through comparisons with similar documents. Once the style of the web site is understood, a filter can be developed to look for the portion of the original document in which the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		hosting site is interested in reformatting. Inconsistencies in document style or structure can be neutralized by the use of custom code imbedded in the web page and detailed in the filter definition. A CGI or other program can be used to create filter definition files. FIG. 6 shows a user interface in which tags or text can be entered manually so that the pass through publisher can more easily parse a web content provider's web pages. In the browser window 501, client area 503 contains a plurality of controls for a set of desired components. Entry fields 505, 507, 509, 511, 513, 515, 517, 519 and 521 are respectively used to enter the filter name, the logo name, a copyright string, a beginning of the top banner ad, the ending of top banner ad, the beginning of the article text, the ending of the article text, the beginning of the bottom ad and the ending of the bottom ad. Note that certain items such as logo name and copyright string could be replacements for those which occur in the web page, rather than indicators of the desired content. A set of check boxes 523 allows the filter designer to indicate which of these items he wishes to keep on the recast page. The table stripping check boxes 525 indicate whether table formatting should be stripped from certain areas of the content provider's page. Custom filter code can be entered in field 527. Field 529 allows the entry of custom code for filtering code behaviors outside the predefined filters. Special cases can be accommodated by adding a function in Perl, Java, JavaScript or a specialized filter scripting language. Push button 531 allows the user to change to a different filter definition. Each filter definition is stored in a filter definition database accessible by the pass through publisher. The publisher uses the filter definition to break the content into component parts: The title area, primary and secondary advertisements, and the content itself. The title area includes the title of the web page and is typically marked by HTML tags. The primary and secondary advertisements usually occur at the top and bottom of the web page, but may be located at different locations. They are typically marked in the HTML by tags or comments indicating an advertisement. Depending on various factors, such as the desired look and feel for the hosting web

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		site, the cross-publishing agreement with the content provider, i.e. allowing for republishing certain types of web content but not others and the filter, the content may be very plain. A "bare bones" filter may strip out any extraneous links or "side bars" of information. Alternatively, the content may be a verbatim copy of a selected portion of the original web page. In addition to providing the system with information on separating the components of the document, filter definitions also include publisher specific information such as the logo or copyright statements and policies that should be used by the pass through publisher when formatting the new version of the document. Alternatively, the logo and copyright statements could be excerpted components like the title, ads and content. The filter definitions can also include the "policy" for a particular web content provider. Any number of policies can be established based on publisher, article, article section or any other distinguishing criteria that can be identified. Policies might govern whether content is licensed for use on an intranet, but not on the Internet, or vice versa, or both; how many times a document may be served off a host site; whether the publisher's ads should be passed through or not; what kind of caching strategy should be applied; what cost each view of the article carries for the host site; and so on. The specific types of policies available will depend on the context in which pass-through is being used, whether as a commercial product, integrated into custom solutions, or bundled with other products." Col. 9:14 – 10:37.
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	The '655 patent discloses automatically retrieving from a storage coupled to the server pre stored data associated with the source page. "A representative system in which the present invention is implemented is illustrated in FIG. 1. A plurality of Internet client machines 10 are connectable to a computer network Internet Service Provider (ISP) 12 via a network such as a dialup telephone network 14. As is well known, the dialup telephone network usually has a given, limited number of connections 16a-16n. ISP 12 interfaces the client machines 10 to the remainder of the network 18, which includes the hosting server 19 and a plurality of

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		web content provider server machines 20. A client machine typically includes a suite of known Internet tools, including a Web browser 13, to access the servers of the network and thus obtain certain services. These services include one-to-one messaging (e-mail), one-to-many messaging (bulletin board), on-line chat, file transfer and browsing. Various known Internet protocols are used for these services. Thus, for example, browsing is effected using the Hypertext Transfer Protocol (HTTP), which provides users access to multimedia files using Hypertext Marknp Language (HTML). The collection of servers that use HTTP comprise the World Wide Web, which is the Internet's multimedia information retrieval system. As shown in FIG. 2, the invention is a method and system for extracting Web-based content, especially, but not limited to, Web-based news articles, from content provider or source Web sites for use by the hosting or "pass-through" Web site. These articles typically are revenue-generating content for the publisher by carrying advertising banners above and/or below the article text. Therefore, the publishers must benefit from the arrangement provided by the hosting site to be interested in licensing their content for a low or no fee. As explained below, the web content provider maintains his ad revenue as the number of "hits" on the advertisements are maintained in a transparent manner. As the articles are also posted at the hosting site, ad revenues can actually increase since the ad impressions are being solicited from two sites rather than one." Column 3, line 55 through Column 4, line 24. "These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser." Column 4, lines 57-63. "Note also that navigational features 315 and 317 native to the hosting server have been added to the page. A background border 319 giving the hosting web site a distinctive look and feel has also been added." Column 6, lines 42-45. "The invention allows the hosting site to extract and recast any number or type of

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		desired content elements from the web content provider page." Column 6, lines 49-51. "By abstracting the content from any particular content provider site and reformatting the content to the hosting site's format a consistent look and feel is maintained." Column 13, lines 19-22. "Next, the pass through publisher 101 retrieves the filter definitions and policies from the filter database 109 for this particular content provider web site. Using the filters and the retrieved HTML page, the pass through publisher 101 parses the HTML source for desired components of the page. Typically, this is the title of the article, the ad banner or banners and the article text itself, although other items on the page are potentially desirable. These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser. In a typical web interaction between browser and server, once the browser receives the HTML page, it issues additional requests for the component files such as .gifs, e.g., ad banners. For the ad banners themselves, the new page preserves the call 125 back to the content provider so that the correct advertising content is presented. It is common that each request of a web page from a server can be refreshed with a different advertisement. In this way, the end user receives a page with graphic and navigation features from the hosting Web site that has an embedded article from the publisher and an advertisement served from the publisher's site. The final result is content viewed by the end user in host site's native Web context, with an ad banner served from the original publisher, thereby preserving their revenue stream." Column 4, line 50 through Column 5, line 11. "In step 413, it is determined whether there is a suitable filter definition in the account folder for the content provider for the new page. As most pages in a web site share a common format and style, it is envisioned that a relatively small set of filter definitions can be used for all of the pages from a particular site. If there is no existing filter

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		definition suitable, in step 415, a new filter definition is created for the page. There is more discussion on the creation of filter definitions and policies below in connection with FIG. 6. In step 417, the page, i.e. URL is associated with the appropriate filter definition and in step 419 the appropriate changes to the account, URL and filter definition files are made. Optionally, the new page can be processed and cached as part of registration. Thus, in step 421, the filter definition is used by the pass through publisher to extract the desired portions of the page. In step 423, these portions of the page are cached for retrieval in the event of a client request. The process ends, step 425." Column 7, lines 16-33. "As mentioned above, the hosting site preferably caches content likely to be requested by a client to improve the speed and reliability of the hosting web site pages. In this way, if the document has not changed since the pass through publisher last polled the site, it is retrieved from the local cache after registering the "hit" on the remote server. This reduces Internet bandwidth requirements and improves performance on both the hosting web server and the web content provider server. However, for the process depicted in FIG. 5B, new content has been retrieved from the web content provider web server, step 451. Once the document content has been retrieved from the host provider, the filter database is searched for the appropriate filter definition, step 453, the filter definition kept for the web content provider. The information in the filter definition will help the pass through publisher parse the document strncture of the web page, extracting the desired information. In step 457, a test is performed to determine whether the parsing was a success. If a filter definition for the page or web content provider is not found, or the first attempt using the associated filter definition was not a success, the pass through publisher can fall back to a series of default filters which will assist in parsing the data, step 459. The hosting site will still be able to present the reformatted content, however, the process will not be as efficient as through an existing filter definition. This "best

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		guess" approach utilizes several methods, including looking for common references to advertising engines, etc. As discussed below, the publisher can also look for a set of embedded tags indicating the desired content. Any document that a filter can not be found for can be logged, allowing staff to later create appropriate filter definitions. In practice, however, hosting sites employing the pass through technique will be able to define templates appropriate to all "rehosted" content. Most content provider sites employ a standard look and feel in their documents, allowing for filters that are appropriate for large numbers of documents found on a particular web site, if not every document on the entire provider web site." Column 7, line 47 through Column 8, line 18 "The component HTML file, once extracted, separated, and post filtered is then reformatted into a new document in the style and context of the hosting web site, step 463. This is done by another component of the pass through publisher, a web publishing application that creates a "dynamic publishing template". The web publisher injects the excerpted content, titles, copyright statements and logos as received from the post filtering process. In step 465, the desired components are cached, which may include components useful in determining the version of a web page, but are not used in the recast page. In step 467, the recast page is sent to the requesting client. The process ends, step 469. Once presented by the requesting browser, the content of the hosting web site appears seamless to the user, although it may originate at a plurality of web content provider sites as well as the hosting site itself." Column 8, lines 45-60. "Each filter definition is stored in a filter definition database accessible by the pass through publisher. The publisher uses the filter definition to break the content into component parts: The title area, primary and secondary advertisements, and the content itself. The title area includes the title of the web page and is typically marked by HTML tags. The primary and secondary advertisements usually occur at the top and bottom of the web page, but may be located at different locations. They are typically marked in the HTML by tags or comments indicating an advertisement. Depending on various factors, such as the desired look and feel for the hosting web site, the cross-publishing agreement with the content provider, i.e. allowing for

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		republishing certain types of web content but not others and the filter, the content may be very plain. A "bare bones" filter may strip out any extraneous links or "side bars" of information. Alternatively, the content may be a verbatim copy of a selected portion of the original web page." Column 9, line 64 through Column 10, line 14 *See* File History for 10/461,997, Office Action, dated September 29, 2004.
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes:	The '655 patent discloses automatically with the server computer generating and transmitting to the web browser a second web page. "By abstracting the content from any particular content provider site and reformatting the content to the hosting site's format a consistent look and feel is maintained." Column 13, lines 19-22. *See also* 3-6, *infra*.
	(i) information associated with the commerce object associated with the link that has been activated, and	The '655 patent discloses that the second webpage includes information associated with the commerce object associated with the link that has been activated. "A representative system in which the present invention is implemented is illustrated in FIG. 1. A plurality of Internet client machines 10 are connectable to a computer network Internet Service Provider (ISP) 12 via a network such as a dialup telephone network 14. As is well known, the dialup telephone network usually has a given, limited number of connections 16a-16n. ISP 12 interfaces the client machines 10 to the remainder of the network 18, which includes the hosting server 19 and a plurality of web content provider server machines 20. A client machine typically includes a suite of known Internet tools, including a Web browser 13, to access the servers of the network and thus obtain certain services. These services include one-to-one messaging (e-mail), one-to-many messaging (bulletin board), on-line chat, file transfer and browsing. Various known Internet protocols are used for these services. Thus, for example, browsing is effected using the Hypertext Transfer Protocol (HTTP), which provides users access to multimedia files using Hypertext Marknp Language (HTML). The collection of servers that use HTTP comprise the World Wide Web, which is the Internet's multimedia information retrieval system.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		As shown in FIG. 2, the invention is a method and system for extracting Web-based content, especially, but not limited to, Web-based news articles, from content provider or source Web sites for use by the hosting or "pass-through" Web site. These articles typically are revenue-generating content for the publisher by carrying advertising banners above and/or below the article text. Therefore, the publishers must benefit from the arrangement provided by the hosting site to be interested in licensing their content for a low or no fee. As explained below, the web content provider maintains his ad revenue as the number of "hits" on the advertisements are maintained in a transparent manner. As the articles are also posted at the hosting site, ad revenues can actually increase since the ad impressions are being solicited from two sites rather than one." Column 3, line 55 through Column 4, line 24. "By abstracting the content from any particular content provider site and reformatting the content to the hosting site's format a consistent look and feel is maintained." Column 13, lines 19-22. "Next, the pass through publisher 101 retrieves the filter definitions and policies from the filter database 109 for this particular content provider web site. Using the filters and the retrieved HTML page, the pass through publisher 101 parses the HTML source for desired components of the page. Typically, this is the title of the article, the ad banner or banners and the article text itself, although other items on the page are potentially desirable. These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser. In a typical web interaction between browser and server, once the browser receives the HTML page, it issues additional requests for the component files such as .gifs, e.g., ad banners." Column 4, lines 50-66. "Note also that navigational features 315 and 317 native to the hosting server have been added to the page. A background border 319 giving the hosting web site a distinctive look and feel has also been added." Column 6, lines 42-45.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		"In step 413, it is determined whether there is a suitable filter definition in the account folder for the content provider for the new page. As most pages in a web site share a common format and style, it is envisioned that a relatively small set of filter definitions can be used for all of the pages from a particular site. If there is no existing filter definition suitable, in step 415, a new filter definition is created for the page. There is more discussion on the creation of filter definitions and policies below in connection with FIG. 6. In step 417, the page, i.e. URL is associated with the appropriate filter definition and in step 419 the appropriate changes to the account, URL and filter definition files are made. Optionally, the new page can be processed and cached as part of registration. Thus, in step 421, the filter definition is used by the pass through publisher to extract the desired portions of the page. In step 423, these portions of the page are cached for retrieval in the event of a client request. The process ends, step 425." Column 7, lines 16-33. "As mentioned above, the hosting site preferably caches content likely to be requested by a client to improve the speed and reliability of the hosting web site pages. In this way, if the document has not changed since the pass through publisher last polled the site, it is retrieved from the local cache after registering the "hit" on the remote server. This reduces Internet bandwidth requirements and improves performance on both the hosting web server and the web content provider server. However, for the process depicted in FIG. 5B, new content has been retrieved from the web content provider web server, step 451. Once the document content has been retrieved from the host provider, the filter database is searched for the appropriate filter definition, step 453, the filter definition kept for the web content provider. The information in the filter definition will help the pass through publisher parse the document strncture of the web page, extracting the desired information. In step 457, a test is performed to determine whether the parsing was a success. If a filter definition for the page or web content provider is not found, or the first attempt using the associated filter definition was not a success, the pass through

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		publisher can fall back to a series of default filters which will assist in parsing the data, step 459. The hosting site will still be able to present the reformatted content, however, the process will not be as efficient as through an existing filter definition. This "best guess" approach utilizes several methods, including looking for common references to advertising engines, etc. As discussed below, the publisher can also look for a set of embedded tags indicating the desired content. Any document that a filter can not be found for can be logged, allowing staff to later create appropriate filter definitions. In practice, however, hosting sites employing the pass through technique will be able to define templates appropriate to all "rehosted" content. Most content provider sites employ a standard look and feel in their documents, allowing for filters that are appropriate for large numbers of documents found on a particular web site, if not every document on the entire provider web site." Column 7, line 47 through Column 8, line 18 "The component HTML file, once extracted, separated, and post filtered is then reformatted into a new document in the style and context of the hosting web site, step 463. This is done by another component of the pass through publisher, a web publishing application that creates a "dynamic publishing template". The web publisher injects the excerpted content, titles, copyright statements and logos as received from the post filtering process. In step 465, the desired components are cached, which may include components useful in determining the version of a web page, but are not used in the recast page. In step 467, the recast page is sent to the requesting client. The process ends, step 469. Once presented by the requesting browser, the content of the hosting web site appears seamless to the user, although it may originate at a plurality of web content provider sites as well as the hosting site itself." Column 8, lines 45-60. "Each filter definition is stored in a filter definition database accessible by the pass through publisher. The publisher uses the filter definition to break the content into component parts: The title area, primary and secondary advertisements, and the content itself. The title area includes the title of the web page and is typically marked by HTML tags. The primary and secondary advertisements usually occur at the top and bottom of the web page, but may be located at different locations. They are

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		typically marked in the HTML by tags or comments indicating an advertisement. Depending on various factors, such as the desired look and feel for the hosting web site, the cross-publishing agreement with the content provider, i.e. allowing for republishing certain types of web content but not others and the filter, the content may be very plain. A "bare bones" filter may strip out any extraneous links or "side bars" of information. Alternatively, the content may be a verbatim copy of a selected portion of the original web page." Column 9, line 64 through Column 10, line 14 *See* File History for 10/461,997, Office Action, dated September 29, 2004.
	(ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	The '655 patent discloses that the second webpage includes a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page. *See* File History for 10/461,997, Office Action, dated September 29, 2004. "Next, the pass through publisher 101 retrieves the filter definitions and policies from the filter database 109 for this particular content provider web site. Using the filters and the retrieved HTML page, the pass through publisher 101 parses the HTML source for desired components of the page. Typically, this is the title of the article, the ad banner or banners and the article text itself, although other items on the page are potentially desirable. These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser. In a typical web interaction between browser and server, once the browser receives the HTML page, it issues additional requests for the component files such as .gifs, e.g., ad banners. For the ad banners themselves, the new page preserves the call 125 back to the content provider so that the correct advertising content is presented. It is common that each request of a web page from a server can be refreshed with a different advertisement. In this way, the end user receives a page with graphic and navigation features from the hosting Web site that has an embedded article from the publisher and an advertisement

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		served from the publisher's site. The final result is content viewed by the end user in host site's native Web context, with an ad banner served from the original publisher, thereby preserving their revenue stream." Column 4, line 50 through Column 5, line 11. "Note also that navigational features 315 and 317 native to the hosting server have been added to the page. A background border 319 giving the hosting web site a distinctive look and feel has also been added." Column 6, lines 42-45. "The invention allows the hosting site to extract and recast any number or type of desired content elements from the web content provider page." Column 6, lines 49-51
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	The '655 patent discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page. "These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser." Column 4, lines 57-63. "Note also that navigational features 315 and 317 native to the hosting server have been added to the page. A background border 319 giving the hosting web site a distinctive look and feel has also been added." Column 6, lines 42-45.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	The '655 patent discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page. "These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser." Column 4, lines 57-63.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		"Note also that navigational features 315 and 317 native to the hosting server have been added to the page. A background border 319 giving the hosting web site a distinctive look and feel has also been added." Column 6, lines 42-45.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	The '655 patent discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page. "These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser." Column 4, lines 57-63. "Note also that navigational features 315 and 317 native to the hosting server have been added to the page. A background border 319 giving the hosting web site a distinctive look and feel has also been added." Column 6, lines 42-45.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	The '655 patent discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page. "For example, the logo 305 is an optional feature." Col 6, lines 55-56.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	This element is inherent or obvious in view of the prior art.
8	The method of claim 1 wherein the second web	The '655 patent discloses the method of claim 1 wherein the second web page is

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
	page is generated dynamically.	generated dynamically. "It should also be noted that the article text is preferably cached in a local cache 131, on the hosting Web server 103, for faster access and guaranteed access in the event that the publisher's Web site becomes inaccessible. The invention encompasses several variations in the types of information parsed from the page and cached locally. Some of this information may be incorporated in the recast HTML page and some may be used for version checking. For example, information in the HTML header such as "last modified", "content length" and "content type" could be kept with the article text so that the copy in the cache can be compared to the version available at the content provider site. However, in the preferred embodiment, the applicants have found it to be more efficient to simply compare the "last modified" data in the HTML header with the "last modified" data in the hosting system's cache file. Remember that the hosting site 103 makes the request 117 for the client to preserve the accounting data for the content provider web site 107. Since the header data is among the first to be transmitted 119 in response, after a simple compare establishes that the cached version and the version currently available at the content provider web site are the same, the transmission 119 from the content provider can be ended. The hosting system 103 then uses the cached copy of the article. In the event of no response from the content provider web site, a cached copy of the article is used. When there is no cached copy of an article, or the compare establishes that a more recent version of the article is available, the entire transmission 119 from the content provider is received for processing. Alternatively, rather than waiting for a client request, the `freshness` of the cached content can be ascertained by automatically generating HTTP requests from the cached URLs and monitoring data in the HTTP headers when the page is hit in the background, updating the cache any time the web content provider changes their data. The aim of caching pass-through web content is to maximize efficiency by minimizing network bandwidth requirements while preserving the transparency of the transaction. By caching copies of the parsed content on the hosting server, serving the content to the end user directly and simulating their `hit` on the publisher's site in the background, the end user gets content directly from hosting site without having to wait for data to travel from the content web provider's site to the hosting site. However, this

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		method only assures a correct count for the web content provider whose advertising systems use a secondary HTTP request for the image retrieval to generate the ad impression. For systems that rely on dynamic HTML generation to log ad impressions, the ad content must be retrieved for each user and not cached on the host site. The static portion of the page, i.e. the article, however, can be cached, since it remains the same for each visit at least for a relatively long period of time. Serving the recast page to the end user will be delayed by the network for retrieving the ad content, but if the publisher's site becomes unavailable, the end user will not be affected. An alternative embodiment to the invention is to provide a client based Java applet that retrieves dynamic content from the web content provider's server directly from the end user's browser. This allows the recast page to be loaded from the hosting site's cache to the client browser and invoking the Java applet for the retrieval of marked dynamic content. This reduces the network bottleneck at the hosting site for dynamic HTML ad generation. It should also be noted that the article text is preferably cached in a local cache 131, on the hosting Web server 103, for faster access and guaranteed access in the event that the publisher's Web site becomes inaccessible. The invention encompasses several variations in the types of information parsed from the page and cached locally. Some of this information may be incorporated in the recast HTML page and some may be used for version checking. For example, information in the HTML header such as "last modified", "content length" and "content type" could be kept with the article text so that the copy in the cache can be compared to the version available at the content provider site. However, in the preferred embodiment, the applicants have found it to be more efficient to simply compare the "last modified" data in the HTML header with the "last modified" data in the hosting system's cache file. Remember that the hosting site 103 makes the request 117 for the client to preserve the accounting data for the content provider web site 107. Since the header data is among the first to be transmitted 119 in response, after a simple compare establishes that the cached version and the version currently available at the content provider web site are the same, the transmission 119 from the content provider can be ended. The hosting system 103 then uses the cached copy of the article. In the event of no response from the content

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		provider web site, a cached copy of the article is used. When there is no cached copy of an article, or the compare establishes that a more recent version of the article is available, the entire transmission 119 from the content provider is received for processing. Alternatively, rather than waiting for a client request, the `freshness` of the cached content can be ascertained by automatically generating HTTP requests from the cached URLs and monitoring data in the HTTP headers when the page is hit in the background, updating the cache any time the web content provider changes their data. The aim of caching pass-through web content is to maximize efficiency by minimizing network bandwidth requirements while preserving the transparency of the transaction. By caching copies of the parsed content on the hosting server, serving the content to the end user directly and simulating their `hit` on the publisher's site in the background, the end user gets content directly from hosting site without having to wait for data to travel from the content web provider's site to the hosting site. However, this method only assures a correct count for the web content provider whose advertising systems use a secondary HTTP request for the image retrieval to generate the ad impression. For systems that rely on dynamic HTML generation to log ad impressions, the ad content must be retrieved for each user and not cached on the host site. The static portion of the page, i.e. the article, however, can be cached, since it remains the same for each visit at least for a relatively long period of time. Serving the recast page to the end user will be delayed by the network for retrieving the ad content, but if the publisher's site becomes unavailable, the end user will not be affected. An alternative embodiment to the invention is to provide a client based Java applet that retrieves dynamic content from the web content provider's server directly from the end user's browser. This allows the recast page to be loaded from the hosting site's cache to the client browser and invoking the Java applet for the retrieval of marked dynamic content. This reduces the network bottleneck at the hosting site for dynamic HTML ad generation." Col. 5:12 – 6:8.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object	The '655 patent discloses the method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.

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	displayed on the source page.	"If an agreed on set of tags used by the web content provider and hosting sites, 100% of Web documents are parseable. Thus, no intelligence is required from the pass through mechanism and no programming or scripting is required of the user. Special tags are embedded in the source of the targeted document(s) which identify the content areas. This allows a `default` filter to be used that requires no customization beyond supplying it with the target URL. These special tags could take the form of HTML comments. In the future, the tags can be formalized as an XML Document Type Definition. It is envisioned that HTML editing programs used by the content provider can add the tags as the web content is created automatically. The speed of document retrieval is an issue with the invention, since in essence a single user's request for a document is transformed into two separate requests, with all the potential for bottlenecks that any Web transaction has. Caching can provide a partial solution, the title area, article body and other desired content can be cached locally on the hosting site, so that it can be delivered to the user more quickly. Ad source needs to be retrieved from the source site on a per-user basis to preserve the ad accounting process of many web sites. In addition, many ad systems serve ads based on the visitor's browser or other information." Col. 12:30-54.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	The '655 patent discloses the method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed. "If an agreed on set of tags used by the web content provider and hosting sites, 100% of Web documents are parseable. Thus, no intelligence is required from the pass through mechanism and no programming or scripting is required of the user. Special tags are embedded in the source of the targeted document(s) which identify the content areas. This allows a `default` filter to be used that requires no customization beyond supplying it with the target URL. These special tags could take the form of HTML comments. In the future, the tags can be formalized as an XML Document Type Definition. It is envisioned that HTML editing programs used by the content provider can add the tags as the web content is created automatically.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		The speed of document retrieval is an issue with the invention, since in essence a single user's request for a document is transformed into two separate requests, with all the potential for bottlenecks that any Web transaction has. Caching can provide a partial solution, the title area, article body and other desired content can be cached locally on the hosting site, so that it can be delivered to the user more quickly. Ad source needs to be retrieved from the source site on a per-user basis to preserve the ad accounting process of many web sites. In addition, many ad systems serve ads based on the visitor's browser or other information." Col. 12:30-54.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*See* 1(c)(ii), *supra*.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	The '655 patent discloses the method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page. "A representative system in which the present invention is implemented is illustrated in FIG. 1. A plurality of Internet client machines 10 are connectable to a computer network Internet Service Provider (ISP) 12 via a network such as a dialup telephone network 14. As is well known, the dialup telephone network usually has a given, limited number of connections 16a-16n. ISP 12 interfaces the client machines 10 to the remainder of the network 18, which includes the hosting server 19 and a plurality of web content provider server machines 20. A client machine typically includes a suite of known Internet tools, including a Web browser 13, to access the servers of the network and thus obtain certain services. These services include one-to-one messaging (e-mail), one-to-many messaging (bulletin board), on-line chat, file transfer and browsing. Various known Internet protocols are used for these services. Thus, for example, browsing is effected using the Hypertext Transfer Protocol (HTTP), which provides users access to multimedia files using Hypertext Markup Language (HTML). The collection of servers that use HTTP comprise the World Wide Web, which is the Internet's multimedia information retrieval system. As shown in FIG. 2, the invention is a method and system for extracting Web-based

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		content, especially, but not limited to, Web-based news articles, from content provider or source Web sites for use by the hosting or "pass-through" Web site. These articles typically are revenue-generating content for the publisher by carrying advertising banners above and/or below the article text. Therefore, the publishers must benefit from the arrangement provided by the hosting site to be interested in licensing their content for a low or no fee. As explained below, the web content provider maintains his ad revenue as the number of "hits" on the advertisements are maintained in a transparent manner. As the articles are also posted at the hosting site, ad revenues can actually increase since the ad impressions are being solicited from two sites rather than one." Column 3, line 55 through Column 4, line 24. "These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser." Column 4, lines 57-63. "Note also that navigational features 315 and 317 native to the hosting server have been added to the page. A background border 319 giving the hosting web site a distinctive look and feel has also been added." Column 6, lines 42-45. "The invention allows the hosting site to extract and recast any number or type of desired content elements from the web content provider page." Column 6, lines 49-51. "By abstracting the content from any particular content provider site and reformatting the content to the hosting site's format a consistent look and feel is maintained." Column 13, lines 19-22. "Next, the pass through publisher 101 retrieves the filter definitions and policies from the filter database 109 for this particular content provider web site. Using the filters and the retrieved HTML page, the pass through publisher 101 parses the HTML source for desired components of the page. Typically, this is the title of the article, the ad banner or banners and the article text itself, although other items on the page are

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		potentially desirable. These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser. In a typical web interaction between browser and server, once the browser receives the HTML page, it issues additional requests for the component files such as .gifs, e.g., ad banners. For the ad banners themselves, the new page preserves the call 125 back to the content provider so that the correct advertising content is presented. It is common that each request of a web page from a server can be refreshed with a different advertisement. In this way, the end user receives a page with graphic and navigation features from the hosting Web site that has an embedded article from the publisher and an advertisement served from the publisher's site. The final result is content viewed by the end user in host site's native Web context, with an ad banner served from the original publisher, thereby preserving their revenue stream." Column 4, line 50 through Column 5, line 11. "In step 413, it is determined whether there is a suitable filter definition in the account folder for the content provider for the new page. As most pages in a web site share a common format and style, it is envisioned that a relatively small set of filter definitions can be used for all of the pages from a particular site. If there is no existing filter definition suitable, in step 415, a new filter definition is created for the page. There is more discussion on the creation of filter definitions and policies below in connection with FIG. 6. In step 417, the page, i.e. URL is associated with the appropriate filter definition and in step 419 the appropriate changes to the account, URL and filter definition files are made. Optionally, the new page can be processed and cached as part of registration. Thus, in step 421, the filter definition is used by the pass through publisher to extract the desired portions of the page. In step 423, these portions of the page are cached for retrieval in the event of a client request. The process ends, step 425." Column 7, lines 16-33.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		"As mentioned above, the hosting site preferably caches content likely to be requested by a client to improve the speed and reliability of the hosting web site pages. In this way, if the document has not changed since the pass through publisher last polled the site, it is retrieved from the local cache after registering the "hit" on the remote server. This reduces Internet bandwidth requirements and improves performance on both the hosting web server and the web content provider server. However, for the process depicted in FIG. 5B, new content has been retrieved from the web content provider web server, step 451. Once the document content has been retrieved from the host provider, the filter database is searched for the appropriate filter definition, step 453, the filter definition kept for the web content provider. The information in the filter definition will help the pass through publisher parse the document strncture of the web page, extracting the desired information. In step 457, a test is performed to determine whether the parsing was a success. If a filter definition for the page or web content provider is not found, or the first attempt using the associated filter definition was not a success, the pass through publisher can fall back to a series of default filters which will assist in parsing the data, step 459. The hosting site will still be able to present the reformatted content, however, the process will not be as efficient as through an existing filter definition. This "best guess" approach utilizes several methods, including looking for common references to advertising engines, etc. As discussed below, the publisher can also look for a set of embedded tags indicating the desired content. Any document that a filter can not be found for can be logged, allowing staff to later create appropriate filter definitions. In practice, however, hosting sites employing the pass through technique will be able to define templates appropriate to all "rehosted" content. Most content provider sites employ a standard look and feel in their documents, allowing for filters that are appropriate for large numbers of documents found on a particular web site, if not every document on the entire provider web site." Column 7, line 47 through Column 8, line 18

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		"The component HTML file, once extracted, separated, and post filtered is then reformatted into a new document in the style and context of the hosting web site, step 463. This is done by another component of the pass through publisher, a web publishing application that creates a "dynamic publishing template". The web publisher injects the excerpted content, titles, copyright statements and logos as received from the post filtering process. In step 465, the desired components are cached, which may include components useful in determining the version of a web page, but are not used in the recast page. In step 467, the recast page is sent to the requesting client. The process ends, step 469. Once presented by the requesting browser, the content of the hosting web site appears seamless to the user, although it may originate at a plurality of web content provider sites as well as the hosting site itself." Column 8, lines 45-60. "Each filter definition is stored in a filter definition database accessible by the pass through publisher. The publisher uses the filter definition to break the content into component parts: The title area, primary and secondary advertisements, and the content itself. The title area includes the title of the web page and is typically marked by HTML tags. The primary and secondary advertisements usually occur at the top and bottom of the web page, but may be located at different locations. They are typically marked in the HTML by tags or comments indicating an advertisement. Depending on various factors, such as the desired look and feel for the hosting web site, the cross-publishing agreement with the content provider, i.e. allowing for republishing certain types of web content but not others and the filter, the content may be very plain. A "bare bones" filter may strip out any extraneous links or "side bars" of information. Alternatively, the content may be a verbatim copy of a selected portion of the original web page." Column 9, line 64 through Column 10, line 14 *See* File History for 10/461,997, Office Action, dated September 29, 2004.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser,	This element is inherent or obvious in view of the prior art.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
	places data representing the commerce object into a virtual shopping cart.	
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	This element is inherent or obvious in view of the prior art.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	This element is inherent or obvious in view of the prior art.
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra.*
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	*See* 13, *supra.*
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	The '655 patent discloses the method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages. "A representative system in which the present invention is implemented is illustrated in FIG. 1. A plurality of Internet client machines 10 are connectable to a computer network Internet Service Provider (ISP) 12 via a network such as a dialup telephone network 14. As is well known, the dialup telephone network usually has a given, limited number of connections 16a-16n. ISP 12 interfaces the client machines 10 to the remainder of the network 18, which includes the hosting server 19 and a plurality of web content provider server machines 20. A client machine typically includes a suite of known Internet tools, including a Web browser 13, to access the servers of the network and thus obtain certain services. These services include one-to-one messaging

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		(e-mail), one-to-many messaging (bulletin board), on-line chat, file transfer and browsing. Various known Internet protocols are used for these services. Thus, for example, browsing is effected using the Hypertext Transfer Protocol (HTTP), which provides users access to multimedia files using Hypertext Markup Language (HTML). The collection of servers that use HTTP comprise the World Wide Web, which is the Internet's multimedia information retrieval system. As shown in FIG. 2, the invention is a method and system for extracting Web-based content, especially, but not limited to, Web-based news articles, from content provider or source Web sites for use by the hosting or "pass-through" Web site. These articles typically are revenue-generating content for the publisher by carrying advertising banners above and/or below the article text. Therefore, the publishers must benefit from the arrangement provided by the hosting site to be interested in licensing their content for a low or no fee. As explained below, the web content provider maintains his ad revenue as the number of "hits" on the advertisements are maintained in a transparent manner. As the articles are also posted at the hosting site, ad revenues can actually increase since the ad impressions are being solicited from two sites rather than one." Column 3, line 55 through Column 4, line 24. "These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser." Column 4, lines 57-63 "Note also that navigational features 315 and 317 native to the hosting server have been added to the page. A background border 319 giving the hosting web site a distinctive look and feel has also been added." Column 6, lines 42-45. "The invention allows the hosting site to extract and recast any number or type of desired content elements from the web content provider page." Column 6, lines 49-51. "Next, the pass through publisher 101 retrieves the filter definitions and policies from

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		the filter database 109 for this particular content provider web site. Using the filters and the retrieved HTML page, the pass through publisher 101 parses the HTML source for desired components of the page. Typically, this is the title of the article, the ad banner or banners and the article text itself, although other items on the page are potentially desirable. These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser. In a typical web interaction between browser and server, once the browser receives the HTML page, it issues additional requests for the component files such as .gifs, e.g., ad banners. For the ad banners themselves, the new page preserves the call 125 back to the content provider so that the correct advertising content is presented. It is common that each request of a web page from a server can be refreshed with a different advertisement. In this way, the end user receives a page with graphic and navigation features from the hosting Web site that has an embedded article from the publisher and an advertisement served from the publisher's site. The final result is content viewed by the end user in host site's native Web context, with an ad banner served from the original publisher, thereby preserving their revenue stream." Column 4, line 50 through Column 5, line 11. *See* File History for 10/461,997, Office Action, dated September 29, 2004.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages;	*See* 1(a)-1(b), *supra.*
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	*See* 1(a)-1(b), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	*See* 1(a)-1(b), *supra.*
	(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* 1(a)-1(b), *supra.*
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to:	*See* 1(a)-1(c), *supra.*
	(i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages;	*See* 1(a)-1(c), *supra.*
	(ii) automatically identify as the source page the one of the first web pages on which the link has been activated;	*See* 1(a)-1(c), *supra.*
	(iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and	*See* 1(a)-1(c), *supra.*
	(iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays:	*See* 1(a)-1(c), *supra.*
	(A) information associated with the commerce object associated with the link that has been activated, and	*See* 1(a)-1(c), *supra.*
	(B) the plurality of visually perceptible elements visually corresponding to the source page.	*See* 1(a)-1(c), *supra.*
20.	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a	*See* 1, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
	computer of the outsource provider to perform the steps of:	
	(a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated;	*See* 1(a)(i), *supra.*
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	*See* 1(a)(ii), *supra.*
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	The '655 patent discloses that each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants. "These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser." Column 4, lines 57-63. "Note also that navigational features 315 and 317 native to the hosting server have been added to the page. A background border 319 giving the hosting web site a distinctive look and feel has also been added."
	(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another;	*See* 1(a)(iii), *supra.*
	(b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then	The '655 patent discloses automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page. "A representative system in which the present invention is implemented is illustrated in FIG. 1. A plurality of Internet client machines 10 are connectable to a computer network Internet Service Provider (ISP) 12 via a network such as a dialup telephone

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		network 14. As is well known, the dialup telephone network usually has a given, limited number of connections 16a-16n. ISP 12 interfaces the client machines 10 to the remainder of the network 18, which includes the hosting server 19 and a plurality of web content provider server machines 20. A client machine typically includes a suite of known Internet tools, including a Web browser 13, to access the servers of the network and thus obtain certain services. These services include one-to-one messaging (e-mail), one-to-many messaging (bulletin board), on-line chat, file transfer and browsing. Various known Internet protocols are used for these services. Thus, for example, browsing is effected using the Hypertext Transfer Protocol (HTTP), which provides users access to multimedia files using Hypertext Markup Langnage (HTML). The collection of servers that use HTTP comprise the World Wide Web, which is the Internet's multimedia information retrieval system. As shown in FIG. 2, the invention is a method and system for extracting Web-based content, especially, but not limited to, Web-based news articles, from content provider or source Web sites for use by the hosting or "pass-through" Web site. These articles typically are revenue-generating content for the publisher by carrying advertising banners above and/or below the article text. Therefore, the publishers must benefit from the arrangement provided by the hosting site to be interested in licensing their content for a low or no fee. As explained below, the web content provider maintains his ad revenue as the number of "hits" on the advertisements are maintained in a transparent manner. As the articles are also posted at the hosting site, ad revenues can actually increase since the ad impressions are being solicited from two sites rather than one." Column 3, line 55 through Column 4, line 24. "These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser." Column 4, lines 57-63. "Note also that navigational features 315 and 317 native to the hosting server have been added to the page. A background border 319 giving the hosting web site a

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		distinctive look and feel has also been added." Column 6, lines 42-45. "The invention allows the hosting site to extract and recast any number or type of desired content elements from the web content provider page." Column 6, lines 49-51. "By abstracting the content from any particular content provider site and reformatting the content to the hosting site's format a consistent look and feel is maintained." Column 13, lines 19-22. "Next, the pass through publisher 101 retrieves the filter definitions and policies from the filter database 109 for this particular content provider web site. Using the filters and the retrieved HTML page, the pass through publisher 101 parses the HTML source for desired components of the page. Typically, this is the title of the article, the ad banner or banners and the article text itself, although other items on the page are potentially desirable. These pieces of content are then recast into a new web page by means of an HTML template 121 that matches the look and feel of the hosting Web site. The new page includes the graphics of the hosting provider as well as the navigational features of the hosting site. This page is then sent 123 to the client 113 for presentation by the browser. In a typical web interaction between browser and server, once the browser receives the HTML page, it issues additional requests for the component files such as .gifs, e.g., ad banners. For the ad banners themselves, the new page preserves the call 125 back to the content provider so that the correct advertising content is presented. It is common that each request of a web page from a server can be refreshed with a different advertisement. In this way, the end user receives a page with graphic and navigation features from the hosting Web site that has an embedded article from the publisher and an advertisement served from the publisher's site. The final result is content viewed by the end user in host site's native Web context, with an ad banner served from the original publisher, thereby preserving their revenue stream." Column 4, line 50 through Column 5, line 11. "In step 413, it is determined whether there is a suitable filter definition in the account

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		folder for the content provider for the new page. As most pages in a web site share a common format and style, it is envisioned that a relatively small set of filter definitions can be used for all of the pages from a particular site. If there is no existing filter definition suitable, in step 415, a new filter definition is created for the page. There is more discussion on the creation of filter definitions and policies below in connection with FIG. 6. In step 417, the page, i.e. URL is associated with the appropriate filter definition and in step 419 the appropriate changes to the account, URL and filter definition files are made. Optionally, the new page can be processed and cached as part of registration. Thus, in step 421, the filter definition is used by the pass through publisher to extract the desired portions of the page. In step 423, these portions of the page are cached for retrieval in the event of a client request. The process ends, step 425." Column 7, lines 16-33. "As mentioned above, the hosting site preferably caches content likely to be requested by a client to improve the speed and reliability of the hosting web site pages. In this way, if the document has not changed since the pass through publisher last polled the site, it is retrieved from the local cache after registering the "hit" on the remote server. This reduces Internet bandwidth requirements and improves performance on both the hosting web server and the web content provider server. However, for the process depicted in FIG. 5B, new content has been retrieved from the web content provider web server, step 451. Once the document content has been retrieved from the host provider, the filter database is searched for the appropriate filter definition, step 453, the filter definition kept for the web content provider. The information in the filter definition will help the pass through publisher parse the document strncture of the web page, extracting the desired information. In step 457, a test is performed to determine whether the parsing was a success. If a filter definition for the page or web content provider is not found, or the first attempt using the associated filter definition was not a success, the pass through

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		publisher can fall back to a series of default filters which will assist in parsing the data, step 459. The hosting site will still be able to present the reformatted content, however, the process will not be as efficient as through an existing filter definition. This "best guess" approach utilizes several methods, including looking for common references to advertising engines, etc. As discussed below, the publisher can also look for a set of embedded tags indicating the desired content. Any document that a filter can not be found for can be logged, allowing staff to later create appropriate filter definitions. In practice, however, hosting sites employing the pass through technique will be able to define templates appropriate to all "rehosted" content. Most content provider sites employ a standard look and feel in their documents, allowing for filters that are appropriate for large numbers of documents found on a particular web site, if not every document on the entire provider web site." Column 7, line 47 through Column 8, line 18 "The component HTML file, once extracted, separated, and post filtered is then reformatted into a new document in the style and context of the hosting web site, step 463. This is done by another component of the pass through publisher, a web publishing application that creates a "dynamic publishing template". The web publisher injects the excerpted content, titles, copyright statements and logos as received from the post filtering process. In step 465, the desired components are cached, which may include components useful in determining the version of a web page, but are not used in the recast page. In step 467, the recast page is sent to the requesting client. The process ends, step 469. Once presented by the requesting browser, the content of the hosting web site appears seamless to the user, although it may originate at a plurality of web content provider sites as well as the hosting site itself." Column 8, lines 45-60. "Each filter definition is stored in a filter definition database accessible by the pass through publisher. The publisher uses the filter definition to break the content into component parts: The title area, primary and secondary advertisements, and the content itself. The title area includes the title of the web page and is typically marked by HTML tags. The primary and secondary advertisements usually occur at the top and bottom of the web page, but may be located at different locations. They are

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
		typically marked in the HTML by tags or comments indicating an advertisement. Depending on various factors, such as the desired look and feel for the hosting web site, the cross-publishing agreement with the content provider, i.e. allowing for republishing certain types of web content but not others and the filter, the content may be very plain. A "bare bones" filter may strip out any extraneous links or "side bars" of information. Alternatively, the content may be a verbatim copy of a selected portion of the original web page." Column 9, line 64 through Column 10, line 14 *See* File History for 10/461,997, Office Action, dated September 29, 2004.
	(c) automatically computer-generating and transmitting to the web browser a second web page that includes:	The '655 patent discloses automatically computer-generating and transmitting to the web browser a second web page. "By abstracting the content from any particular content provider site and reformatting the content to the hosting site's format a consistent look and feel is maintained." Column 13, lines 19-22.
	(i) information associated with the commerce object associated with the link that has been activated, and	The '655 patent discloses that the second web page includes information associated with the commerce object associated with the link that has been activated. "By abstracting the content from any particular content provider site and reformatting the content to the hosting site's format a consistent look and feel is maintained." Column 13, lines 19-22.
	(ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	*See* 1(c)(ii), *supra*.
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the	*See* 7, *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,128,655 ("the '655 patent")
	catalog.	
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra*.
24	The computer-readable memory of claim 20,	*See* 13-16, *supra*.
	(i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and	*See* 13-16, *supra*.
	(ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	*See* 13-16, *supra*.
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra*.

Comparison of U.S. Patent No. 7,818,399 and U.S. Patent No. 5,991,740 "Data processing system for integrated tracking and management of commerce related activities on a public access network"[1]

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, U.S. Patent No. 5,991,740 anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 5,991,740 (hereinafter "'740 Patent")
1	A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	"The second established method of raising revenue by a Site Owner is to place banner ads on the web pages promoting a third party's goods or services." Column 4, lines 47-49; FIG. 5A.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	"These promotional banners further include embedded code, creating a link to the sponsoring third party—hereinafter called the 'Merchant.'" Column 4, lines 49-52; FIG. 5B. "At the Merchant's server, the specific goods are made available for purchase. This involves the use of secured transactions, via a credit card or other payment vehicle to order the goods with delivery by any one of the available delivery services (land or air)." Column 4, lines 60-65. "[T]he USER … begins the process by visiting a Site Owner block 20, such as one of the main web pages …. On this web page, a banner ad (text link or icon) is displayed to the USER promoting for example sneakers ….The link then continues directly to the Merchant block 40. During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a "cookie" placed on their system." Column 5, lines 17-29; FIG. 1. "USERS that access the banner are transferred to Merchant's web page, via the embedded link and may be presented with the ability to make a purchase directly from the Merchant [where] . . . the specific goods are made available for purchase." Column 4, lines 52-62; FIGs. 6A, 6B. "Co-branding of products/services is also efficiently accomplished in the foregoing

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[1] Unless noted, all citations in this chart are to U.S. Patent No. 5991,740 "Data processing system for integrated tracking and management of commerce related activities on a public access network" by Stephen Dale Messer (filed Jun. 10, 1997, issued Nov. 23, 1999). *[DFNDT0000115-0000132]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 5,991,740 (hereinafter "'740 Patent")
		environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a "merge" algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a "return" button to go back to the originating Site Owner." Column 9, line 64 – column 10, line 5. "Some web sites are considered "Content Providers" (or "Site Owners," i.e., those in control of one or more web sites) as they include one or more web pages having information that is of interest to USERS during a browsing session. These Site Owners currently have at least two mechanisms for generating revenues. The first involves the charging of a subscription fee to the visiting USERS somewhat akin to a magazine subscription. This mode of revenue generation is not particularly relevant to the present invention. … The second site of interest is the Merchant's server. At the Merchant's server, the specific goods are made available for purchase. This involves the use of secured transactions, via a credit card or other payment vehicle to order the goods with delivery by any one of the available delivery services (land or air). To implement the present invention, programming is installed on the Merchant's server that is capable of tracking the number of visits by USERS that are precipitated by links with banner ads. Alternatively, the USER may be transferred back to the Clearinghouse for completion of the actual purchase transaction." Column 4, line 37 through column 5, line 3. The owner of the first web page is the Content Provider or Site Owner, the outsource provider is the Merchant, and the selected merchant is the supplier, distributor, or manufacturer of the products sold on the Merchant webpage. It well-known to a person skilled in the art as of the filing date of the '740 Patent that a Merchant on its Merchant Site can sell products of third parties as well as its own products.
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	"These promotional banners further include embedded code, creating a link to the sponsoring third party—hereinafter called the 'Merchant.'" Column 4, lines 49-52; FIG. 5B. "The second site of interest is the Merchant's server. At the Merchant's server, the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 5,991,740 (hereinafter "'740 Patent")
		specific goods are made available for purchase." Column 4, lines 60-62; FIG. 6B. "[T]he USER … begins the process by visiting a Site Owner block 20, such as one of the main web pages …. On this web page, a banner ad (text link or icon) is displayed to the USER promoting for example sneakers ….The link then continues directly to the Merchant block 40. During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a "cookie" placed on their system." Column 5, lines 17-29; FIG. 1. "USERS that access the banner are transferred to Merchant's web page, via the embedded link and may be presented with the ability to make a purchase directly from the Merchant [where] . . . the specific goods are made available for purchase." Column 4, lines 52-62; FIGs. 6A, 6B. "Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a "merge" algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a "return" button to go back to the originating Site Owner." Column 9, line 64 – column 10, line 5.
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	*See also* 3-6, *infra*. "[T]he USER … begins the process by visiting a Site Owner block 20, such as one of the main web pages …. On this web page, a banner ad (text link or icon) is displayed to the USER promoting for example sneakers ….The link then continues directly to the Merchant block 40. During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a "cookie" placed on their system." Column 5, lines 17-29; FIG. 1. "Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 5,991,740 (hereinafter "'740 Patent")
		"merge" algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a "return" button to go back to the originating Site Owner." Column 9, line 64 – column 10, line 5.
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	"Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a "merge" algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a "return" button to go back to the originating Site Owner." Column 9, line 64 – column 10, line 5.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	"Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a "merge" algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a "return" button to go back to the originating Site Owner." Column 9, line 64 – column 10, line 5.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	"Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a "merge" algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a "return" button to go back to the originating Site Owner." Column 9, line 64 – column 10, line 5.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	"Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a "merge" algorithm that takes two or more images and combines these into an

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		aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a “return” button to go back to the originating Site Owner.” Column 9, line 64 – column 10, line 5.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	“It is yet another object of the present invention to provide a data processing system that monitors transactions and organizes information in a manner that allows for a variety of novel commission, marketing, advertising and servicing arrangements.” Column 3, lines 18-22. “During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a “cookie” placed on their system. These act as a marker to permit tracking of the USER by the Merchant and Clearinghouse, determine if and when the USER was involved in a purchase, and how to allocate the purchase commission to the Site Owner.” Column 5, lines 28-32. “If, however, the USER makes the purchase (“Yes” to test 800), information relating to the purchase and the USER are transferred back to the Clearinghouse server, block 820. Sales particulars including all co-promotion and commission payment are then calculated in accordance with stored protocols, block 850.” Column 9, lines 5-10. “As discussed previously, after information is received about the purchase at the Clearinghouse server, a commission determination is calculated. The commission will be a factor of several variables including the original arrangement worked out between the Merchant and the Site Owner, and the qualification of the USER in terms of access to the Merchant site, i.e., whether that USER had been directed to the Merchant site by more than one banner ad before the purchase was made. If so, a sharing or priority plan may be required. Once these terms have been implemented, final accounting for the Merchant and Site Owner is implemented including payment of commission and recording all transaction details. In this way, valuable records detailing the activity of select banners in terms of revenue are created allowing for accurate assessment of promotional impact.” Column 9, lines 12-26.
8	The method of claim 1 wherein the second web	“If, however, the USER selects the banner ad, the site program inputs onto the USER

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	page is generated dynamically.	command line the HTTP address for the Clearinghouse, block 750, and a “query string”, i.e., a string of code placed on the HTTP that provides source information. See, for example, line 4, Table I. Accordingly, USER access is directed to the Clearinghouse server, wherein the Clearinghouse server first stores several pieces of information, e.g., site (ID), banner (ID), and USER (X), block 760. Immediately thereafter the Clearinghouse server places onto the USER command line, the address for the Merchant (HTTP) directing USER control to the Merchant's web page, block 780. In accordance therewith, information about the product described in the banner ad is now displayed to the USER including the procedure for purchasing the product, block 790. “ Column 8, lines 52-67.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	“It is yet another object of the present invention to provide a data processing system that monitors transactions and organizes information in a manner that allows for a variety of novel commission, marketing, advertising and servicing arrangements.” Column 3, lines 18-22. “During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a “cookie” placed on their system. These act as a marker to permit tracking of the USER by the Merchant and Clearinghouse, determine if and when the USER was involved in a purchase, and how to allocate the purchase commission to the Site Owner.” Column 5, lines 28-32. “If, however, the USER makes the purchase (“Yes” to test 800), information relating to the purchase and the USER are transferred back to the Clearinghouse server, block 820. Sales particulars including all co-promotion and commission payment are then calculated in accordance with stored protocols, block 850.” Column 9, lines 5-10. “As discussed previously, after information is received about the purchase at the Clearinghouse server, a commission determination is calculated. The commission will be a factor of several variables including the original arrangement worked out between the Merchant and the Site Owner, and the qualification of the USER in terms of access to the Merchant site, i.e., whether that USER had been directed to the Merchant site by more than one banner ad before the purchase was made. If so, a sharing or priority

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		plan may be required. Once these terms have been implemented, final accounting for the Merchant and Site Owner is implemented including payment of commission and recording all transaction details. In this way, valuable records detailing the activity of select banners in terms of revenue are created allowing for accurate assessment of promotional impact.” Column 9, lines 12-26.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	“It is yet another object of the present invention to provide a data processing system that monitors transactions and organizes information in a manner that allows for a variety of novel commission, marketing, advertising and servicing arrangements.” Column 3, lines 18-22. “During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a “cookie” placed on their system. These act as a marker to permit tracking of the USER by the Merchant and Clearinghouse, determine if and when the USER was involved in a purchase, and how to allocate the purchase commission to the Site Owner.” Column 5, lines 28-32. “If, however, the USER makes the purchase (“Yes” to test 800), information relating to the purchase and the USER are transferred back to the Clearinghouse server, block 820. Sales particulars including all co-promotion and commission payment are then calculated in accordance with stored protocols, block 850.” Column 9, lines 5-10. “As discussed previously, after information is received about the purchase at the Clearinghouse server, a commission determination is calculated. The commission will be a factor of several variables including the original arrangement worked out between the Merchant and the Site Owner, and the qualification of the USER in terms of access to the Merchant site, i.e., whether that USER had been directed to the Merchant site by more than one banner ad before the purchase was made. If so, a sharing or priority plan may be required. Once these terms have been implemented, final accounting for the Merchant and Site Owner is implemented including payment of commission and recording all transaction details. In this way, valuable records detailing the activity of select banners in terms of revenue are created allowing for accurate assessment of promotional impact.” Column 9, lines 12-26.

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11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	“Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a “merge” algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a “return” button to go back to the originating Site Owner.” Column 9, line 64 – column 10, line 5.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	“To implement the present invention, programming is installed on the Merchant's server that is capable of tracking the number of visits by USERS that are precipitated by links with banner ads.” Column 4, line 65 through column 5, line 2. “It is another object of the present invention to provide a data processing system that tracks the access of one or more links placed on a select location on the web. These links can be either promotional by design or common icons or text that are merely used for interconnection.” Column 3, lines 3-7. “It is yet another object of the present invention to provide a data processing system that further tracks the transactions between a merchant and customer that were linked together, via a select promotional link on the web.” Column 3, lines 8-11. “The link between the first and second servers is labeled with a reference to a good or service available for purchase on the second server. The second server includes program controlling logic commands directing the server responses to inquiries from USERS interested in purchasing said goods or services, and providing communications to said Clearinghouse server in accordance with any transactions undertaken by the USER.” Column 3, lines 38-46.
13	The method of claim 1, wherein the second web page contains a further link associated with the	“The hub of operation is the Clearinghouse server, 30 linked for interconnection and communication with the network and, in particular, any Merchants and Site Owners

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	information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	interested in formalizing ad programs based on the precepts of the present invention. The Clearinghouse server is equipped with processing power and memory sufficient to meet the demand of multiple subscribers. In its preferred embodiments, the server is configured with either a UNIX operating system or an operating system based on Windows NT. Database management software utilizing Oracle 7 and Oracle webserver is also configured for the specific operating system environment. " Column 5, line 66 through column 6, line 10.
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	"The USER is confronted with the option of purchasing the product at test 800. If the USER determines not to make the purchase, logic branches to block 810, and the server places a cookie onto the USER. This cookie enables tracking of a later purchase, test 815 and block 817. If, however, the USER makes the purchase ("Yes" to test 800), information relating to the purchase and the USER are transferred back to the Clearinghouse server, block 820. Sales particulars including all co-promotion and commission payment are then calculated in accordance with stored protocols, block 850." Column 9, lines 1-11.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	"It is yet another object of the present invention to provide a data processing system that monitors transactions and organizes information in a manner that allows for a variety of novel commission, marketing, advertising and servicing arrangements." Column 3, lines 18-22. "During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a "cookie" placed on their system. These act as a marker to permit tracking of the USER by the Merchant and Clearinghouse, determine if and when the USER was involved in a purchase, and how to allocate the purchase commission to the Site Owner." Column 5, lines 28-32. "If, however, the USER makes the purchase ("Yes" to test 800), information relating to the purchase and the USER are transferred back to the Clearinghouse server, block 820. Sales particulars including all co-promotion and commission payment are then calculated in accordance with stored protocols, block 850." Column 9, lines 5-10.

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		"As discussed previously, after information is received about the purchase at the Clearinghouse server, a commission determination is calculated. The commission will be a factor of several variables including the original arrangement worked out between the Merchant and the Site Owner, and the qualification of the USER in terms of access to the Merchant site, i.e., whether that USER had been directed to the Merchant site by more than one banner ad before the purchase was made. If so, a sharing or priority plan may be required. Once these terms have been implemented, final accounting for the Merchant and Site Owner is implemented including payment of commission and recording all transaction details. In this way, valuable records detailing the activity of select banners in terms of revenue are created allowing for accurate assessment of promotional impact." Column 9, lines 12-26.
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra.* "It is yet another object of the present invention to provide a data processing system that monitors transactions and organizes information in a manner that allows for a variety of novel commission, marketing, advertising and servicing arrangements." Column 3, lines 18-22. "During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a "cookie" placed on their system. These act as a marker to permit tracking of the USER by the Merchant and Clearinghouse, determine if and when the USER was involved in a purchase, and how to allocate the purchase commission to the Site Owner." Column 5, lines 28-32. "If, however, the USER makes the purchase ("Yes" to test 800), information relating to the purchase and the USER are transferred back to the Clearinghouse server, block 820. Sales particulars including all co-promotion and commission payment are then calculated in accordance with stored protocols, block 850." Column 9, lines 5-10. "As discussed previously, after information is received about the purchase at the Clearinghouse server, a commission determination is calculated. The commission will be a factor of several variables including the original arrangement worked out between

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		the Merchant and the Site Owner, and the qualification of the USER in terms of access to the Merchant site, i.e., whether that USER had been directed to the Merchant site by more than one banner ad before the purchase was made. If so, a sharing or priority plan may be required. Once these terms have been implemented, final accounting for the Merchant and Site Owner is implemented including payment of commission and recording all transaction details. In this way, valuable records detailing the activity of select banners in terms of revenue are created allowing for accurate assessment of promotional impact." Column 9, lines 12-26.
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	"Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a "merge" algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a "return" button to go back to the originating Site Owner." Column 9, line 64 – column 10, line 5. "The hub of operation is the Clearinghouse server, 30 linked for interconnection and communication with the network and, in particular, any Merchants and Site Owners interested in formalizing ad programs based on the precepts of the present invention. The Clearinghouse server is equipped with processing power and memory sufficient to meet the demand of multiple subscribers. In its preferred embodiments, the server is configured with either a UNIX operating system or an operating system based on Windows NT. Database management software utilizing Oracle 7 and Oracle webserver is also configured for the specific operating system environment. " Column 5, line 66 through column 6, line 10.
19	A system useful in an outsource provider serving web pages offering commercial opportunities,	*See* 1, *supra.*

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	the system comprising:	"The second established method of raising revenue by a Site Owner is to place banner ads on the web pages promoting a third party's goods or services." Column 4, lines 47-49; FIG. 5A.
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* 1(a)-1(b), *supra.* "These promotional banners further include embedded code, creating a link to the sponsoring third party—hereinafter called the 'Merchant.'" Column 4, lines 49-52; FIG. 5B. "At the Merchant's server, the specific goods are made available for purchase. This involves the use of secured transactions, via a credit card or other payment vehicle to order the goods with delivery by any one of the available delivery services (land or air)." Column 4, lines 60-65. "[T]he USER … begins the process by visiting a Site Owner block 20, such as one of the main web pages …. On this web page, a banner ad (text link or icon) is displayed to the USER promoting for example sneakers ….The link then continues directly to the Merchant block 40. During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a "cookie" placed on their system." Column 5, lines 17-29; FIG. 1. "USERS that access the banner are transferred to Merchant's web page, via the embedded link and may be presented with the ability to make a purchase directly from the Merchant [where] . . . the specific goods are made available for purchase." Column 4, lines 52-62; FIGs. 6A, 6B. "Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a "merge" algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a "return" button to go back to the originating Site Owner."

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		Column 9, line 64 – column 10, line 5. “Some web sites are considered “Content Providers” (or “Site Owners,” i.e., those in control of one or more web sites) as they include one or more web pages having information that is of interest to USERS during a browsing session. These Site Owners currently have at least two mechanisms for generating revenues. The first involves the charging of a subscription fee to the visiting USERS somewhat akin to a magazine subscription. This mode of revenue generation is not particularly relevant to the present invention. … The second site of interest is the Merchant's server. At the Merchant's server, the specific goods are made available for purchase. This involves the use of secured transactions, via a credit card or other payment vehicle to order the goods with delivery by any one of the available delivery services (land or air). To implement the present invention, programming is installed on the Merchant's server that is capable of tracking the number of visits by USERS that are precipitated by links with banner ads. Alternatively, the USER may be transferred back to the Clearinghouse for completion of the actual purchase transaction.” Column 4, line 37 through column 5, line 3. The owner of the first web page is the Content Provider or Site Owner, the outsource provider is the Merchant, and the selected merchant is company manufacturing the products sold on the Merchant webpage. It well-known to a person skilled in the art as of the filing date of the ‘740 Patent that a Merchant on its Merchant Site can sell products of third parties as well as its own products.
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the	*See* 1(a)-1(c), *supra.* “These promotional banners further include embedded code, creating a link to the sponsoring third party—hereinafter called the ‘Merchant.’” Column 4, lines 49-52; FIG. 5B. “The second site of interest is the Merchant’s server. At the Merchant’s server, the specific goods are made available for purchase.” Column 4, lines 60-62; FIG. 6B. “[T]he USER … begins the process by visiting a Site Owner block 20, such as one of the main web pages …. On this web page, a banner ad (text link or icon) is displayed

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	source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	to the USER promoting for example sneakers ….The link then continues directly to the Merchant block 40. During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a “cookie” placed on their system.” Column 5, lines 17-29; FIG. 1. “USERS that access the banner are transferred to Merchant’s web page, via the embedded link and may be presented with the ability to make a purchase directly from the Merchant [where] . . . the specific goods are made available for purchase.” Column 4, lines 52-62; FIGs. 6A, 6B. “Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a “merge” algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a “return” button to go back to the originating Site Owner.” Column 9, line 64 – column 10, line 5.
	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated	“These promotional banners further include embedded code, creating a link to the sponsoring third party—hereinafter called the ‘Merchant.’” Column 4, lines 49-52; FIG. 5B. “The second site of interest is the Merchant’s server. At the Merchant’s server, the specific goods are made available for purchase.” Column 4, lines 60-62; FIG. 6B. “At the Merchant's server, the specific goods are made available for purchase. This involves the use of secured transactions, via a credit card or other payment vehicle to order the goods with delivery by any one of the available delivery services (land or air).” Column 4, lines 60-65. “[T]he USER … begins the process by visiting a Site Owner block 20, such as one of the main web pages …. On this web page, a banner ad (text link or icon) is displayed to the USER promoting for example sneakers ….The link then continues directly to the Merchant block 40. During the linking process, the USER has an identifier query

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	with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	string appended to the HTTP entry, and possibly a “cookie” placed on their system.” Column 5, lines 17-29; FIG. 1. “USERS that access the banner are transferred to Merchant’s web page, via the embedded link and may be presented with the ability to make a purchase directly from the Merchant [where] . . . the specific goods are made available for purchase.” Column 4, lines 52-62; FIGs. 6A, 6B. “Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a “merge” algorithm that takes two or more images and combines these into an aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a “return” button to go back to the originating Site Owner.” Column 9, line 64 – column 10, line 5. “Some web sites are considered “Content Providers” (or “Site Owners,” i.e., those in control of one or more web sites) as they include one or more web pages having information that is of interest to USERS during a browsing session. These Site Owners currently have at least two mechanisms for generating revenues. The first involves the charging of a subscription fee to the visiting USERS somewhat akin to a magazine subscription. This mode of revenue generation is not particularly relevant to the present invention. … The second site of interest is the Merchant's server. At the Merchant's server, the specific goods are made available for purchase. This involves the use of secured transactions, via a credit card or other payment vehicle to order the goods with delivery by any one of the available delivery services (land or air). To implement the present invention, programming is installed on the Merchant's server that is capable of tracking the number of visits by USERS that are precipitated by links with banner ads. Alternatively, the USER may be transferred back to the Clearinghouse for completion of the actual purchase transaction.” Column 4, line 37 through column 5, line 3. The owner of the first web page is the Content Provider or Site Owner, the outsource provider is the Merchant, and the selected merchant is company manufacturing the

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		products sold on the Merchant webpage. It well-known to a person skilled in the art as of the filing date of the ‘740 Patent that a Merchant on its Merchant Site can sell products of third parties as well as its own products.
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra.* “It is yet another object of the present invention to provide a data processing system that monitors transactions and organizes information in a manner that allows for a variety of novel commission, marketing, advertising and servicing arrangements.” Column 3, lines 18-22. “During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a “cookie” placed on their system. These act as a marker to permit tracking of the USER by the Merchant and Clearinghouse, determine if and when the USER was involved in a purchase, and how to allocate the purchase commission to the Site Owner.” Column 5, lines 28-32. “If, however, the USER makes the purchase (“Yes” to test 800), information relating to the purchase and the USER are transferred back to the Clearinghouse server, block 820. Sales particulars including all co-promotion and commission payment are then calculated in accordance with stored protocols, block 850.” Column 9, lines 5-10. “As discussed previously, after information is received about the purchase at the Clearinghouse server, a commission determination is calculated. The commission will be a factor of several variables including the original arrangement worked out between the Merchant and the Site Owner, and the qualification of the USER in terms of access to the Merchant site, i.e., whether that USER had been directed to the Merchant site by more than one banner ad before the purchase was made. If so, a sharing or priority plan may be required. Once these terms have been implemented, final accounting for the Merchant and Site Owner is implemented including payment of commission and recording all transaction details. In this way, valuable records detailing the activity of select banners in terms of revenue are created allowing for accurate assessment of promotional impact.” Column 9, lines 12-26.

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23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra*. "It is yet another object of the present invention to provide a data processing system that monitors transactions and organizes information in a manner that allows for a variety of novel commission, marketing, advertising and servicing arrangements." Column 3, lines 18-22. "During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a "cookie" placed on their system. These act as a marker to permit tracking of the USER by the Merchant and Clearinghouse, determine if and when the USER was involved in a purchase, and how to allocate the purchase commission to the Site Owner." Column 5, lines 28-32. "If, however, the USER makes the purchase ("Yes" to test 800), information relating to the purchase and the USER are transferred back to the Clearinghouse server, block 820. Sales particulars including all co-promotion and commission payment are then calculated in accordance with stored protocols, block 850." Column 9, lines 5-10. "As discussed previously, after information is received about the purchase at the Clearinghouse server, a commission determination is calculated. The commission will be a factor of several variables including the original arrangement worked out between the Merchant and the Site Owner, and the qualification of the USER in terms of access to the Merchant site, i.e., whether that USER had been directed to the Merchant site by more than one banner ad before the purchase was made. If so, a sharing or priority plan may be required. Once these terms have been implemented, final accounting for the Merchant and Site Owner is implemented including payment of commission and recording all transaction details. In this way, valuable records detailing the activity of select banners in terms of revenue are created allowing for accurate assessment of promotional impact." Column 9, lines 12-26.
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated	*See* 15-16, *supra*. "It is yet another object of the present invention to provide a data processing system

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 5,991,740 (hereinafter "'740 Patent")
	with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	that monitors transactions and organizes information in a manner that allows for a variety of novel commission, marketing, advertising and servicing arrangements." Column 3, lines 18-22. "During the linking process, the USER has an identifier query string appended to the HTTP entry, and possibly a "cookie" placed on their system. These act as a marker to permit tracking of the USER by the Merchant and Clearinghouse, determine if and when the USER was involved in a purchase, and how to allocate the purchase commission to the Site Owner." Column 5, lines 28-32. "If, however, the USER makes the purchase ("Yes" to test 800), information relating to the purchase and the USER are transferred back to the Clearinghouse server, block 820. Sales particulars including all co-promotion and commission payment are then calculated in accordance with stored protocols, block 850." Column 9, lines 5-10. "As discussed previously, after information is received about the purchase at the Clearinghouse server, a commission determination is calculated. The commission will be a factor of several variables including the original arrangement worked out between the Merchant and the Site Owner, and the qualification of the USER in terms of access to the Merchant site, i.e., whether that USER had been directed to the Merchant site by more than one banner ad before the purchase was made. If so, a sharing or priority plan may be required. Once these terms have been implemented, final accounting for the Merchant and Site Owner is implemented including payment of commission and recording all transaction details. In this way, valuable records detailing the activity of select banners in terms of revenue are created allowing for accurate assessment of promotional impact." Column 9, lines 12-26.
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra*. "Co-branding of products/services is also efficiently accomplished in the foregoing environment. Co-branding is the marketing or sales of two products through a single promotion. The system controlling software on the Clearinghouse server includes a "merge" algorithm that takes two or more images and combines these into an

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 5,991,740 (hereinafter "'740 Patent")
		aesthetically acceptable presentation. For example, the resulting banner on the Merchant site will include a "return" button to go back to the originating Site Owner." Column 9, line 64 – column 10, line 5. "The hub of operation is the Clearinghouse server, 30 linked for interconnection and communication with the network and, in particular, any Merchants and Site Owners interested in formalizing ad programs based on the precepts of the present invention. The Clearinghouse server is equipped with processing power and memory sufficient to meet the demand of multiple subscribers. In its preferred embodiments, the server is configured with either a UNIX operating system or an operating system based on Windows NT. Database management software utilizing Oracle 7 and Oracle webserver is also configured for the specific operating system environment. " Column 5, line 66 through column 6, line 10.

Comparison of the U.S. Patent No. 7,818,399 and Trip.com Prior Art[1]

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Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, The Trip.com prior art anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	The Trip.com Prior Art discloses a method of an outsource provider serving web pages offering commercial opportunities.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated;	The Trip.com Prior Art discloses automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated.
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	The Trip.com Prior Art discloses that each of the first web pages belongs to one of a plurality of web page owners. *See* DFNDT000921, showing contract between Trip.com and Digital Chicago, Inc. *See* DFNDT000931, showing contract between Trip.com and Travelon (to be linked to Altavista TravelZone home page)
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	The Trip.com Prior Art discloses that each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants. **"2.2 Linking and Joint Promotion of Internet Sites.** **2.2.2** SUN-TIMES shall; (a) provide for placement of a travel button on the SUN-TIMES Internet Site home page, and other appropriate departments within the SUN-TIMES Internet Site, linking to THETRIP.COM Internet Site; (b) be allowed to place a horizontal frame only, containing the trademarks and logos of the SUN-TIMES and its affiliate news papers, flush across the top ofTHETRIP.COM Internet Site. ... Said travel home page and jump

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[1] Unless noted, all citations in this chart relate to the Trip.com system. [DFNDT0000897-0000943]

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		pages shall rest on the SUN-TIMES Internet Site ...” [DFNDT000923]. **“2.2 Linking and Joint Promotion of Internet Sites.** 2.2.1 THETRIP.COM shall: (a) provide a link from the AltaVista TravelZone home page to the Co-Branded Site for the exclusive delivery of “Resort Packages” by TRAVELON; (b) guarantee the number of TRAVELON impressions on the AltaVista TravelZone home page according to the schedule in Exhibit B...” [DFNDT000933]. “Exhibit B. Guaranteed impressions on the Alta Vista TravelZone home page And fee payment structure to THETRIP.COM. ‘Resort Packages’ link to Co-branded site shall be placed on the home page of the Alta Vista Travel Zone. In addition, Link to Co-branded site shall be placed on the Travel Result Pages that originate from a travel search originating from the AltaVista Travel Zone.” [DFNDT000942].
	(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	The Trip.com Prior Art discloses that the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other. *See* DFNDT000922, showing contract between host Chicago Sun-Times Co. and Trip.com *See* DFNDT000922, referencing “travel suppliers” in section 1.8: 1.8. Transaction. The booking and ticketing of airline reservations derived from traffic originating from the SUN-TIMES Internet Site, and resulting in sales commissions paid for by travel suppliers to THETRIP.COM. For each user who originates from the SUN-TIMES and logs into reservations as a new *See* for example, DFNDT000920-943.
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	The Trip.com Prior Art discloses automatically retrieving from a storage coupled to the server pre stored data associated with the source page. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.2** SUN-TIMES shall; (a) provide for placement of a travel button on the SUN-TIMES Internet Site home page, and other appropriate departments within the SUN-TIMES Internet Site, linking to THETRIP.COM Internet Site; (b) be allowed to place a horizontal frame only, containing the trademarks and logos of the SUN-TIMES and its affiliate news papers,

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		flush across the top ofTHETRIP.COM Internet Site. ... Said travel home page and jump pages shall rest on the SUN-TIMES Internet Site ...” [DFNDT000923]. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.1** THETRIP.COM shall: (a) provide a link from the AltaVista TravelZone home page to the Co-Branded Site for the exclusive delivery of “Resort Packages” by TRAVELON; (b) guarantee the number of TRAVELON impressions on the AltaVista TravelZone home page according to the schedule in Exhibit B...” [DFNDT000933]. “Exhibit B. Guaranteed impressions on the Alta Vista TravelZone home page And fee payment structure to THETRIP.COM. ‘Resort Packages’ link to Co-branded site shall be placed on the home page of the Alta Vista Travel Zone. In addition, Link to Co-branded site shall be placed on the Travel Result Pages that originate from a travel search originating from the AltaVista Travel Zone.” [DFNDT000942].
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes:	The Trip.com Prior Art discloses automatically with the server computer generating and transmitting to the web browser a second web page. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.1** THETRIP.COM shall: (a) provide a link from the resources on the Net Section or similar Section of THETRIP.COM’s Internet service to a desiguated page on the SUN-TIMES Internet Sites, which link shall be branded with the trademarks and logos of the SUN-TIMES and its affiliate newspapers...” Exhibit A. Placement of “Resort Packages” button and other links from the AltaVista TravelZone to Co-Branded Site. Link via button to Co-Branded Site shall be placed at the sole discretion ofTHETRIP.COM on AltaVista’s TravelZone home page at http://search.thetrip.com/. The button itself shall not be branded at the AltaVista’s TravelZone home page level, but shall be named “Resort Packages” or similar language to describe the category of services offered by TRAVELON. TRAVELON’s brand name shall appear at the level subsequent to Alta Vista’s Travel Zone home page, after the user has clicked on the “Resort Packages” button.” [DFNDT000941].

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		See also 3-6, *infra*.
	(i) information associated with the commerce object associated with the link that has been activated, and	The Trip.com Prior Art discloses that the second webpage includes information associated with the commerce object associated with the link that has been activated. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.1** THETRIP.COM shall: (a) provide a link from the AltaVista TravelZone home page to the Co-Branded Site for the exclusive delivery of “Resort Packages” by TRAVELON; (b) guarantee the number of TRAVELON impressions on the AltaVista TravelZone home page according to the schedule in Exhibit B...” [DFNDT000933]. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.1** THETRIP.COM shall: (a) provide a link from the resources on the Net Section or similar Section of THETRIP.COM’s Internet service to a desiguated page on the SUN-TIMES Internet Sites, which link shall be branded with the trademarks and logos of the SUN-TIMES and its affiliate newspapers...” Exhibit A. Placement of “Resort Packages” button and other links from the AltaVista TravelZone to Co-Branded Site. Link via button to Co-Branded Site shall be placed at the sole discretion ofTHETRIP.COM on AltaVista’s TravelZone home page at http://search.thetrip.com/. The button itself shall not be branded at the AltaVista’s TravelZone home page level, but shall be named “Resort Packages” or similar language to describe the category of services offered by TRAVELON. TRAVELON’s brand name shall appear at the level subsequent to Alta Vista’s Travel Zone home page, after the user has clicked on the “Resort Packages” button.” [DFNDT000941]. “Exhibit B. Guaranteed impressions on the Alta Vista TravelZone home page And fee payment structure to THETRIP.COM. ‘Resort Packages’ link to Co-branded site shall be placed on the home page of the Alta Vista Travel Zone. In addition, Link to Co-branded site shall be placed on the Travel Result Pages that originate from a travel search originating from the AltaVista Travel Zone.” [DFNDT000942].

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		“2.2 Linking and Joint Promotion of Internet Sites. **2.2.2** SUN-TIMES shall; (a) provide for placement of a travel button on the SUN-TIMES Internet Site home page, and other appropriate departments within the SUN-TIMES Internet Site, linking to THETRIP.COM Internet Site; (b) be allowed to place a horizontal frame only, containing the trademarks and logos of the SUN-TIMES and its affiliate news papers, flush across the top ofTHETRIP.COM Internet Site. ... Said travel home page and jump pages shall rest on the SUN-TIMES Internet Site ...” [DFNDT000923].
	(ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	The Trip.com Prior Art discloses that the second webpage includes a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.2** SUN-TIMES shall; (a) provide for placement of a travel button on the SUN-TIMES Internet Site home page, and other appropriate departments within the SUN-TIMES Internet Site, linking to THETRIP.COM Internet Site; (b) be allowed to place a horizontal frame only, containing the trademarks and logos of the SUN-TIMES and its affiliate news papers, flush across the top of THETRIP.COM Internet Site.” [DFNDT000924]. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.2** TRAVELON shall: (a) create the Co-Branded Site...” [DFNDT000933].
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	The Trip.com Prior Art discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	The Trip.com Prior Art discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible	The Trip.com Prior Art discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
	elements includes the appearance of the header and footer of the source page.	source page.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	The Trip.com Prior Art discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.2** SUN-TIMES shall; (a) provide for placement of a travel button on the SUN-TIMES Internet Site home page, and other appropriate departments within the SUN-TIMES Internet Site, linking to THETRIP.COM Internet Site; (b) be allowed to place a horizontal frame only, containing the trademarks and logos of the SUN-TIMES and its affiliate news papers, flush across the top of THETRIP.COM Internet Site.” [DFNDT000924]. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.2** TRAVELON shall: (a) create the Co-Branded Site...” [DFNDT000933].
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	On information and belief, the Trip.com systems predating the critical date of this asserted patent included the method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.
8	The method of claim 1 wherein the second web page is generated dynamically.	The Trip.com Prior Art discloses the method of claim 1 wherein the second web page is generated dynamically. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.2** SUN-TIMES shall; (a) provide for placement of a travel button on the SUN-TIMES

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		Internet Site home page, and other appropriate departments within the SUN-TIMES Internet Site, linking to THETRIP.COM Internet Site; (b) be allowed to place a horizontal frame only, containing the trademarks and logos of the SUN-TIMES and its affiliate news papers, flush across the top ofTHETRIP.COM Internet Site. ... Said travel home page and jump pages shall rest on the SUN-TIMES Internet Site ...” [DFNDT000923]. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.1** THETRIP.COM shall: (a) provide a link from the AltaVista TravelZone home page to the Co-Branded Site for the exclusive delivery of “Resort Packages” by TRAVELON; (b) guarantee the number of TRAVELON impressions on the AltaVista TravelZone home page according to the schedule in Exhibit B...” [DFNDT000933]. “Exhibit B. Guaranteed impressions on the Alta Vista TravelZone home page And fee payment structure to THETRIP.COM. ‘Resort Packages’ link to Co-branded site shall be placed on the home page of the Alta Vista Travel Zone. In addition, Link to Co-branded site shall be placed on the Travel Result Pages that originate from a travel search originating from the AltaVista Travel Zone.” [DFNDT000942].
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	The Trip.com Prior Art discloses the method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page. *See* DFNDT000922-80, at section 1.8, including as a contract term the payment of an automatic commission to be paid to the Chicago Sun-Times for each user who originates from the SUN-TIMES and logs into reservations as a new member.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 9, *supra.*
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	The Trip.com Prior Art discloses the method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page. **“2.2 Linking and Joint Promotion of Internet Sites.**

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		2.2.2 SUN-TIMES shall; (a) provide for placement of a travel button on the SUN-TIMES Internet Site home page, and other appropriate departments within the SUN-TIMES Internet Site, linking to THETRIP.COM Internet Site; (b) be allowed to place a horizontal frame only, containing the trademarks and logos of the SUN-TIMES and its affiliate news papers, flush across the top of THETRIP.COM Internet Site.” [DFNDT000924]. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.2** TRAVELON shall: (a) create the Co-Branded Site...” [DFNDT000933].*See also* 1(c)(ii), *supra.*
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	The Trip.com Prior Art discloses the method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.2** SUN-TIMES shall; (a) provide for placement of a travel button on the SUN-TIMES Internet Site home page, and other appropriate departments within the SUN-TIMES Internet Site, linking to THETRIP.COM Internet Site; (b) be allowed to place a horizontal frame only, containing the trademarks and logos of the SUN-TIMES and its affiliate news papers, flush across the top ofTHETRIP.COM Internet Site. ... Said travel home page and jump pages shall rest on the SUN-TIMES Internet Site ...” [DFNDT000923]. **“2.2 Linking and Joint Promotion of Internet Sites.** **2.2.1** THETRIP.COM shall: (a) provide a link from the AltaVista TravelZone home page to the Co-Branded Site for the exclusive delivery of “Resort Packages” by TRAVELON; (b) guarantee the number of TRAVELON impressions on the AltaVista TravelZone home page according to the schedule in Exhibit B...” [DFNDT000933]. “Exhibit B. Guaranteed impressions on the Alta Vista TravelZone home page And fee payment structure to THETRIP.COM. ‘Resort Packages’ link to Co-branded site shall be placed on the home page of the Alta Vista Travel Zone. In addition, Link to Co-branded site

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		shall be placed on the Travel Result Pages that originate from a travel search originating from the AltaVista Travel Zone.” [DFNDT000942].
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	On information and belief, the Trip.com systems predating the critical date of this asserted patent discloses the method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	On information and belief, the Trip.com systems predating the critical date of this asserted patent discloses the method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	On information and belief, the Trip.com systems predating the critical date of this asserted patent discloses the method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 9-10, *supra.*
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	The Trip.com Prior Art discloses the method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart. *See* DFNDT000923.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		 REDACTEI 2.2. Linking and Joint Promotion of Internet Sites. 2.2.1. THETRIP.COM shall: (a) provide a link from the Resources on the Net Section or similar Section of THETRIP.COM's Internet service to a designated page on the SUN-TIMES Internet Sites, which link shall be branded with the trademarks and logos of the SUN-TIMES and its affiliate newspapers; (b) pay SUN-TIMES of all commissions earned and collected from Transactions. These commissions will be paid quarterly; and (c) subject to the SUN-TIMES' prior written approval in each instance, host on THETRIP.COM Internet Site travel editorial and other similar content originating from the SUN-TIMES Internet Sites and print edition. Following any such content, a text link will link to a jump page on the SUN-TIMES Internet Sites with an offer to subscribe to the SUN-TIMES' print edition. 2.2.2. SUN-TIMES shall; (a) provide for placement of a travel button on the SUN-TIMES Internet Site home page, and other appropriate departments within the SUN-TIMES Internet Site, linking to THETRIP.COM Internet Site; (b) be allowed to place a horizontal frame only, containing the trademarks and logos of the SUN-TIMES and its affiliate newspapers, flush across the top of THETRIP.COM Internet Site. Said frame shall be no higher than 60 pixels, and shall contain no third party advertising; (c) create a co-branded travel home page and additional co-branded jump pages from the home page for each department within THETRIP.COM from which it links. It will be the responsibility of the SUN-TIMES to secure a unique URL from THETRIP.COM for each department, allowing for the complete tracking of Transactions. Said travel home page and jump pages shall rest on the SUN-TIMES Internet Site; and (d) upon the Agreement of both Parties, use originally created editorial content from THETRIP.COM Internet Site for print within the SUN-TIMES print edition. Said editorial content shall bear the by-line "from www.thetrip.com" and shall at the end of the content provide for a URL pointing to a framed version of THETRIP.COM Internet Site. 2.2.3. The SUN-TIMES shall sell and place all commercial advertising and keep all revenues generated from its travel home page and jump pages, and THETRIP.COM shall sell and place all commercial advertising and keep all revenues generated from its Internet Site except for the SUN-TIMES share of revenue from Transactions.
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	On information and belief, the Trip.com systems predating the critical date of this asserted patent included the method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages;	*See* 1(a)-1(b), *supra.*
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	*See* 1(a)-1(b), *supra.*
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	*See* 1(a)-1(b), *supra.*
	(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* 1(a)-1(b), *supra.*
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to:	*See* 1(a)-1(c), *supra.*
	(i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages;	*See* 1(a)-1(c), *supra.*
	(ii) automatically identify as the source page the one of the first web pages on which the link has been activated;	*See* 1(a)-1(c), *supra.*
	(iii) in response to identification of the source page, automatically retrieve the stored	*See* 1(a)-1(c), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
	data corresponding to the source page; and	
	(iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays:	*See* 1(a)-1(c), *supra.*
	(A) information associated with the commerce object associated with the link that has been activated, and	*See* 1(a)-1(c), *supra.*
	(B) the plurality of visually perceptible elements visually corresponding to the source page.	*See* 1(a)-1(c), *supra.*
20.	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of:	*See* 1, *supra.*
	(a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated;	*See* 1(a)(i), *supra.*
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	*See* 1(a)(ii), *supra.*
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	The Trip.com Prior Art discloses that each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants. **"2.2 Linking and Joint Promotion of Internet Sites.** **2.2.2** SUN-TIMES shall; (a) provide for placement of a travel button on the SUN-TIMES Internet Site home page, and other appropriate departments within the SUN-TIMES Internet

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		Site, linking to THETRIP.COM Internet Site; (b) be allowed to place a horizontal frame only, containing the trademarks and logos of the SUN-TIMES and its affiliate news papers, flush across the top ofTHETRIP.COM Internet Site. ... Said travel home page and jump pages shall rest on the SUN-TIMES Internet Site ..." [DFNDT000923]. **"2.2 Linking and Joint Promotion of Internet Sites.** 2.2.1 THETRIP.COM shall: (a) provide a link from the AltaVista TravelZone home page to the Co-Branded Site for the exclusive delivery of "Resort Packages" by TRAVELON; (b) guarantee the number of TRAVELON impressions on the AltaVista TravelZone home page according to the schedule in Exhibit B..." [DFNDT000933]. "Exhibit B. Guaranteed impressions on the Alta Vista TravelZone home page And fee payment structure to THETRIP.COM. 'Resort Packages' link to Co-branded site shall be placed on the home page of the Alta Vista Travel Zone. In addition, Link to Co-branded site shall be placed on the Travel Result Pages that originate from a travel search originating from the AltaVista Travel Zone." [DFNDT000942].
	(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another;	*See* 1(a)(iii), *supra.*
	(b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then	*See* 1(a)-1(c)
	(c) automatically computer-generating and transmitting to the web browser a second web page that includes:	The Trip.com Prior Art discloses automatically computer-generating and transmitting to the web browser a second web page. On information and belief, the Trip.com systems predating the critical date of this asserted patent received an activation of the provided link from the visitor computer, served to the visitor computer an e commerce supported page with a "look and feel" corresponding to the captured "look and feel" description of the host website associated with the provided link and with content based on the commerce object associated with the provided link.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		See for example: **"2.2 Linking and Joint Promotion of Internet Sites.** **2.2.1** THETRIP.COM shall: (a) provide a link from the resources on the Net Section or similar Section of THETRIP.COM's Internet service to a designated page on the SUN-TIMES Internet Sites, which link shall be branded with the trademarks and logos of the SUN-TIMES and its affiliate newspapers..." Exhibit A. Placement of "Resort Packages" button and other links from the AltaVista TravelZone to Co-Branded Site. Link via button to Co-Branded Site shall be placed at the sole discretion ofTHETRIP.COM on AltaVista's TravelZone home page at http://search.thetrip.com/. The button itself shall not be branded at the AltaVista's TravelZone home page level, but shall be named "Resort Packages" or similar langnage to describe the category of services offered by TRAVELON. TRAVELON's brand name shall appear at the level subsequent to Alta Vista's Travel Zone home page, after the user has clicked on the "Resort Packages" button." [DFNDT000941].
	(i) information associated with the commerce object associated with the link that has been activated, and	The Trip.com Prior Art discloses that the second web page includes information associated with the commerce object associated with the link that has been activated. On information and belief, the Trip.com systems predating the critical date of this asserted patent received an activation of the provided link from the visitor computer, served to the visitor computer an e commerce supported page with a "look and feel" corresponding to the captured "look and feel" description of the host website associated with the provided link and with content based on the commerce object associated with the provided link. See for example: **"2.2 Linking and Joint Promotion of Internet Sites.** **2.2.1** THETRIP.COM shall: (a) provide a link from the resources on the Net Section or similar Section of THETRIP.COM's Internet service to a designated page on the SUN-

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
		TIMES Internet Sites, which link shall be branded with the trademarks and logos of the SUN-TIMES and its affiliate newspapers..." Exhibit A. Placement of "Resort Packages" button and other links from the AltaVista TravelZone to Co-Branded Site. Link via button to Co-Branded Site shall be placed at the sole discretion ofTHETRIP.COM on AltaVista's TravelZone home page at http://search.thetrip.com/. The button itself shall not be branded at the AltaVista's TravelZone home page level, but shall be named "Resort Packages" or similar langnage to describe the category of services offered by TRAVELON. TRAVELON's brand name shall appear at the level subsequent to Alta Vista's Travel Zone home page, after the user has clicked on the "Resort Packages" button." [DFNDT000941].
	(ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	*See* 1(c)(ii), *supra*.
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra*.
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra*.
24	The computer-readable memory of claim 20,	*See* 13-16, *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in the Trip.com Prior Art
	(i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and	*See* 13-14, *supra*.
	(ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	*See* 15-16, *supra*.
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra*.

Comparison of the U.S. Patent No. 7,818,399 and U.S. Patent No. 6,016,504 "Method and system for tracking the purchase of a product and services over the Internet "[1]

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, U.S. Patent No. 6,016,504 anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
1	A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	The '504 patent discloses a method of an outsource provider serving web pages offering commercial opportunities.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated;	The '504 patent discloses automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated. • "The Catalog_Browser routine allows a VO representative to browse through catalog Web pages supplied by the merchant... Items for sale are described and listed along with URLs corresponding to the order Web page that the merchant will supply to a customer linking through a VO Web page to the merchant site in order to purchase the item. The VO may incorporate items into the VO Web pages by including the URLs obtained from the merchant's catalog as hot links in the VO Web pages." Col. 10:41-50. • Claim 27. A method in a computer system for establishing a relationship between a virtual outlet and a merchant so that the virtual outlet can offer to a customer over a network, a product that is for sale by the merchant; the virtual outlet, customer, and merchant each having a computer; the method comprising: • establishing a database of information at the merchant computer, the database including an identification of the virtual outlet and representative interface aspects to be provided by the merchant computer to the customer computer; and • supplying from the merchant computer to the virtual outlet computer a link that identifies a merchant resource associated with the merchant

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[1] Unless noted, all citations in this chart are to U.S. Patent No. 6,016,504 "Method and system for tracking the purchase of a product and services over the Internet" by Arnold, Bennett, et al. (filed Aug. 28, 1996, issued Jan. 18, 2000). [DFNDT0000077-0000114]

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		computer and that uniquely identifies the virtual outlet; wherein the virtual outlet computer supplies the link to the customer computer, when the customer computer uses the link to access the merchant resource, the merchant computer provides the merchant resource to the customer computer in a manner customized to the virtual outlet, such manner being based on the database of information and identifying the virtual outlet that provided the link to the customer computer.
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	The '504 patent discloses that each of the first web pages belongs to one of a plurality of web page owners. "To purchase a product, a customer would first view a Web page provided by a VO. The VO Web page may show a graphical image of various products, such as a picture of a pair of blue jeans or a picture of a shirt. Each image has a URL associated with it that is a hot link to a Web page provided by the Web site of the merchant of the product. If a customer wishes to find more information about a product (e.g., cost or size information) or to purchase the product, the customer simply selects the image of the product displayed. When the image is selected, the customer computer then requests access to the merchant Web page identified by the associated URL. A merchant computer provides the merchant Web page to the customer computer. Once the customer computer receives the merchant Web page, it displays the Web page to the customer. Using the merchant Web page, the customer can view additional information about the product and purchase the product. After the order is placed, the merchant Web page directs the customer computer to redisplay a Web page of the VO. By redisplaying the VO Web page, the VO can help ensure that the customer will return to a Web page of the VO after the purchase of a product. " "The URL that is used by the customer computer to access the merchant Web page includes a unique identification of the VO. The merchant Web site uses this unique identification for several purposes. First, the merchant Web site can track through which VO an order is placed and, for example, can pay the retailer a commission on the sale. Second, the merchant computer can store a return URL that identifies a VO Web page in association with the unique VO

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		identification so that, upon completion of the order, the merchant's computer can direct the customer computer to the VO Web page identified by the return URL. Alternatively, rather than storing a return URL associated with the unique identification, a return URL can be sent as part of the URL used by the customer to access the merchant Web site. This URL is originally supplied to the customer as a hot link within the VO Web page that displays the image of the product that the customer is ordering from the merchant." Col. 5:42-6:12. "The establishing of a VO relationship solves problems of the existing compensation methods. First, because the merchant computer provides the customer with a return link to the VO's Web page, the VO can be relatively assured that the customer will return to the VO Web page after leaving the merchant Web page. Second, since the VO has access to the merchants' accounting Web pages, it can access information relating to its customers. Third, the URL supplied by the merchant to the VO to include in the VO Web page uniquely identifies the VO. For example, the merchant computer can have one Web page defined for each VO. When a customer accesses that Web page using the URL received from the VO, the merchant can track that it was a referral through the VO. Thus, the VO can be credited whenever the customer uses that URL even when a delayed purchase is made." Col. 6:50-64
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	The '504 patent discloses that each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants. When a customer **selects a product** to purchase or to view product information), the browser accesses the Web page for the merchant that sells the product. The Web page is identified by a URL (i.e., hotlink) associated with that product." Col. 7:41-45 (emphasis added) Claim 1 (emphasis added): A method for tracking a **purchase of a product**.... receiving from the customer at the customer computer **a selection of the product**....sending from the customer computer to the merchant computer a

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		request for the merchant Web page identified by the link associated with the **selected product**, the request including an indication of the virtual outlet...." "FIG. 25 displays an example display Web page from a VO, including a number of items that can be ordered by a customer." Col. 14:40-42. The "items" listed on the Figure 25 are actually product categories, including, for example, greeting cards. "If the customer chooses to order a greeting card, then the customer will link directly to the greeting card merchant, who prepares and sends to the customer the order Web page displayed in FIG. 26." Col. 14:42-43. The order Web page of Figure 26 corresponds to the "greeting cards" product category at the VO, and offers the customer a number of Card Choices to choose from. *See also* 1(a), *supra.*
	(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	The '504 patent discloses that the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other. "A virtual outlet relationship can be established and maintained with a merchant by accessing and interacting with the merchant VO set up Web page. This Web page contains links to additional Web pages that allow the prospective virtual outlet to conduct various transactions with the merchant. The prospective VO first establishes the relationship through a siguup procedure. The VO provides the merchant with various information such as the VO's name, street address, email address, and desigu information (e.g., color scheme) of the VO Web site. The merchant computer accepts the information, the merchant considers whether a VO relationship should be established, and, if the merchant decides to establish the relationship, the merchant computer sends a confirmation back to the prospective VO." Col. 6:12-25. "Although with the use of the merchant Web page it may be practical for a

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		representative of a VO to access accounting information from a few merchants, such use becomes impractical as the number of merchants to which a VO has established a relationship increases. It would be very cumbersome to access, for example, a hundred different merchant Web pages to access accounting information. Consequently, a VO computer in one embodiment has a multi-merchant accounting system (MMAC). The MMAC can automatically collect accounting information from each merchant to which the VO has established a relationship. For example, the MMAC can, during off hours, download information relating to daily transactions from the merchant Web sites. The MMAC can collate and present the information from the merchants to a representative of the VO." Col. 6:35-49. "The establishing of a VO relationship solves problems of the existing compensation methods. First, because the merchant computer provides the customer with a return link to the VO's Web page, the VO can be relatively assured that the customer will return to the VO Web page after leaving the merchant Web page. Second, since the VO has access to the merchants' accounting Web pages, it can access information relating to its customers. Third, the URL supplied by the merchant to the VO to include in the VO Web page uniquely identifies the VO. For example, the merchant computer can have one Web page defined for each VO. When a customer accesses that Web page using the URL received from the VO, the merchant can track that it was a referral through the VO. Thus, the VO can be credited whenever the customer uses that URL even when a delayed purchase is made." Col. 6:50-64. "FIG. 11 displays a flow control diagram for the routine Billing, called from Process.sub.-- Menu.sub.-- Selection. Billing contains two parallel paths, one for changing the contract, and one for changing billing information. Because they are similar, only the latter will be described. In step 1101, Billing seeks an indication from the representative as to whether the representative wishes to change the contract or billing information or terminate the transaction. If the representative wishes to terminate, that indication is detected by Billing in step 1102 and Billing returns. Otherwise, Billing determines whether the billing

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		information or contract is to be changed, and, in step 1103, chooses the appropriate path. If the representative indicated a desire to change the billing information, Billing proceeds to step 1104 to request a billing Web page from the merchant that displays current billing information and allows the representative to change the information. In step 1105, Billing determines if the representative wishes simply to terminate the transaction after reviewing the billing information, and, if so, returns. Otherwise, in step 1106 Billing collects changes from the representative and sends the collected information via the Internet to the merchant computer. The merchant computer may return an error indication or an error Web page in response to receiving the information, in which case Billing displays an error screen in step 1108 after detecting the error in step 1107. Billing then returns. Alternatively, Billing could return to step 1101 in case of an error to allow the representative to re-input changes." Col 10:53-11:13.
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	The '504 patent discloses automatically retrieving from a storage coupled to the server pre stored data associated with the source page. *See* 7:41-8:6. "The Web page of FIG. 6 inputs information concerning the **appearance** that the VO expects for a merchant order Web page that will be displayed when a customer hot links through the VO to the merchant site. This information includes a URL for a graphics file that contains the VO's logo, the desired background color, and other such information." Col. 9:14-20 (emphasis added). "Where a request to display an order Web page corresponding to an item displayed by the VO on a VO Web page "has come to the merchant via a hotlink from the VO Web Page" the Merchant Order Processing Component "retrieves stored information supplied by the VO that allows the merchant computer to constrnct a description of **an order Web page that appears similar to a VO Web page** and uses the information to construct a description of an order Web page and send it to the customer[.] Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be stored entirely on the merchant

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		computer." Col. 14:15-27 (emphasis added). • Claim 1 (emphasis added): • [...] • Displaying at the customer computer the virtual outlet Web page; • Receiving from the customer at the customer computer a selection of the product; • Sending from the customer computer to the merchant **computer a request for the merchant Web page identified by the link associated with the selected product**, the request including an indication of the virtual outlet; • Receiving at the merchant computer the request for the merchant Web page; • **Upon receiving the request for the merchant Web page**, under control of the merchant computer, modifying the merchant Web page [...] • **Sending from the merchant computer the modified merchant Web page**... • Claim 2 (emphasis added): • The method of claim 1 **wherein the merchant computer maintains a database of information describing a desired layout of the merchant Web page** when the merchant Web page is accessed through the virtual outlet Web page and wherein the merchant computer customizes the merchant Web page in accordance with the information. • Claim 3: • The method of claim 2 wherein the information includes a name and logo of the virtual outlet.• Claim 4 • The method of claim 2 wherein the information includes preferred coloring of the merchant Web page. • Claim 5 • The method of claim 1 wherein the links are universal resource locators.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		• Claim 13 (emphasis added). • A method for providing a second computer with access to information provided by a third computer through a resource that is similar in appearance to a resource provided by a first computer; the first, second, and third computers being interconnected; the method comprising: • [...] • under control of the third computer, customizing the resource identified by the received link based on the entity identified in the received link; and • sending to the second computer the customized resource so that the second computer can display the customized resource, the customized resource having an overall appearance similar to the displayed resources of the first computer. • Claim 14 • The method of claim 13 wherein the first computer is a virtual outlet computer, the second computer is a customer computer, and the third computer is a merchant computer. • Claim 15 • The method of claim 14 wherein the step of customizing includes customization options provided by the virtual outlet. • Claim 16 • The method of claim 15 wherein the customization option is a virtual outlet logo. • Claim 17 • The method of claim 15 wherein the customization option is a color. • Claim 18 • The method of claim 15 wherein the customization option is a font. • Claim 22 • The method of claim 14 wherein the resource identified by the received link is a Web page that allows a customer to purchase a product of a merchant. • Claim 27

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		• A method in a computer system for establishing a relationship between a virtual outlet and a merchant so that the virtual outlet can offer to a customer over a network, a product that is for sale by the merchant; the virtual outlet, customer, and merchant each having a computer; the method comprising: • establishing a database of information at the merchant computer, the database including an identification of the virtual outlet and representative interface aspects to be provided by the merchant computer to the customer computer; and • supplying from the merchant computer to the virtual outlet computer a link that identifies a merchant resource associated with the merchant computer and that uniquely identifies the virtual outlet; wherein the virtual outlet computer supplies the link to the customer computer, when the customer computer uses the link to access the merchant resource, the merchant computer provides the merchant resource to the customer computer in a manner customized to the virtual outlet, such manner being based on the database of information and identifying the virtual outlet that provided the link to the customer computer.
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes:	The '504 patent discloses automatically with the server computer generating and transmitting to the web browser a second web page. "Where a request to display an order Web page corresponding to an item displayed by the VO on a VO Web page "has come to the merchant via a hotlink from the VO Web Page" the Merchant Order Processing Component "retrieves stored information supplied by the VO that allows the merchant computer to constrnct a description of **an order Web page that appears similar to a VO Web page** and uses the information to construct a description of an order Web page and send it to the customer[.] Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be stored entirely on the merchant computer." Col. 14:15-27 (emphasis added). • Claim 1 (emphasis added): o [...]

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		o Displaying at the customer computer the virtual outlet Web page; o Receiving from the customer at the customer computer a **selection of the product**; o Sending from the customer computer to the merchant computer a **request for the merchant Web page identified by the link associated with the selected product**, the request including an indication of the virtual outlet; o Receiving at the merchant computer the request for the merchant Web page; o **Upon receiving the request for the merchant Web page**, under control of the merchant computer, modifying the merchant Web page [...] o **Sending from the merchant computer the modified merchant Web page**... • Claim 2 (emphasis added): o The method of claim 1 wherein the merchant computer maintains a database of information describing a desired layout of the merchant Web page when the merchant Web page is accessed through the virtual outlet Web page and **wherein the merchant computer customizes the merchant Web page in accordance with the information**. • Claim 3: o The method of claim 2 wherein the information includes a name and logo of the virtual outlet. • Claim 4 o The method of claim 2 wherein the information includes preferred coloring of the merchant Web page. • Claim 5 o The method of claim 1 wherein the links are universal resource locators.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		See also 1(b), *supra.* *See also* 3-6, *infra.*
	(i) information associated with the commerce object associated with the link that has been activated, and	The '504 patent discloses that the second webpage includes information associated with the commerce object associated with the link that has been activated. *See also* 1(b), *supra.* "Where a request to display an order Web page corresponding to an item displayed by the VO on a VO Web page "has come to the merchant via a hotlink from the VO Web Page" the Merchant Order Processing Component "retrieves stored information supplied by the VO that allows the merchant computer to construct a description of **an order Web page that appears similar to a VO Web page** and uses the information to construct a description of an order Web page and send it to the customer[.] Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be stored entirely on the merchant computer." Col. 14:15-27 (emphasis added). • Claim 1 (emphasis added): o [...] o Displaying at the customer computer the virtual outlet Web page; o Receiving from the customer at the customer computer a **selection of the product**; o Sending from the customer computer to the merchant computer a **request for the merchant Web page identified by the link associated with the selected product**, the request including an indication of the virtual outlet; o Receiving at the merchant computer the request for the merchant Web page; o **Upon receiving the request for the merchant Web page**, under control of the merchant computer, modifying the merchant Web page [...]

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		o **Sending from the merchant computer the modified merchant Web page**... • Claim 2 (emphasis added): o The method of claim 1 wherein the merchant computer maintains a database of information describing a desired layout of the merchant Web page when the merchant Web page is accessed through the virtual outlet Web page and **wherein the merchant computer customizes the merchant Web page in accordance with the information**. • Claim 3: o The method of claim 2 wherein the information includes a name and logo of the virtual outlet. • Claim 4 o The method of claim 2 wherein the information includes preferred coloring of the merchant Web page. • Claim 5 o The method of claim 1 wherein the links are universal resource locators. *See also* 1(b), *supra.* *See also* 3-6, *infra.*
	(ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	The '504 patent discloses that the second webpage includes a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page. "The Web page of FIG. 6 inputs information concerning the appearance that the VO expects for a merchant order Web page that will be displayed when a customer hot links through the VO to the merchant site. This information includes a URL for a graphics file that contains the VO's logo, the desired background color, and other such information." Col. 9:14-20. "The example confirmation Web page repeats certain of the supplied sign-up

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		information and displays the appearance requested by the representative for the merchant order Web page, including colors and fonts." Col. 9:46-50. "[The Merchant Sign-up Component] prepares a confirmation Web page in the style specified by the VO for order processing Web pages, including specified logos, graphics, colors, and text fonts[.]" Col. 12:59-65. "[Software routines] support processes by which the VO changes the appearance of order Web pages displayed by the merchant to customers." Col. 13:67-14:2. • Claim 27 (emphasis added). A method in a computer system for establishing a relationship between a virtual outlet and a merchant so that the virtual outlet can offer to a customer over a network, a product that is for sale by the merchant; the virtual outlet, customer, and merchant each having a computer; the method comprising: o **establishing a database of information at the merchant computer, the database including an** identification of the virtual outlet **and representative interface aspects to be provided by the merchant computer to the customer computer**; and o supplying from the merchant computer to the virtual outlet computer a link that identifies a merchant resource associated with the merchant computer and that uniquely identifies the virtual outlet; wherein the virtual outlet computer supplies the link to the customer computer, when the customer computer uses the link to access the merchant resource, the merchant computer provides the merchant resource to the customer computer in a manner customized to the virtual outlet, **such manner being based on the database of information** and identifying the virtual outlet that provided the link to the customer computer. The '504 patent also discloses storing HTML code corresponding to the look and feel description at a second website (Merchant):

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		"FIG. 16 lists example information returned by the VO to the merchant during the sigu-up process." Col. 12:55-56. The information in Figure 16 includes: URL of logos to display on order pages; URL for graphics for background; colors for various parts of screen; fonts for text; other characteristics for HTML display; etc. "In step 1509, sigu-up_Request **permanently** stores the sigu-up information on the merchant computer and flags the stored information for review by a representative of the merchant computer." Col. 13:2-5 (emphasis added). "Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be **stored entirely on the merchant computer**." Col. 14:24-27 (emphasis added). The information stored, as described in Figure 16, may include a "navigation bar," "banner advertising" and "other characteristics for HTML display." "FIG. 24 displays a flow control diagram for the routine Order.sub.-- Processing.sub.-- Request. In step 2401, Order.sub.-- Processing.sub.-- Request verifies that the VO identifier received by the merchant by the requesting customer is valid. If not, Order.sub.-- Processing.sub.-- Request sends an error screen to the customer in step 2404. Then, Order.sub.-- Processing.sub.-- Request determines what type of request has been made by a customer in steps 2402, 2406, 2408. If the request is to display an order Web page corresponding to an item displayed by the VO on a VO Web page, where the request has come to the merchant via a hotlink from the VO Web page, then Order.sub.-- Processing.sub.-- Request determines in step 2403 whether the item is valid, and, if so, retrieves stored information supplied by the VO that allows the merchant computer to construct an order Web page that appears similar to a VO Web page and uses the information to construct a description of an order Web page and send it to the customer in step 2405. Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be stored entirely on the merchant computer. If the request was made by the customer to display a confirmation Web page, then the merchant processes information supplied by the customer that was elicited from the customer by the order Web page, prepares a confirmation Web page which displays that information, and

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		sends the confirmation Web page to the customer in step 2407. Finally, in step 2408 if the request was to confirm the order, after the customer has reviewed the information displayed in the confirmation Web page, then in step 2409 Order.sub.-- Processing.sub.-- Request stores the information on the merchant computer to be subsequently used to send the ordered item to the customer and to bill the customer's account for the ordered item." Col 14:8-40.
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	The '504 patent discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page. Figure 25 shows an example Web page from a virtual outlet containing a logo and a navigation bar. Figure 26 shows a web page served by the Merchant containing the same logo and navigation bar.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	The '504 patent discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page. The Merchant web pages may be customized by the VO. Customizable elements include: • Desigu information (e.g., color scheme) of the VO Web site (Col. 6:21-22) • A page layout that is preferably a layout similar to that of the Web page for the [VO]. For example, the layout may indicate the contents of the banner, logo, and background color of the Web page. (Col. 7:58-62) • The VO's logo, the desired background color, and other such information. (Col. 9:19-20) • Colors and fonts. (Col. 9:49) • Logos, graphics, colors and text fonts. (Col. 12:64-65)
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	The '504 patent discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page. The Merchant web pages may be customized by the VO. Customizable elements

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		include: • Desigu information (e.g., color scheme) of the VO Web site (Col. 6:21-22) • A page layout that is preferably a layout similar to that of the Web page for the [VO]. For example, the layout may indicate the contents of the banner, logo, and background color of the Web page. (Col. 7:58-62) • The VO's logo, the desired background color, and other such information. (Col. 9:19-20) • Colors and fonts. (Col. 9:49) • Logos, graphics, colors and text fonts. (Col. 12:64-65)
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	The '504 patent discloses the method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page. The Merchant web pages may be customized by the VO. Customizable elements include: • Desigu information (e.g., color scheme) of the VO Web site (Col. 6:21-22) • A page layout that is preferably a layout similar to that of the Web page for the [VO]. For example, the layout may indicate the contents of the banner, logo, and background color of the Web page. (Col. 7:58-62) • The VO's logo, the desired background color, and other such information. (Col. 9:19-20) • Colors and fonts. (Col. 9:49) • Logos, graphics, colors and text fonts. (Col. 12:64-65) Figure 16 lists additional elements, including a navigation bar. *See also* Col. 9:19-20 (The VO's logo, the desired background color, and other such information.)
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of	The '504 patent discloses the method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical

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	merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	set of additional second web pages, each pertaining to a subset of the offerings in the catalog. "FIG.25 displays an example display Web page from a VO, including a number of items that can be ordered by a customer." Col.14:40-42. The "items" listed on the Figure 25 are actually product categories, including, for example, greeting cards. "If the customer chooses to order a greeting card, then the customer will link directly to the greeting card merchant, who prepares and sends to the customer the order Web page displayed in FIG. 26." Col. 14:42-43. The order Web page of Figure 26 corresponds to the "greeting cards" product category at the VO, and offers the customer a number of Card Choices to choose from.
8	The method of claim 1 wherein the second web page is generated dynamically.	The '504 patent discloses the method of claim 1 wherein the second web page is generated dynamically. "FIG. 1B illustrates the sequence of Web pages as seen by a customer of a VO. In this example, the name of the VO is "AcmeCyberstore;" its logo is a circle with lines; and it is offering to sell shirts, pants, and hats. The shirt and pants are sold through a merchant named "HaberDasher Company," and the hats are sold through a merchant named "MadHatter Company." When a customer accesses the Web page for the AcmeCyberstore, the customer would see Web page 1B10. This Web page contains banner 1B11 and logo 1B12, which identify the VO. In addition, this Web page contains the images 1B13, 1B14, and 1B15 of the products that are being offered for sale. When a customer selects a product to purchase (or to view product information), the browser accesses the Web page for the merchant that sells the product. The Web page is identified by a URL (i.e., hotlink) associated with that product. For example, the shirt image 1B13 may have the URL "http://WWW.HaberDasher.com/?AcmeCyberstore&AcmeCyberstore.com/home page&hat" associated with it. The portion "HaberDasher.com" identifies the merchant that sells the shirt, the portion "AcmeCyberstore" identifies the VO, and the portion "AcmeCyberstore.com/homepage" identifies the Web page to return to after the sale is

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		complete. (If a return Web page is not identified, the merchant can use a default return Web page for that virtual outlet.) When the merchant computer for the HaberDasher Company receives this URL, it accesses a database established when the AcmeCyberstore established a virtual outlet relationship with the HaberDasher Company. That database specifies a Web page layout that is preferably a layout similar to that of the Web page for the AcmeCyberstore. For example, the layout may indicate the contents of the banner, logo, and background color of the Web page. ***The merchant computer then dynamically creates a Web page (e.g., an HTML file) in accordance with the layout and associates the return URL with an icon on the Web page. The merchant computer then sends that Web page to the customer computer.*** The customer computer displays the merchant Web page 1B20, 1B30. The merchant Web page may allow the representative to browse through various other Web pages to collect information (e.g., delivery address or credit card number) relating to the purchase. When the customer has completed the purchase, the customer can select the return icon to return to the Web page IB40 for the AcmeCyberstore VO." Col. 7:30-8:6.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	The '504 patent discloses the method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page. "To purchase a product, a customer would first view a Web page provided by a VO. The VO Web page may show a graphical image of various products, such as a picture of a pair of blue jeans or a picture of a shirt. Each image has a URL associated with it that is a hot link to a Web page provided by the Web site of the merchant of the product. If a customer wishes to find more information about a product (e.g., cost or size information) or to purchase the product, the customer simply selects the image of the product displayed. When the image is selected, the customer computer then requests access to the merchant Web page identified by the associated URL. A merchant computer provides the merchant Web page to the customer computer. Once the customer computer receives the merchant Web page, it displays the Web page to the customer. Using the merchant Web page, the customer can view additional information about the product and purchase the product. After the order is placed, the merchant Web page directs the customer computer to redisplay a Web page of the VO.

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		By redisplaying the VO Web page, the VO can help ensure that the customer will return to a Web page of the VO after the purchase of a product. " "The URL that is used by the customer computer to access the merchant Web page includes a unique identification of the VO. The merchant Web site uses this unique identification for several purposes. First, the merchant Web site can track through which VO an order is placed and, for example, can pay the retailer a commission on the sale. Second, the merchant computer can store a return URL that identifies a VO Web page in association with the unique VO identification so that, upon completion of the order, the merchant's computer can direct the customer computer to the VO Web page identified by the return URL. Alternatively, rather than storing a return URL associated with the unique identification, a return URL can be sent as part of the URL used by the customer to access the merchant Web site. This URL is originally supplied to the customer as a hot link within the VO Web page that displays the image of the product that the customer is ordering from the merchant." Col. 5:41-6:12.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	The '504 patent discloses the method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed. "The virtual outlet component of the VO provides Web pages to customers that comprise a collection of text or images that describe or represent various products or services that the customer can purchase. Those text descriptions or images that represent items to be ordered from a merchant are associated on the VO Web page with hot links that allow a customer to directly access a merchant's order Web page. The hot links include, in the scheme-specific portion of the URL, sufficient information for the merchant to identify the VO through which the customer accessed the merchant Web page, so that the merchant can credit to the VO an appropriate commission if a sale is made, and so that the merchant can return to the customer computer a reference to the appropriate VO Web page, which should be displayed to the customer once the order transaction is complete." Col. 8:9-24. "The present invention is directed to a method for tracking a purchase by a customer of a product supplied by a merchant through what is referred to as a "virtual outlet,"

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		where the merchant, virtual outlet owner, and customer each have a computer connected through a network and where the purchase is conducted as a transaction over the network. To purchase the product, the customer requests a Web page from the virtual outlet computer. The requested Web page typically has a visual indication of the product and a link associated with the product. The link identifies a merchant Web page available from the merchant computer, identifies the virtual outlet, and identifies a return Web page of the virtual outlet. When the customer computer receives the requested Web page from the virtual outlet, it displays the Web page. When the customer selects the product to purchase from the displayed Web page, the customer computer sends to the merchant computer a request for the merchant Web page identified by the link associated with the product. The merchant computer modifies the merchant Web page to contain a return link so that upon completion of the purchase, the customer computer displays the return Web page of the virtual outlet identified by the link and sends to the customer computer the modified merchant Web page. The modified merchant Web page is displayed at the customer computer to allow the customer to purchase the product from the merchant. The merchant computer credits the virtual outlet for the purchase. Upon completion of the purchase, the customer computer displays the return Web page identified by the return link in the modified merchant Web page." Col. 4:3-32.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*See* 1(c)(ii), *supra*.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	The '504 patent discloses the method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page. Where a request to display an order Web page corresponding to an item displayed by the VO on a VO Web page "has come to the merchant via a hotlink from the VO Web Page" the Merchant Order Processing Component "retrieves stored information supplied by the VO that allows the merchant computer to constrnct a description of **an order Web page that appears similar to a VO Web page** and uses the information to construct a description of an order Web page and send it to the customer[.] Some information, including the VO logo, may be obtained from the VO by accessing VO

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		files using stored URLs. Other information may be stored entirely on the merchant computer." Col. 14:15-27 (emphasis added). • Claim 1 (emphasis added): o [...] o Displaying at the customer computer the virtual outlet Web page; o Receiving from the customer at the customer computer a **selection of the product**; o Sending from the customer computer to the merchant computer a **request for the merchant Web page identified by the link associated with the selected product**, the request including an indication of the virtual outlet; o Receiving at the merchant computer the request for the merchant Web page; o **Upon receiving the request for the merchant Web page**, under control of the merchant computer, modifying the merchant Web page [...] o Sending from the merchant computer the modified merchant Web page... • Claim 2 (emphasis added): o The method of claim 1 wherein the merchant computer maintains a database of information describing a desired layout of the merchant Web page when the merchant Web page is accessed through the virtual outlet Web page and **wherein the merchant computer customizes the merchant Web page in accordance with the information.** • Claim 3: o The method of claim 2 wherein the information includes a name and logo of the virtual outlet. • Claim 4 o The method of claim 2 wherein the information includes preferred

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		coloring of the merchant Web page. • Claim 5 o The method of claim 1 wherein the links are universal resource locators. • Claim 27 (emphasis added). o A method in a computer system for establishing a relationship between a virtual outlet and a merchant so that the virtual outlet can offer to a customer over a network, a product that is for sale by the merchant; the virtual outlet, customer, and merchant each having a computer; the method comprising: o establishing **a database of information** at the merchant computer, the database including an identification of the virtual outlet and **representative interface aspects** to be provided by the merchant computer to the customer computer; and o **supplying from the merchant computer to the virtual outlet computer a link that identifies a merchant resource associated with the merchant computer** and that uniquely identifies the virtual outlet; wherein the virtual outlet computer supplies the link to the customer computer, when the customer computer uses the link to access the merchant resource, the merchant computer provides the merchant resource to the customer computer in a manner customized to the virtual outlet, such manner being based on the database of information and identifying the virtual outlet that provided the link to the customer computer.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	The '504 patent discloses the method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart. The merchant Web page may allow the representative to browse through various other Web pages to collect information (e.g., delivery address or credit card number)

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		relating to the purchase. Col.7:67-8:3. FIG. 24 displays a flow control diagram for the routine Order.sub.-- Processing.sub.-- Request. In step 2401, Order.sub.-- Processing.sub.-- Request verifies that the VO identifier received by the merchant by the requesting customer is valid. If not, Order.sub.-- Processing.sub.-- Request sends an error screen to the customer in step 2404. Then, Order.sub.-- Processing.sub.-- Request determines what type of request has been made by a customer in steps 2402, 2406, 2408. If the request is to display an order Web page corresponding to an item displayed by the VO on a VO Web page, where the request has come to the merchant via a hotlink from the VO Web page, then Order.sub.-- Processing.sub.-- Request determines in step 2403 whether the item is valid, and, if so, retrieves stored information supplied by the VO that allows the merchant computer to ***construct an order Web page*** that appears similar to a VO Web page and uses the information to construct a description of an order Web page and send it to the customer in step 2405. Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be stored entirely on the merchant computer. If the request was made by the customer to display a confirmation Web page, then the merchant processes information supplied by the customer that was elicited from the customer by the order Web page, prepares a confirmation Web page which displays that information, and sends the confirmation Web page to the customer in step 2407. Finally, in step 2408 if the request was to confirm the order, after the customer has reviewed the information displayed in the confirmation Web page, then in step 2409 Order.sub.-- Processing.sub.-- Request stores the information on the merchant computer to be subsequently used to send the ordered item to the customer and to bill the customer's account for the ordered item. Col 14:8-40.
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	The '504 patent discloses the method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart. The merchant Web page may allow the representative to browse through various other Web pages to collect information (e.g., delivery address or credit card number) relating to the purchase. Col.7:67-8:3.

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15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	The '504 patent discloses the method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link. The merchant Web page may allow the representative to browse through various other Web pages to collect information (e.g., delivery address or credit card number) relating to the purchase. Col.7:67-8:3.
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 9-10, *supra*.
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	The '504 patent discloses the method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart. The merchant Web page may allow the representative to browse through various other Web pages to collect information (e.g., delivery address or credit card number) relating to the purchase. Col.7:67-8:3. FIG. 24 displays a flow control diagram for the routine Order.sub.-- Processing.sub.-- Request. In step 2401, Order.sub.-- Processing.sub.-- Request verifies that the VO identifier received by the merchant by the requesting customer is valid. If not, Order.sub.-- Processing.sub.-- Request sends an error screen to the customer in step 2404. Then, Order.sub.-- Processing.sub.-- Request determines what type of request has been made by a customer in steps 2402, 2406, 2408. If the request is to display an order Web page corresponding to an item displayed by the VO on a VO Web page, where the request has come to the merchant via a hotlink from the VO Web page, then Order.sub.-- Processing.sub.-- Request determines in step 2403 whether the item is valid, and, if so, retrieves stored information supplied by the VO that allows the merchant computer to ***construct an order Web page*** that appears similar to a VO Web

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		page and uses the information to construct a description of an order Web page and send it to the customer in step 2405. Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be stored entirely on the merchant computer. If the request was made by the customer to display a confirmation Web page, then the merchant processes information supplied by the customer that was elicited from the customer by the order Web page, prepares a confirmation Web page which displays that information, and sends the confirmation Web page to the customer in step 2407. Finally, in step 2408 if the request was to confirm the order, after the customer has reviewed the information displayed in the confirmation Web page, then in step 2409 Order.sub.-- Processing.sub.-- Request stores the information on the merchant computer to be subsequently used to send the ordered item to the customer and to bill the customer's account for the ordered item. Col 14:8-40.
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	The '504 patent discloses the method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages. • *See* Col. 7:54 - 8:6. • Claim 1 (emphasis added): o […] o Sending from the customer computer to the merchant computer **a request for the merchant Web page identified by the link associated with the selected product**, the request including an indication of the virtual outlet; o Receiving at the merchant computer the request for the merchant Web page; o **Upon receiving the request for the merchant Web page**, under control of the merchant computer, modifying the merchant Web page […] o **Sending from the merchant computer the modified merchant Web page**... • Claim 2 (emphasis added): o The method of claim 1 **wherein the merchant computer maintains a**

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		database of information describing a desired layout of the merchant Web page when the merchant Web page is accessed through the virtual outlet Web page and wherein the merchant computer customizes the merchant Web page in accordance with the information. • Claim 27 (emphasis added). A method ... comprising: ○ establishing **a database of information** at the merchant computer, the database **including** an identification of the virtual outlet and **representative interface aspects** to be provided by the merchant computer to the customer computer... • "FIG. 16 lists example information returned by the VO to the merchant during the sign-up process." Col. 12:55-56. The information in Fignre 16 includes: URL of logos to display on order pages; URL for graphics for background; colors for various parts of screen; fonts for text; other characteristics for HTML display; etc. • "In step 1509, sign-up_Request **permanently stores** the sign-up information on the merchant computer and flags the stored information for review by a representative of the merchant computer." Col. 13:2-5 (emphasis added). The Merchant Order Processing Component "retrieves **stored information supplied by the VO** that allows the **merchant computer** to constrnct a description of an order Web page that appears similar to a VO Web page and uses the information to construct a description of an order Web page and send it to the customer[.] Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be **stored entirely on the merchant computer**." Col. 14:15-27 (emphasis added).
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, preamble, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages;	The '504 patent discloses a system comprising a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages.

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		The '504 patent discloses storing a look and feel description associated with a first website (VO) in a data store (Database) associated with a second website (Merchant): • *See* Col. 7:54 - 8:6. • Claim 1 (emphasis added): ○ [...] ○ Sending from the customer computer to the merchant computer a **request for the merchant Web page identified by the link associated with the selected product**, the request including an indication of the virtual outlet; ○ Receiving at the merchant computer the request for the merchant Web page; ○ **Upon receiving the request for the merchant Web page**, under control of the merchant computer, modifying the merchant Web page [...] ○ **Sending from the merchant computer the modified merchant Web page**... • Claim 2 (emphasis added): ○ The method of claim 1 **wherein the merchant computer maintains a database of information describing a desired layout of the merchant Web page** when the merchant Web page is accessed through the virtual outlet Web page and wherein the merchant computer customizes the merchant Web page in accordance with the information. • Claim 27 (emphasis added). A method ... comprising: ○ establishing **a database of information** at the merchant computer, the database **including** an identification of the virtual outlet and **representative interface aspects** to be provided by the merchant computer to the customer computer... • "FIG. 16 lists example information returned by the VO to the merchant during the sign-up process." Col. 12:55-56. The information in Fignre 16 includes: URL of logos to display on order pages; URL for graphics for background; colors for various parts of screen; fonts for text; other characteristics for HTML display; etc. • "In step 1509, sign-up_Request **permanently stores** the sign-up information

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		on the merchant computer and flags the stored information for review by a representative of the merchant computer." Col. 13:2-5 (emphasis added). The Merchant Order Processing Component "retrieves **stored information supplied by the VO** that allows the **merchant computer** to constrnct a description of an order Web page that appears similar to a VO Web page and uses the information to construct a description of an order Web page and send it to the customer[.] Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be **stored entirely on the merchant computer**." Col. 14:15-27 (emphasis added). *See also* 1(a)(i), *supra.*
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	*See* 1(a)(i), *supra.*
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	The '504 patent discloses that each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants "When a customer **selects a product** to purchase or to view product information), the browser accesses the Web page for the merchant that sells the product. The Web page is identified by a URL (i.e., hotlink) associated with that product." Col. 7:41-45 (emphasis added). "The Catalog_Browser routine allows a VO representative to browse through catalog Web pages supplied by the merchant... Items for sale are described and listed along with URLs corresponding to the order Web page that the merchant will supply to a customer linking through a VO Web page to the merchant site in order to purchase the item. The VO may incorporate items into the VO Web pages by including the URLs obtained from the merchant's catalog as hot links in the VO Web pages." Col. 10:41-50. "FIG. 25 displays an example display Web page from a VO, including a number of

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		items that can be ordered by a customer." Col. 14:40-42. The "items" listed on the Fignre 25 are actually product categories, including, for example, greeting cards. "If the customer chooses to order a greeting card, then the customer will link directly to the greeting card merchant, who prepares and sends to the customer the order Web page displayed in FIG. 26" Col. 14:42-43. The order Web page of Fignre 26 corresponds to the "greeting cards" product category at the VO, and offers the customer a number of Card Choices to choose from. Claim 1 (emphasis added): ○ A method for tracking a **purchase of a product**.... ○ [...] ○ Receiving from the customer at the customer computer a **selection of the product**; ○ Sending from the customer computer to the merchant computer a request for the merchant Web page identified by the link
	(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* 1(a)(iii), *supra.*
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to:	*See* 1(a)-1(c), *supra.*
	(i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages;	The '504 patent discloses that the computer server is programmed to receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages. Where a request to display an order Web page corresponding to an item displayed by the VO on a VO Web page "has come to the merchant via a hotlink from the VO Web Page" the Merchant Order Processing Component "retrieves stored information

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		supplied by the VO that allows the merchant computer to constrnct a description of **an order Web page that appears similar to a VO Web page** and uses the information to construct a description of an order Web page and send it to the customer[.] Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be stored entirely on the merchant computer." Col. 14:15-27 (emphasis added). • Claim 1 (emphasis added): o […] o Displaying at the customer computer the virtual outlet Web page; o Receiving from the customer at the customer computer a **selection of the product**; o Sending from the customer computer to the merchant computer a **request for the merchant Web page identified by the link associated with the selected product**, the request including an indication of the virtual outlet; o Receiving at the merchant computer the request for the merchant Web page; o **Upon receiving the request for the merchant Web page**, under control of the merchant computer, modifying the merchant Web page [...] o **Sending from the merchant computer the modified merchant Web page**... • Claim 2 (emphasis added): o The method of claim 1 wherein the merchant computer maintains a database of information describing a desired layout of the merchant Web page when the merchant Web page is accessed through the virtual outlet Web page and **wherein the merchant computer customizes the merchant Web page in accordance with the information**. • Claim 3: o The method of claim 2 wherein the information includes a name and logo of the virtual outlet. • Claim 4

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		o The method of claim 2 wherein the information includes preferred coloring of the merchant Web page. • Claim 5 o The method of claim 1 wherein the links are universal resource locators.
	(ii) automatically identify as the source page the one of the first web pages on which the link has been activated;	*See* 1(a), *supra.*
	(iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and	The '504 patent discloses that the computer server is programmed to in response to identification of the source page, automatically retrieve the stored data corresponding to the source page. "FIG. 1B illustrates the sequence of Web pages as seen by a customer of a VO. In this example, the name of the VO is "AcmeCyberstore;" its logo is a circle with lines; and it is offering to sell shirts, pants, and hats. The shirt and pants are sold through a merchant named "HaberDasher Company," and the hats are sold through a merchant named "MadHatter Company." When a customer accesses the Web page for the AcmeCyberstore, the customer would see Web page 1B10. This Web page contains banner 1B11 and logo 1B12, which identify the VO. In addition, this Web page contains the images 1B13, 1B14, and 1B15 of the products that are being offered for sale. When a customer selects a product to purchase (or to view product information), the browser accesses the Web page for the merchant that sells the product. The Web page is identified by a URL (i.e., hotlink) associated with that product. For example, the shirt image 1B13 may have the URL "http://WWW.HaberDasher.com/?AcmeCyberstore&AcmeCyberstore.com/home page&hat" associated with it. The portion "HaberDasher.com" identifies the merchant that sells the shirt, the portion "AcmeCyberstore" identifies the VO, and the portion "AcmeCyberstore.com/homepage" identifies the Web page to return to after the sale is complete. (If a return Web page is not identified, the merchant can use a default return Web page for that virtual outlet.) When the merchant computer for the HaberDasher Company receives this URL, it accesses a database established when the AcmeCyberstore established a virtual outlet relationship with the HaberDasher Company. That database specifies a Web page layout that is preferably a layout similar

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		to that of the Web page for the AcmeCyberstore. For example, the layout may indicate the contents of the banner, logo, and background color of the Web page. ***The merchant computer then dynamically creates a Web page (e.g., an HTML file) in accordance with the layout and associates the return URL with an icon on the Web page. The merchant computer then sends that Web page to the customer computer.*** The customer computer displays the merchant Web page 1B20, 1B30. The merchant Web page may allow the representative to browse through various other Web pages to collect information (e.g., delivery address or credit card number) relating to the purchase. When the customer has completed the purchase, the customer can select the return icon to return to the Web page lB40 for the AcmeCyberstore VO." Col. 7:30-8:6.
	(iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays:	The '504 patent discloses using the data retrieved, automatically generate and transmit to the web browser a second web page. Where a request to display an order Web page corresponding to an item displayed by the VO on a VO Web page "has come to the merchant via a hotlink from the VO Web Page" the Merchant Order Processing Component "retrieves stored information supplied by the VO that allows the merchant computer to constrnct a description of **an order Web page that appears similar to a VO Web page** and uses the information to construct a description of an order Web page and send it to the customer[.] Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be stored entirely on the merchant computer." Col. 14:15-27 (emphasis added). • Claim 1 (emphasis added): o […] o Displaying at the customer computer the virtual outlet Web page; o Receiving from the customer at the customer computer a **selection of the product**; o Sending from the customer computer to the merchant computer a **request for the merchant Web page identified by the link associated with the selected product**, the request including an indication of the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		virtual outlet; o Receiving at the merchant computer the request for the merchant Web page; o **Upon receiving the request for the merchant Web page**, under control of the merchant computer, modifying the merchant Web page [...] o **Sending from the merchant computer the modified merchant Web page**... • Claim 2 (emphasis added): o The method of claim 1 wherein the merchant computer maintains a database of information describing a desired layout of the merchant Web page when the merchant Web page is accessed through the virtual outlet Web page and **wherein the merchant computer customizes the merchant Web page in accordance with the information**. • Claim 3: o The method of claim 2 wherein the information includes a name and logo of the virtual outlet. • Claim 4 o The method of claim 2 wherein the information includes preferred coloring of the merchant Web page. • Claim 5 The method of claim 1 wherein the links are universal resource locators.
	(A) information associated with the commerce object associated with the link that has been activated, and	The '504 patent discloses that the second web page displays information associated with the commerce object associated with the link that has been activated. Where a request to display an order Web page corresponding to an item displayed by the VO on a VO Web page "has come to the merchant via a hotlink from the VO Web Page" the Merchant Order Processing Component "retrieves stored information supplied by the VO that allows the merchant computer to constrnct a description of **an order Web page that appears similar to a VO Web page** and uses the information to construct a description of an order Web page and send it to the customer[.] Some information, including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be stored entirely on the merchant

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		computer." Col. 14:15-27 (emphasis added). • Claim 1 (emphasis added): o […] o Displaying at the customer computer the virtual outlet Web page; o Receiving from the customer at the customer computer a **selection of the product**; o Sending from the customer computer to the merchant computer a **request for the merchant Web page identified by the link associated with the selected product**, the request including an indication of the virtual outlet; o Receiving at the merchant computer the request for the merchant Web page; o **Upon receiving the request for the merchant Web page**, under control of the merchant computer, modifying the merchant Web page [...] o **Sending from the merchant computer the modified merchant Web page**... • Claim 2 (emphasis added): o The method of claim 1 wherein the merchant computer maintains a database of information describing a desired layout of the merchant Web page when the merchant Web page is accessed through the virtual outlet Web page and **wherein the merchant computer customizes the merchant Web page in accordance with the information**. • Claim 3: o The method of claim 2 wherein the information includes a name and logo of the virtual outlet. • Claim 4 o The method of claim 2 wherein the information includes preferred coloring of the merchant Web page. • Claim 5 The method of claim 1 wherein the links are universal resource locators.
	(B) the plurality of visually perceptible elements	*See* 1(c)(ii), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
	visually corresponding to the source page.	
20.	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of:	*See* 1, preamble, *supra.*
	(a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated;	*See* 1(a)(i), *supra.*
	(i) wherein each of the first web pages belongs to one of a plurality of web page owners;	*See* 1(a)(ii), *supra.*
	(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	The '504 patent discloses that each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants. When a customer **selects a product** to purchase or to view product information), the browser accesses the Web page for the merchant that sells the product. The Web page is identified by a URL (i.e., hotlink) associated with that product." Col. 7:41-45 (emphasis added). "The Catalog_Browser routine allows a VO representative to browse through catalog Web pages supplied by the merchant... Items for sale are described and listed along with URLs corresponding to the order Web page that the merchant will supply to a customer linking through a VO Web page to the merchant site in order to purchase the item. The VO may incorporate items into the VO Web pages by including the URLs obtained from the merchant's catalog as hot links in the VO Web pages." Col. 10:41-50. "FIG.25 displays an example display Web page from a VO, including a number of

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		items that can be ordered by a customer." Col.14:40-42. The "items" listed on the Fignre 25 are actually product categories, including, for example, greeting cards. "If the customer chooses to order a greeting card, then the customer will link directly to the greeting card merchant, who prepares and sends to the customer the order Web page displayed in FIG. 26." Col. 14:42-43. The order Web page of Fignre 26 corresponds to the "greeting cards" product category at the VO, and offers the customer a number of Card Choices to choose from • Claim 1 (emphasis added): o A method for tracking a **purchase of a product**.... o [...] o Receiving from the customer at the customer computer a **selection of the product**; o Sending from the customer computer to the merchant computer a request for the merchant Web page identified by the link associated with the **selected product**, the request including an indication of the virtual outlet.
	(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another;	*See* 1(a)(iii), *supra.*
	(b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then	The '504 patent discloses automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page. • *See* Col. 7:54 - 8:6. • Claim 1 (emphasis added): o […] o Sending from the customer computer to the merchant computer a **request for the merchant Web page identified by the link associated**

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		with the selected product, the request including an indication of the virtual outlet; o Receiving at the merchant computer the request for the merchant Web page; o **Upon receiving the request for the merchant Web page**, under control of the merchant computer, modifying the merchant Web page [...] o **Sending from the merchant computer the modified merchant Web page**... • Claim 2 (emphasis added): o The method of claim 1 **wherein the merchant computer maintains a database of information describing a desired layout of the merchant Web page** when the merchant Web page is accessed through the virtual outlet Web page and wherein the merchant computer customizes the merchant Web page in accordance with the information. • Claim 27 (emphasis added). A method ... comprising: o establishing **a database of information** at the merchant computer, the database **including** an identification of the virtual outlet and **representative interface aspects** to be provided by the merchant computer to the customer computer... • "FIG. 16 lists example information returned by the VO to the merchant during the sign-up process." Col. 12:55-56. The information in Fignre 16 includes: URL of logos to display on order pages; URL for graphics for background; colors for various parts of screen; fonts for text; other characteristics for HTML display; etc. • "In step 1509, sign-up_Request **permanently stores** the sign-up information on the merchant computer and flags the stored information for review by a representative of the merchant computer." Col. 13:2-5 (emphasis added). The Merchant Order Processing Component "retrieves **stored information supplied by the VO** that allows the **merchant computer** to constrnct a description of an order Web page that appears similar to a VO Web page and uses the information to construct a description of an order Web page and send it to the customer[.] Some information,

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
		including the VO logo, may be obtained from the VO by accessing VO files using stored URLs. Other information may be **stored entirely on the merchant computer**." Col. 14:15-27 (emphasis added).
	(c) automatically computer-generating and transmitting to the web browser a second web page that includes:	The '504 patent discloses automatically computer-generating and transmitting to the web browser a second web page. • "The Catalog_Browser routine allows a VO representative to browse through catalog Web pages supplied by the merchant... Items for sale are described and listed along with URLs corresponding to the order Web page that the merchant will supply to a customer linking through a VO Web page to the merchant site in order to purchase the item. The VO may incorporate items into the VO Web pages by including the URLs obtained from the merchant's catalog as hot links in the VO Web pages." Col. 10:41-50. • Claim 27. A method in a computer system for establishing a relationship between a virtual outlet and a merchant so that the virtual outlet can offer to a customer over a network, a product that is for sale by the merchant; the virtual outlet, customer, and merchant each having a computer; the method comprising: • establishing a database of information at the merchant computer, the database including an identification of the virtual outlet and representative interface aspects to be provided by the merchant computer to the customer computer; and • supplying from the merchant computer to the virtual outlet computer a link that identifies a merchant resource associated with the merchant computer and that uniquely identifies the virtual outlet; wherein the virtual outlet computer supplies the link to the customer computer, when the customer computer uses the link to access the merchant resource, the merchant computer provides the merchant resource to the customer computer in a manner customized to the virtual outlet, such manner being based on the database of information and identifying the virtual outlet that provided the link to the customer computer.
	(i) information associated with the commerce object associated with the link that has been	The '504 patent discloses that the second web page includes information associated with the commerce object associated with the link that has been activated.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
	activated, and	• "The Catalog_Browser routine allows a VO representative to browse through catalog Web pages supplied by the merchant... Items for sale are described and listed along with URLs corresponding to the order Web page that the merchant will supply to a customer linking through a VO Web page to the merchant site in order to purchase the item. The VO may incorporate items into the VO Web pages by including the URLs obtained from the merchant's catalog as hot links in the VO Web pages." Col. 10:41-50. • Claim 27. A method in a computer system for establishing a relationship between a virtual outlet and a merchant so that the virtual outlet can offer to a customer over a network, a product that is for sale by the merchant; the virtual outlet, customer, and merchant each having a computer; the method comprising: • establishing a database of information at the merchant computer, the database including an identification of the virtual outlet and representative interface aspects to be provided by the merchant computer to the customer computer; and • supplying from the merchant computer to the virtual outlet computer a link that identifies a merchant resource associated with the merchant computer and that uniquely identifies the virtual outlet; wherein the virtual outlet computer supplies the link to the customer computer, when the customer computer uses the link to access the merchant resource, the merchant computer provides the merchant resource to the customer computer in a manner customized to the virtual outlet, such manner being based on the database of information and identifying the virtual outlet that provided the link to the customer computer.
	(ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	*See* 1(c)(ii), *supra.*
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog	*See* 7, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
	having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra.*
24	The computer-readable memory of claim 20,	*See* 13-16, *supra.*
	(i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and	*See* 13-14, *supra.*
	(ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	*See* 15-16, *supra.*
25	The computer-readable memory of claim 20, wherein the visually perceptible elements	*See* 18, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in U.S. Patent No. 6,016,504 ("the '504 patent")
	displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	

Comparison of the U.S. Patent No. 7,818,399 and Sextoy.com Prior Art[1]

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[1] *Also see Cyber-Sex-Toys Main Menu …*, http://web.archive.org/web/19970607065349/http://www.sextoy.com/ (June 7, 1997 version of sextoy.com as archived by the Internet Archive (see note 4)) and related pages including: *Promote your own sextoy site*, http://web.archive.org/web/19970607065542/www.sextoy.com/yoursite/yoursite.html; and *The Agreement*, http://web.archive.org/web/19970607071136/www.sextoy.com/yoursite/agreemnt.html. *[DFNDT000952-000956]*

Cyber-Sex-Toys Main Menu …, http://web.archive.org/web/19970711063329/http://www.sextoy.com/ (July 11, 1997 version of sextoy.com as archived by the Internet Archive (see note 4)) and related pages including: *Promote your own sextoy site*, http://web.archive.org/web/19970711063513/www.sextoy.com/yoursite/yoursite.html; and *The Agreement*, http://web.archive.org/web/19970711072555/www.sextoy.com/yoursite/agreemnt.html. *[DFNDT000957-000961]*

Cyber-Sex-Toys…, http://web.archive.org/web/19971019015131/http://www.sextoy.com/ (October 19, 1997 version of sextoy.com as archived by the Internet Archive (see note 4)) and related pages including: *Promote your own sextoy site*, http://web.archive.org/web/19971019015325/www.sextoy.com/yoursite/yoursite.html; *Banners to Promote your own sextoy site*, http://web.archive.org/web/19971019020942/www.sextoy.com/yoursite/banner.html; and *The Agreement*, http://web.archive.org/web/19971019020936/www.sextoy.com/yoursite/agreemnt.html. *[DFNDT000962-000968]*

Cyber-Sex-Toys…, http://web.archive.org/web/19971210191027/http://www.sextoy.com/ (December 10, 1997 version of sextoy.com as archived by the Internet Archive (see note 4)). *[DFNDT000968-000969]*

Sextoys sex toys adult xxx …, http://web.archive.org/web/19981203052736/http://sextoy.com/ (December 3, 1998 version of sextoy.com as archived by the Internet Archive (see note 4)). *[DFNDT000970-000971]*

Free business opportunity to make money from commission with xxx adult sextoys, http://web.archive.org/web/19981205014933/www.sextoyfun.com/ (December 5, 1998 version of instructions for creating your own sextoys site as archived by the Internet Archive (see note 4)). [DFNDT000972-000973]

Sextoys sex toys adult xxx …, http://web.archive.org/web/19981207071712/http://www.sextoy.com/ (December 7, 1998 version of sextoy.com as archived by the Internet Archive (see note 4)). *[DFNDT000974-000975]*

Sextoys sex toys adult xxx …, http://web.archive.org/web/19981212021024/http://sextoy.com/ (December 12, 1998 version of sextoy.com as archived by the Internet Archive (see note 4)) and related pages including: *Free business opportunity to make money from commission with xxx adult sextoys*, http://web.archive.org/web/19981212032701/www.sextoyfun.com/. *[DFNDT000976-000979]*

Sextoys sex toys adult xxx …, http://web.archive.org/web/19990125091930/http://sextoy.com/ (January 25, 1999 version of sextoy.com as archived by the Internet Archive (see note 4)). *[DFNDT000980-000981]*

Sextoys sex toys adult xxx …, http://web.archive.org/web/19990128003853/http://sextoy.com/ (January 28, 1999 version of sextoy.com as archived by the Internet Archive (see note 4)). *[DFNDT000982-000983]*

Promote your own sextoy site, http://web.archive.org/web/19990203092949/sextoy.com/cnv/cnv.html (February 3, 1999 version of instructions for creating your own sextoys site as archived by the Internet Archive (see note 4)) and related pages including: *Promote your own sextoy site- Form*, http://web.archive.org/web/19990203115316/sextoy.com/cnv/form.html; and *Banners to Promote your own sextoy site*, http://web.archive.org/web/19990203082648/sextoy.com/cnv/banner.html. *[DFNDT000984-000989]*

Sextoys sex toys adult xxx …, http://web.archive.org/web/19990219233531/http://www.sextoy.com/ (February 19, 1999 version of sextoy.com as archived by the Internet Archive (see note 4)). [DFNDT000990-000991]

Promote your own sextoy site, http://web.archive.org/web/19990225131500/www.sextoy.com/cnv/cnv.html (February 25, 1999 version of

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, the Sextoy.com Website at www.sextoys.com[2], (hereinafter "Sextoy") anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	"Promote your own sextoy site! We will run the website, process the orders, ship the product, and handle customer service. Then we will pay you 15-20% of gross revenue from the sales you attract." *Promote your own sextoy site*, http://web.archive.org/web/19980517004530/sextoy.com/cnv/cnv.html (emphasis

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instructions for creating your own sextoy site as archived by the Internet Archive (see note 4)) and related pages including: *Promote your own sextoy site- Form*, http://web.archive.org/web/19990225150316/www.sextoy.com/cnv/form.html. *[DFNDT000992-000994]*

Sextoys sex toys adult xxx …, http://web.archive.org/web/19990420062959/http://www.sextoy.com/ (April 20, 1999 version of sextoy.com as archived by the Internet Archive (see note 4)) and related pages including: *Since 1994 the largest, most user-friendly, and most popular sextoy site on the web*, http://web.archive.org/web/19990420215532/sextoy.com/about.html ("In 1996 we were the first sextoy site to offer webmasters the opportunity to customize their own sextoy site and receive commission from sales." (emphasis removed)). *[DFNDT000995-000997]*

Promote your own sextoy site, http://web.archive.org/web/19990421190131/sextoy.com/cnv/cnv.html (April 21, 1999 version of instructions for creating your own sextoys site as archived by the Internet Archive (see note 4)). *[DFNDT000998]*

Sextoys sex toys adult xxx …, http://web.archive.org/web/19990429075920/http://www.sextoy.com/ (April 29, 1999 version of sextoy.com as archived by the Internet Archive (see note 4)). [DFNDT000999-0001000]

Promote your own sextoy site, http://web.archive.org/web/19990502170612/www.sextoy.com/cnv/cnv.html (May 2, 1999 version of instructions for creating your own sextoy as archived by the Internet Archive (see note 4)). *[Document 21]*

Banner.html, http://web.archive.org/web/19990910044933/http://www.sextoyfun.com/cgibin/convbrowse.cgi?102&cnv/banner.html (September 10, 1999 version of Banner.html as archived by the Internet Archive (see note 4)). *[DFNDT0001003]*

[2] *WHOIS Record for sextoy.com*, http://www.networksolutions.com/whois/results.jsp?whoistoken=11 (last visited August 8, 2006) (sextoy.com was first registered on May 2, 1995 and is owned by Convergence, Inc). *[DFNDT0001060-1061]*

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[3] For more information about the Internet Archive and web pages archived therein, *see Internet Archive Frequently Asked Questions*, http://www.archive.org/about/faqs.php. *[DFNDT0001048-1059]*

[4] *Also see* Lewis Perdue, *EroticaBiz How Sex Shaped the Internet* 5-6 (IdeaWorx 2002), available at http://www.eroticabiz.com/ ("Actual profits from an affiliate system had to wait until David Levine built SexToyFun (www.sextoyfun.com) [sic] a substantial but decidedly quirky sex paraphernalia site. Levine said he launched his site in 1994 and began his first affiliate program in the spring of 1996. … Levine's affiliate program was actually a virtual store service which allowed adult webmasters to set up, customize and brand their own sex toy stores with Levine's operation handling all the billing, fulfillment, shipping and customer service. Then in early 1997, Levine set up a more conventionally structured affiliate system like that used by Amazon and CDNow so webmasters could get referral commissions from the sale of products from his store.

While Levine's conventional affiliate system was launched after SportSource and CDNow, his pioneering role was the invention of "v-commerce" an e-commerce business model halfway between traditional affiliate systems and outright etailing.

… [T]he v-commerce operation pioneered by Levine offers … [a] central e-supplier provid[ing] an online "catalog" from which the v-commerce affiliate can select. Each product selected by the affiliate goes into a cookie-cutter web page supplied by the mother site which offers a number of different pre-programmed and customizable styles from which to select.

When an order is placed in the affiliate's store, the mother site then works in the background, handling everything else from order taking and payments to shipping customer service and returns -- all within an e-commerce environment that looks just like the whole process is run by the affiliate.

Building upon the adult industry's experience, v-commerce was discovered by the non-adult market in 1998 when venture capitalists funded more than a dozen start-ups including vcommerce.com (born as Vstore) which backed by more than $54 million in venture capital, is the non-adult patriarch in this field. …

By early 2001, most other non-adult v-commerce operations had burned through their venture capital and were either out of business (Affinia.com, Nexchange), hanging on by a thread (Iconomy, Vitessa) or trying to re-invent themselves into another category that would attract more venture capital (esaler.com reborn as pop2it, a so-called "contextual commerce technology company.)

Thanks to the product affiliate sales system he invented, Levine has succeeded in making a profit from ecommerce on the Internet – something that has eluded hundreds of venture-financed etailers who have collectively poured billions of investment dollars down a very large and seemingly insatiable cyber-rathole. Significantly, Levine has been profitable from his first few months on the Web. Amazon and other are still scrambling to get out of the loss columns.") (this article is referring to sextoy.com, not sextoyfun.com; David Levine began an affiliate program on sextoy.com in 1996). [*DFNDT0001048-0001059*]; *also see WHOIS Record for sextoyfun.com*, http://www.networksolutions.com/whois/results.jsp?whoistoken=13 (last visited August 8, 2006) (sextoyfun.com was first registered on September 9, 1998) *[DFNDT0001065-0001068]*

[5] *Also see David Levine*, http://www.davelevine.com (last visited on August 11, 2006)("[O]ne idea was to take orders on the web and then forward the orders to companies who would drop ship the products to my customers. My goal was (and still is) to build a billion dollar company with no employees, no corporate office, and no inventory. I named my business Convergence, Inc. I started Wicked Cool Mall and opened stores selling lobsters, sneakers, watches, paintings, t-shirts, etc. Eventually I decided I could make more money focusing on one product niche rather than many different stores in a mall. Since SEXTOY.com had the most sales, highest profit margins, and biggest traffic I decided to become the king of sex toys.

In 1996, I started the first affiliate program for adult products. An affiliate program allows anyone to sign up and get their own sextoy site for free. They can make the site look like their own, but we handle the orders and fulfilment [sic] and then send the affiliate a commission check each month for the sales in their store.") *[DFNDT0001078-0001079]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		removed) (May 17, 1998 version of sextoy.com/cnv/cnv.html as archived by the Internet Archive[3]).[4, 5] *[DFNDT000945-000946]* "We have been drop shipping sextoys from web-generated orders since February 1995. Thanks to our huge selection, user-friendly web site, great prices, quick customer service, reliable shipping, and easy secure payment options, we consistently out sell any other sextoy sites in cyberspace." *More information - Promote your own sextoy site*, http://web.archive.org/web/19980517011212/sextoy.com/cnv/moreinfo.html (emphasis removed) (May 17, 1998 version of sextoy.com/cnv/moreinfo.html as archived by the Internet Archive[6]). *[DFNDT000947]*
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	"2. We will send you a URL (web address) that you put in your web site. Your customers click on that link to get to your Sextoy site. 3. All orders that come from your link will be marked and commission of 15%-20% of gross sales paid to you monthly [sic]. (Gross sales include shipping cost which can be a significant portion of total revenue.)" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "If you are linking to our sextoy site, feel free to copy and use these banners. Also, as long as you are using images to promote our sextoy site you can borrow images from your toy site." *Banners to Promote your own sextoy site*, http://web.archive.org/web/19980517011218/sextoy.com/cnv/banner.html (May 17, 1998 version of sextoy.com/cnv/banner.html as archived by the Internet Archive[7]). *[DFNDT000948-000949]*

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[6] Internet Archive Frequently Asked Questions, *supra* note 4.

[7] Internet Archive Frequently Asked Questions, *supra* note 4.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		The owner of the first web page is the affiliate, the outsource provider is Convergence, Inc. (owner and operator of Sextoy.com), and the selected merchant is party drop-shipping the sex toy product(s). "We have been drop shipping sextoys from web-generated orders since Febrnary 1995. Thanks to our huge selection, user-friendly web site, great prices, quick customer service, reliable shipping, and easy secure payment options, we consistently out sell any other sextoy sites in cyberspace." *More information - Promote your own sextoy site*, http://web.archive.org/web/19980517011212/sextoy.com/cnv/moreinfo.html (emphasis removed) (May 17, 1998 version of sextoy.com/cnv/moreinfo.html as archived by the Internet Archive[8]). *[DFNDT000947]* It is well know to a person skilled in the art that drop shipping is a procedure where a manufacturer, supplier, or distributor ships the product (i.e., a sex toy) to a store's customer. One of the corporate philosophies of Covergence, Inc., the owner and operator of sextoy.com, is "[r]ather than make large investments in overhead or employees, we pay other companies to perform all jobs that are not our core business. … Outsourcing is not only more efficient but also keeps our organization more nimble. Rather than having large investments that need to be paid off, by outsourcing, more costs become variable. If we decide to make sudden changes in business direction, we don't have to worry about liquidating any previous investments, we can just terminate a relationship we had with a company we were outsourcing to." http://classic-web.archive.org/web/19980204025709/www.wcool.com/cnv/philo.html, Febrnary 4, 1998 version(emphasis removed). *[DFNDT0001080-0001081]* Accordingly, it is obvious to a person skilled in the art that Convergence, Inc. did not sell its own products or products it owned. Rather, Convergence, Inc. sold the products of a third party (i.e., the supplier, distributor, or manufacturer) at sextoy.com.

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[8] Internet Archive Frequently Asked Questions, *supra* note 4.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	"To get started as soon as possible: Please email the information below to us now dml@sextoy.com. Or you can fax it to (617) 666 3421." *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. ______________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank. • Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://____/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. ______________________________" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "2. We will send you a URL (web address) that you put in your web site. Your customers click on that link to get to your Sextoy site. 3. All orders that come from your link will be marked and commission of 15%-20% of gross sales paid to you monthly [sic]. (Gross sales include shipping cost which can be a significant portion of total revenue.)" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		[DFNDT000945-000946] "If you are linking to our sextoy site, feel free to copy and use these banners. Also, as long as you are using images to promote our sextoy site you can borrow images from your toy site." *Banners to Promote your own sextoy site*, http://web.archive.org/web/19980517011218/sextoy.com/cnv/banner.html (May 17, 1998 version of sextoy.com/cnv/banner.html as archived by the Internet Archive[9]). *[DFNDT000948-000949]*
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	*See also* 3-6, *infra*. "2. We will send you a URL (web address) that you put in your web site. Your customers click on that link to get to your Sextoy site. 3. All orders that come from your link will be marked and commission of 15%-20% of gross sales paid to you monthly [sic]. (Gross sales include shipping cost which can be a significant portion of total revenue.)" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "If you are linking to our sextoy site, feel free to copy and use these banners. Also, as long as you are using images to promote our sextoy site you can borrow images from your toy site." *Banners to Promote your own sextoy site*, http://web.archive.org/web/19980517011218/sextoy.com/cnv/banner.html (May 17, 1998 version of sextoy.com/cnv/banner.html as archived by the Internet Archive[10]). *[DFNDT000948-000949]*

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[9] Internet Archive Frequently Asked Questions, *supra* note 4.

[10] Internet Archive Frequently Asked Questions, *supra* note 4.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		"To get started as soon as possible: Please email the information below to us now dml@sextoy.com. Or you can fax it to (617) 666 3421." *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. ______________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank. • Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://____/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. ______________________________" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	"What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. ______________________________ What would you like to appear on the bottom of every page? (You probably will want

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank. • Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://___/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. ________________________” *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	“What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. ________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank. • Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://___/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. ________________________”

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		Promote your own sextoy site, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	“What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. ________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank. • Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://___/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. ________________________” *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	“What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. ________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		• Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://___/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. ________________________” *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	“Promote your own sextoy site! We will run the website, process the orders, ship the product, and handle customer service. Then we will pay you 15-20% of gross revenue from the sales you attract.” *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* “Also, as long as you are using images to promote our sextoy site (sic) you can borrow images from your toy site.” *Banners to Promote your own sextoy site*, May 17, 1998 version. *[DFNDT000948-000949]* “Webmasters - Earn commission for selling sextoys.” *Sextoys sex toys adult xxx* ..., May 17, 1998 version. *[DFNDT000950-000951]* The visitor from the host website could search categories of products including vibrators, toys for men, bondage, pleasure kits, or lotions, creams, and oils. “ • Vibrator and Stimulator World - Realistic Cocks, Massagers, Strap-Ons, Vibrating eggs, and more. • Toys For Men - Pumps, Vaginas, Cock Rings, Strap-On Penises, Blow job simulators, and more. • Bondage Fantasy - Restraints, Body jewelry, Swings, and more. • Butt . . . Of Course - a Variety of anal stimulators including Inflatable, Ejaculating, and Climax Beads. • Pleasure Kits - Special occasion gift kits and variety kits for stimulation. • Female , Male , and Animal - Love Dolls. The best selection in cyberspace. • Lotions, Creams, and Oils - For lubrication, flavor, massage, desensitization and more.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		• Edible Sex - Edible undies, edible condoms, penis pasta and more. • Erotic Garments - Latex and Lingerie for men and women. • Videos - Classics and/or Hot action videos. • Games for fun and intimacy and Books for fun and education.” *Sextoys sex toys adult xxx* ..., May 17, 1998 version (emphasis and links removed).[11] *[DFNDT000950-000951]*
8	The method of claim 1 wherein the second web page is generated dynamically.	
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	“3. All orders that come from your link will be marked and commission of 15%-20% of gross sales paid to you monthly [sic]. (Gross sales include shipping cost which can be a significant portion of total revenue.)” *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* “More Info If you have further questions, email dml@sextoy.com or call (617) 666 3856 Sales will be totaled from the 16th of the previous month to the 15th of the current month and paid before the 28th of the current month. Only checks over $10 will be paid. We will total up to 3 months of sales to get a check over $10 to send. Customers that earn over $1000 in sales in any given month will receive 20% commission during that month. If you receive checks 6 months in a row from us, let us know and we will bump you to 20% commission permanently! We have been drop shipping sextoys from web-generated orders since Febrnary 1995. Thanks to our huge selection, user-friendly web site, great prices, quick customer

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[11] The products and organization of the *Sextoys sex toys adult xxx* ... webpage at www.sextoy.com was an example of the products and the organization of the sextoy websites of the host website operator. *See e.g. Sex toys*, http://web.archive.org/web/20000419221609/http://www.bluetrouble.com/sextoys/index.html *[DFNDT0001072-0001074]* (April 19, 2000 version of www.bluetrouble.com/sextoys/index.html as archived by the Internet Archive (See note 4)) (bluetrouble.com was an affiliate of sextoy.com; the same products (in the same product categories) were also available at *Sextoys sex toys adult xxx* ..., http://web.archive.org/web/20000408212358/http://www.sextoy.com/ (April 8, 2000 version of www.sextoy.com as archived by the Internet Archive (see note 4))). *[DFNDT0001075-0001077]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		service, reliable shipping, and easy secure payment options, we consistently out sell any other sextoy sites in cyberspace." *More information - Promote your own sextoy site*, May 17, 1998 version. *[DFNDT000947]*
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	"Promote your own sextoy site! We will run the website, process the orders, ship the product, and handle customer service. Then we will pay you 15-20% of gross revenue from the sales you attract." *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. __________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank. • Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://____/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. __________________________"

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		Promote your own sextoy site, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	"If you are linking to our sextoy site, feel free to copy and use these banners. Also, as long as you are using images to promote our sextoy site you can borrow images from your toy site." *Banners to Promote your own sextoy site*, May 17, 1998 version. *[DFNDT000948-000949]*
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	"Payment Options To Order through the Computer: Secure Credit Card Form - Submit your order securely through a Netscape secure server. Credit Card Form - If the secure form (above) does not appear in your browser, try this form. This form is not encrypted, but odds of someone seeing your card numbers are still quite small." *Sex Toy Order Center*, May 17, 1998 version (emphasis and links removed). *[DFNDT0001070-0001071]*
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	"Payment Options To Order through the Computer: Secure Credit Card Form - Submit your order securely through a Netscape secure server. Credit Card Form - If the secure form (above) does not appear in your browser, try this form. This form is not encrypted, but odds of someone seeing your card numbers are still quite small." *Sex Toy Order Center*, May 17, 1998 version (emphasis and links removed). *[DFNDT0001070-0001071]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		"Rather than make large investments in overhead or employees, we pay other companies to perform all jobs that are not our core business. … Outsourcing is not only more efficient but also keeps our organization more nimble. Rather than having large investments that need to be paid off, by outsourcing, more costs become variable. If we decide to make sudden changes in business direction, we don't have to worry about liquidating any previous investments, we can just terminate a relationship we had with a company we were outsourcing to." http://classic-web.archive.org/web/19980204025709/www.wcool.com/cnv/philo.html, February 4, 1998 version. *[DFNDT0001080-0001081]*
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra*. "3. All orders that come from your link will be marked and commission of 15%-20% of gross sales paid to you monthly [sic]. (Gross sales include shipping cost which can be a significant portion of total revenue.)" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "More Info If you have further questions, email dml@sextoy.com or call (617) 666 3856 Sales will be totaled from the 16th of the previous month to the 15th of the current month and paid before the 28th of the current month. Only checks over $10 will be paid. We will total up to 3 months of sales to get a check over $10 to send. Customers that earn over $1000 in sales in any given month will receive 20% commission during that month. If you receive checks 6 months in a row from us, let us know and we will bump you to 20% commission permanently! We have been drop shipping sextoys from web-generated orders since February 1995.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		Thanks to our huge selection, user-friendly web site, great prices, quick customer service, reliable shipping, and easy secure payment options, we consistently out sell any other sextoy sites in cyberspace." *More information - Promote your own sextoy site*, May 17, 1998 version. *[DFNDT000947]*
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	"What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. __________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank. • Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://____/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. __________________________" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*
19	A system useful in an outsource provider serving web pages offering commercial opportunities,	*See* 1, *supra*. "Promote your own sextoy site!

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
	the system comprising:	We will run the website, process the orders, ship the product, and handle customer service. Then we will pay you 15-20% of gross revenue from the sales you attract." *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "We have been drop shipping sextoys from web-generated orders since February 1995. Thanks to our huge selection, user-friendly web site, great prices, quick customer service, reliable shipping, and easy secure payment options, we consistently out sell any other sextoy sites in cyberspace." *More information - Promote your own sextoy site*, May 17, 1998 version. *[DFNDT000947]*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* 1(a)-1(b), *supra.* "To get started as soon as possible: Please email the information below to us now dml@sextoy.com. Or you can fax it to (617) 666 3421." *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. __________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank. • Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://____/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000";

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. __________________________" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* It is well know to a person skilled in the art that drop shipping is a procedure where a manufacturer, supplier, or distributor ships the product (i.e., a sex toy) to a store's customer. One of the corporate philosophies of Covergence, Inc., the owner and operator of sextoy.com, is "[r]ather than make large investments in overhead or employees, we pay other companies to perform all jobs that are not our core business. … Outsourcing is not only more efficient but also keeps our organization more nimble. Rather than having large investments that need to be paid off, by outsourcing, more costs become variable. If we decide to make sudden changes in business direction, we don't have to worry about liquidating any previous investments, we can just terminate a relationship we had with a company we were outsourcing to." http://classic-web.archive.org/web/19980204025709/www.wcool.com/cnv/philo.html, February 4, 1998 version(emphasis removed). *[DFNDT0001080-0001081]* Accordingly, it is obvious to a person skilled in the art that Convergence, Inc. did not sell its own products or products it owned. Rather, Convergence, Inc. sold the products of a third party (i.e., the supplier, distributor, or manufacturer) at sextoy.com.
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been	*See* 1(a)-1(c), *supra.* "2. We will send you a URL (web address) that you put in your web site. Your customers click on that link to get to your Sextoy site. 3. All orders that come from your link will be marked and commission of 15%-20% of gross sales paid to you monthly [sic]. (Gross sales include shipping cost which can be a significant portion of total revenue.)" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
	activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	*[DFNDT000945-000946]* "If you are linking to our sextoy site, feel free to copy and use these banners. Also, as long as you are using images to promote our sextoy site you can borrow images from your toy site." *Banners to Promote your own sextoy site*, May 17, 1998 version. *[DFNDT000948-000949]* "Promote your own sextoy site! We will run the website, process the orders, ship the product, and handle customer service. Then we will pay you 15-20% of gross revenue from the sales you attract." *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "We have been drop shipping sextoys from web-generated orders since February 1995. Thanks to our huge selection, user-friendly web site, great prices, quick customer service, reliable shipping, and easy secure payment options, we consistently out sell any other sextoy sites in cyberspace." *More information - Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000947]* "To get started as soon as possible: Please email the information below to us now dml@sextoy.com. Or you can fax it to (617) 666 3421." *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. __________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		frames, you may want to leave the bottom space blank. • Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://____/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. __________________________" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*
	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third	"2. We will send you a URL (web address) that you put in your web site. Your customers click on that link to get to your Sextoy site. 3. All orders that come from your link will be marked and commission of 15%-20% of gross sales paid to you monthly [sic]. (Gross sales include shipping cost which can be a significant portion of total revenue.)" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "If you are linking to our sextoy site, feel free to copy and use these banners. Also, as long as you are using images to promote our sextoy site you can borrow images from your toy site." *Banners to Promote your own sextoy site*, May 17, 1998 version. *[DFNDT000948-000949]* "To get started as soon as possible: Please email the information below to us now dml@sextoy.com. Or you can fax it to (617) 666 3421." *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
	parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	"What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. ________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank. • Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://___/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. ________________________" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* It is well know to a person skilled in the art that drop shipping is a procedure where a manufacturer, supplier, or distributor ships the product (i.e., a sex toy) to a store's customer. One of the corporate philosophies of Covergence, Inc., the owner and operator of sextoy.com, is "[r]ather than make large investments in overhead or employees, we pay other companies to perform all jobs that are not our core business. … Outsourcing is not only more efficient but also keeps our organization more nimble. Rather than having large investments that need to be paid off, by outsourcing, more costs become variable. If we decide to make sudden changes in business direction, we don't have to worry about liquidating any previous investments, we can just terminate a relationship we had with a company we were outsourcing to." http://classic-web.archive.org/web/19980204025709/www.wcool.com/cnv/philo.html, February 4, 1998 version(emphasis removed). *[DFNDT0001080-0001081]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		Accordingly, it is obvious to a person skilled in the art that Convergence, Inc. did not sell its own products or products it owned. Rather, Convergence, Inc. sold the products of a third party (i.e., the supplier, distributor, or manufacturer) at sextoy.com. "Promote your own sextoy site! We will run the website, process the orders, ship the product, and handle customer service. Then we will pay you 15-20% of gross revenue from the sales you attract." *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "We have been drop shipping sextoys from web-generated orders since February 1995. Thanks to our huge selection, user-friendly web site, great prices, quick customer service, reliable shipping, and easy secure payment options, we consistently out sell any other sextoy sites in cyberspace." *More information - Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000947]*
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra*. "Promote your own sextoy site! We will run the website, process the orders, ship the product, and handle customer service. Then we will pay you 15-20% of gross revenue from the sales you attract." *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "Also, as long as you are using images to promote our sextoy site (sic) you can borrow images from your toy site." *Banners to Promote your own sextoy site*, May 17, 1998 version. *[DFNDT000948-000949]* "Webmasters - Earn commission for selling sextoys." *Sextoys sex toys adult xxx* ..., May 17, 1998 version. *[DFNDT000950-000951]* The visitor from the host website could search categories of products including vibrators, toys for men, bondage, pleasure kits, or lotions, creams, and oils. "

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		• Vibrator and Stimulator World - Realistic Cocks, Massagers, Strap-Ons, Vibrating eggs, and more. • Toys For Men - Pumps, Vaginas, Cock Rings, Strap-On Penises, Blow job simulators, and more. • Bondage Fantasy - Restraints, Body jewelry, Swings, and more. • Butt . . . Of Course - a Variety of anal stimulators including Inflatable, Ejaculating, and Climax Beads. • Pleasure Kits - Special occasion gift kits and variety kits for stimulation. • Female , Male , and Animal - Love Dolls. The best selection in cyberspace. • Lotions, Creams, and Oils - For lubrication, flavor, massage, desensitization and more. • Edible Sex - Edible undies, edible condoms, penis pasta and more. • Erotic Garments - Latex and Lingerie for men and women. • Videos - Classics and/or Hot action videos. • Games for fun and intimacy and Books for fun and education." *Sextoys sex toys adult xxx* ..., May 17, 1998 version (emphasis and links removed).[12] *[DFNDT000950-000951]*
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra*. "What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. ________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank. • Back To __________ (your site name)

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[12] The products and organization of the *Sextoys sex toys adult xxx* ... webpage at www.sextoy.com was an example of the products and the organization of the sextoy websites of the host website operator. *See e.g. Sex toys*, http://web.archive.org/web/20000419221609/http://www.bluetrouble.com/sextoys/index.html *[DFNDT0001072-0001074]* (April 19, 2000 version of www.bluetrouble.com/sextoys/index.html as archived by the Internet Archive (See note 4)) (bluetrouble.com was an affiliate of sextoy.com; the same products (in the same product categories) were also available at *Sextoys sex toys adult xxx* ..., http://web.archive.org/web/20000408212358/http://www.sextoy.com/ (April 8, 2000 version of www.sextoy.com as archived by the Internet Archive (see note 4))). *[DFNDT0001075-0001077]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		• Your site address http://web.archive.org/web/19980517004530/http://___/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. ________________________" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	*See* 13-16, *supra*. "Payment Options To Order through the Computer: Secure Credit Card Form - Submit your order securely through a Netscape secure server. Credit Card Form - If the secure form (above) does not appear in your browser, try this form. This form is not encrypted, but odds of someone seeing your card numbers are still quite small." *Sex Toy Order Center*, May 17, 1998 version (emphasis and links removed). *[DFNDT0001070-0001071]* "Rather than make large investments in overhead or employees, we pay other companies to perform all jobs that are not our core business. … Outsourcing is not only more efficient but also keeps our organization more nimble. Rather than having large investments that need to be paid off, by outsourcing, more costs become variable. If we decide to make sudden changes in business direction, we don't have to worry about liquidating any previous investments, we can just terminate a relationship we had with a company we were outsourcing to." http://classic-web.archive.org/web/19980204025709/www.wcool.com/cnv/philo.html, February 4, 1998 version. *[DFNDT0001080-0001081]* "3. All orders that come from your link will be marked and commission of 15%-20%

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		of gross sales paid to you monthly [sic]. (Gross sales include shipping cost which can be a significant portion of total revenue.)" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]* "More Info If you have further questions, email dml@sextoy.com or call (617) 666 3856 Sales will be totaled from the 16th of the previous month to the 15th of the current month and paid before the 28th of the current month. Only checks over $10 will be paid. We will total up to 3 months of sales to get a check over $10 to send. Customers that earn over $1000 in sales in any given month will receive 20% commission during that month. If you receive checks 6 months in a row from us, let us know and we will bump you to 20% commission permanently! We have been drop shipping sextoys from web-generated orders since Febrnary 1995. Thanks to our huge selection, user-friendly web site, great prices, quick customer service, reliable shipping, and easy secure payment options, we consistently out sell any other sextoy sites in cyberspace." *More information - Promote your own sextoy site*, May 17, 1998 version. *[DFNDT000947]*
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra.* "What would you like at the top of the front page of your sextoy site? (You can submit actual HTML if you like). If you want to serve a logo or image, either forward us the image or give us the URL where it is located. ___________________________ What would you like to appear on the bottom of every page? (You probably will want to put in a link so that customers can go back to your main site.) Or if you are using frames, you may want to leave the bottom space blank.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Sextoy.com Prior Art
		• Back To __________ (your site name) • Your site address http://web.archive.org/web/19980517004530/http://____/ (Optional) If you want to alter the front page background colors, please send the HTML codes. Otherwise, we will use our default colors. (body TEXT="#000000"; BGCOLOR="#FFFFFF" LINK="#FF0000" VLINK="#FF00FF" ALINK="#FF0000") Also, if you want to insert an image for the background either forward the image to us or tell us the URL where the image is will be served from. ___________________________" *Promote your own sextoy site*, May 17, 1998 version (emphasis removed). *[DFNDT000945-000946]*

Comparison of the U.S. Patent No. 7,818,399 and One & Only Articles Prior Art[1, 2]

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, One & Only Internet Personals at www.one-and-only.com, anticipate and/or render obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Pateut No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	One & Only was an e-commerce outsourcing solution for other companies or individual website operators (hereinafter "associates"), which allowed associates to have a personals website under their own name with the same look and feel as their own website. [3, 4, 5] "Consider, for instance, matchmaker site One & Only. The site, which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issues, Internet World*, April 13, 1998. *[DFNDT0001690-0001692, DFNDT0001712-0001715]*
1(a)	automatically at a server of the outsource	"In an affiliate program, interested Web sites register with merchants to recommend

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[1] *See also* the prior art identified in the invalidity contentions for the One & Only Network Prior Art.

[2] *WHOIS Record forone-and-only.com*, http://www.networksolutions.com/whois/results.jsp?whoistoken=0 (last visited Augnst 14, 2006) (one-and-only.com was first registered on November 30, 1995). *[DFNDT0001707-0001711]*

[3] *Also see Welcome To One&Only Network*, http://web.archive.org/web/19990427193911/http://www.oneandonlynetwork.com/ (April 27, 1999 version of www.oneandonlynetwork.com/ as archived by the Internet Archive. (see note 6)) ("We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!"). *[DFNDT0001698-0001699]*

[4] *Also see One & Only Internet Personals and Romance*, http://web.archive.org/web/19970609215214/http://www.one-and-only.com/menu1.htm (June 9, 1997 version of www.one-and-only.com/menu1.htm as archived by the Internet Archive. (see note 6)) ("Match you website to the world. One & Only brings your site revenue."). *[DFNDT0001702-0001703]*

[5] For more information about the Internet Archive and web pages archived therein, *see Internet Archive Frequently Asked Questions*, http://www.archive.org/about/faqs.php. *[DFNDT0001751-0001794]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu One & Only Articles Prior Art ("One &Only")
	provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page	items for sale. Then they establish lists of merchandise on their sites, and when users click through to buy, the referring Web site gets a cut of the sale." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [6, 7] *[DFNDT0001690-0001692, DFNDT0001712-0001715]* "The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the

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[6] *Also see Custom Features*, April 22, 1999 version ("Get Your HTML Link Code

…

Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page.

…

With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page.

…

Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.

…

Can You Just Have a Link on Your Site … Of course

…

Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar.

…

Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[7] *Also see Welcome To One&Only Network*, April 27, 1999 version ("Get Your HTML Link Code …We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT! … Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
	owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue. [DFNDT0001690-0001692, DFNDT0001712-0001715]* "One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]* The owner of the first web page is the affiliate, the outsource provider is One & Only and the selected merchant is person placing the classified or personal ad.
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only ... And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [8, 9, 10] *[DFNDT0001690-0001692, DFNDT0001712-0001715]*

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[8] *Also see Welcome To One&Only Network*, April 27, 1999 version ("We provide you with detailed stats, a customizable web site to integrate into your own web presence …. Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own."). *[DFNDT0001698-0001699]*

[9] *Also see Custom Features*, http://web.archive.org/web/19990422060034/http://www.oneandonlynetwork.com/customize.htm (April 22, 1999 version of www.oneandonlynetwork.com/customize.htm as archived by the Internet Archive. (see note 5)) ("Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page.")("Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar.

…

Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu One & Only Articles Prior Art ("One &Only")
		"One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?*, Web Marketing Today Issue 43, April 1, 1998. *[DFNDT0001693-0001697, DFNDT0001716-0001719]*
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	*See also* 3-6, *infra.* In an affiliate program, interested Web sites register with merchants to recommend items for sale. Then they establish lists of merchandise on their sites, and when users click through to buy, the referring Web site gets a cut of the sale." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [11, 12] *[DFNDT0001690-0001692, DFNDT0001712-0001715]*

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you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.

…

With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page.

…

Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site."). *[DFNDT0001700-0001701]*

[10] *Also see* Mike Curtis, *Affiliate Programs: Why They're Going To LAST*, available at http://web.archive.org/web/19990915171254/www.oneandonlynetwork.com/Zcommerce1.htm?MID=0 (September 15, 1999 version of www.oneandonlynetwork.com/Zcommerce1.htm?MID=0 as archived by the Internet Archive. (see note 5)) ("the One & Only Romance Network (personal classified ads) assigns each associate a unique "associate site" that is theirs specifically. We use an ID number, with a database query string in the URL, to track sales and traffic for each associate."). *[DFNDT0001704-0001706]*

[11] *Also see Custom Features*, April 22, 1999 version ("Get Your HTML Link Code

…

Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page.

…

With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
		"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue. [DFNDT0001690-0001692, DFNDT0001712-0001715]* "One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]*

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bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page.

…

Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.

…

Can You Just Have a Link on Your Site … Of course

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Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar.

…

Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[12] *Also see Welcome To One&Only Network*, April 27, 1999 version ("Get Your HTML Link Code …We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT! … Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu One & Only Articles Prior Art ("One &Only")
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [13, 14] *[DFNDT0001690-0001692, DFNDT0001712-0001715]* "One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]*

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[13] *Also see Custom Features*, April 22, 1999 version ("Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page.

…

With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page.

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Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar.

…

Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[14] *Also see Welcome To One&Only Network*, April 27, 1999 version ("We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web

Comparison of the U.S. Patent No. 7,818,399 and One & Only Articles Prior Art

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [15, 16] *[DFNDT0001690-0001692, DFNDT0001712-0001715]* One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]*

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site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!

…

Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

[15] *Also see Custom Features*, April 22, 1999 version ("Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we   match the look and feel to your home page.

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With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page.

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Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar.

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Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

Comparison of the U.S. Patent No. 7,818,399 and One & Only Articles Prior Art

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [17, 18] *[DFNDT0001690-0001692, DFNDT0001712-0001715]* "One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]*

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[16] *Also see Welcome To One&Only Network*, April 27, 1999 version ("We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!

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Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

[17] *Also see Custom Features*, April 22, 1999 version ("Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we   match the look and feel to your home page.

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With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page.

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Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar.

Comparison of the U.S. Patent No. 7,818,399 and One & Only Articles Prior Art

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [19, 20] *[DFNDT0001690-0001692, DFNDT0001712-0001715]* "One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]*

…

Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[18] *Also see Welcome To One&Only Network*, April 27, 1999 version ("We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!

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Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

[19] *Also see Custom Features*, April 22, 1999 version ("Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.

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Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar. ") (emphasis and links removed). *[DFNDT0001700-0001701]*

[20]

Comparison of the U.S. Patent No. 7,818,399 and One & Only Articles Prior Art

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue. [DFNDT0001690-0001692, DFNDT0001712-0001715]* [21, 22] "One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]*

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[21] *Also see Custom Features*, April 22, 1999 version ("Get Your HTML Link Code

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Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we   match the look and feel to your home page.

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With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page.

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
8	The method of claim 1 wherein the second web page is generated dynamically.	
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [23] *[DFNDT0001690-0001692, DFNDT0001712-0001715]* "Because subscriptions are for sale instead of products…" Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue. [DFNDT0001690-0001692, DFNDT0001712-0001715]*
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And

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site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[22] *Also see Welcome To One&Only Network*, April 27, 1999 version ("Get Your HTML Link Code

…

We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!

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Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

[23] *Also see Custom Features*, April 22, 1999 version ("Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.") (emphasis and links removed). *[DFNDT0001700-0001701]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu One & Only Articles Prior Art ("One &Only")
	completed.	One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [24] *[DFNDT0001690-0001692, DFNDT0001712-0001715]* "Because subscriptions are for sale instead of products…" Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue. [DFNDT0001690-0001692, DFNDT0001712-0001715]*
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	"One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?*. [25, 26] *[DFNDT0001693-0001697, DFNDT0001716-0001719]*

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[24] *Also see Custom Features*, April 22, 1999 version ("Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[25] *Also see Custom Features*, April 22, 1999 version ("Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page.

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With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page.

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Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.

…

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	
16	The method of claim 14, further comprising after the transaction is completed,	*See* 10, *supra.*

Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar.

…

Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[26] *Also see Welcome To One&Only Network*, April 27, 1999 version ("We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu One & Only Articles Prior Art ("One &Only")
	computer-facilitating payment of a commission to the owner of the source page.	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [27] *[DFNDT0001690-0001692, DFNDT0001712-0001715]* "Because subscriptions are for sale instead of products…" Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue. [DFNDT0001690-0001692, DFNDT0001712-0001715]*
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue. [DFNDT0001690-0001692, DFNDT0001712-0001715]*[28, 29]

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[27] *Also see Custom Features*, April 22, 1999 version ("Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[28] *Also see Custom Features*, April 22, 1999 version ("Get Your HTML Link Code

…

Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
		"One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]*
19	A system useful in an outsource provider serving	*See* 1, *supra.*

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content appears to be your own because we match the look and feel to your home page.

…

With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page.

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Can You Just Have a Link on Your Site … Of course

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Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar.

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Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[29] *Also see Welcome To One&Only Network*, April 27, 1999 version ("Get Your HTML Link Code

…

We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!

…

Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
	web pages offering commercial opportunities, the system comprising:	"Consider, for instance, matchmaker site One & Only. The site, which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members." Whit Andrews, Partners in *Affiliate Marketing Struggle With Branding Issue.* [30,31] *[DFNDT0001690-0001692, DFNDT0001712-0001715]*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying	*See* 1(a)-1(b), *supra.* "The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [32,33] *[DFNDT0001690-0001692, DFNDT0001712-0001715]*

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[30] [Omitted.]

[31] *Also see Welcome To One&Only Network*, April 27, 1999 version ("We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!"). *[DFNDT0001698-0001699]*

[32] *Also see Custom Features*, April 22, 1999 version ("Get Your HTML Link Code

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Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
	opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	"One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]* The owner of the first web page is the affiliate, the outsource provider is One & Only and the selected merchant is person placing the classified or personal ad.
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links	*See* 1(a)-1(c), *supra.* "The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search

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you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.

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Can You Just Have a Link on Your Site … Of course

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Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar.

…

Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[33] *Also see Welcome To One&Only Network*, April 27, 1999 version ("Get Your HTML Link Code

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We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!

…

Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
	displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the	categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [34,35] *[DFNDT0001690-0001692, DFNDT0001712-0001715]*

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[34] *Also see Custom Features*, April 22, 1999 version ("Get Your HTML Link Code

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Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
	source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	"One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]* "Because subscriptions are for sale instead of products…" Whit Andrews, Partners in *Affiliate Marketing Struggle With Branding Issue. [DFNDT0001690-0001692, DFNDT0001712-0001715]*
	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [36], [37] *[DFNDT0001690-0001692, DFNDT0001712-0001715]*

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[36] *Also see Custom Features*, April 22, 1999 version ("Get Your HTML Link Code

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Can You Just Have a Link on Your Site … Of course

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
	displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated	"One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]* The owner of the first web page is the affiliate, the outsource provider is One & Only and the selected merchant is person placing the classified or personal ad.

Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar.

…

Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

[37] *Also see Welcome To One&Only Network*, April 27, 1999 version ("Get Your HTML Link Code

…

We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!

…

Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
	with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the	*See* 7, *supra.* "The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue. [DFNDT0001690-0001692, DFNDT0001712-0001715]*[38], [39]

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Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
	catalog.	"One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?. [DFNDT0001693-0001697, DFNDT0001716-0001719]*
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra.* "The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [40] *[DFNDT0001690-0001692, DFNDT0001712-0001715]* "Because subscriptions are for sale instead of products…"

Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site.") (emphasis and links removed). *[DFNDT0001700-0001701]*

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Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own.") (emphasis and links removed). *[DFNDT0001698-0001699]*

[40] *Also see Custom Features*, April 22, 1999 version ("Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.") (emphasis and links removed). *[DFNDT0001700-0001701]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
		Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* *[DFNDT0001690-0001692, DFNDT0001712-0001715]*
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	"The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* [41] *[DFNDT0001690-0001692, DFNDT0001712-0001715]* "Because subscriptions are for sale instead of products…" Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* *[DFNDT0001690-0001692, DFNDT0001712-0001715]*
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first	*See* 18, *supra.* "The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search

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[41] *Also see Custom Features*, April 22, 1999 version ("Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed.") (emphasis and links removed). *[DFNDT0001700-0001701]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu One & Only Articles Prior Art ("One &Only")
	web pages.	categories, for their sites, which makes it harder to tell users they have to switch." Whit Andrews, *Partners in Affiliate Marketing Struggle With Branding Issue.* *[DFNDT0001690-0001692, DFNDT0001712-0001715]*[42, 43]

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[43] *Also see Welcome To One&Only Network*, April 27, 1999 version ("Get Your HTML Link Code

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Articles Prior Art ("One &Only")
		"One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website." James L. Marciano, *Are Affiliate Programs for You?.* *[DFNDT0001693-0001697, DFNDT0001716-0001719]*

Comparison of the U.S. Patent No. 7,818,399 and One & Only Network Prior Art

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, One & Only Network Prior Art at www.oneandonlynetwork.com,[1] anticipate and/or render obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	One & Only provided an outsource provider serving web pages offering commercial opportunities for other companies or individual website operators (hereinafter "associates"), which allowed associates to have a personals and classified website under their own name with the same look and feel as their own website. "We [One & Only] provide you with the tools that free you [associates] from the

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[1] *WHOIS Record foroneandonlynetwork.com*, http://www.networksolutions.com/whois/results.jsp?whoistoken=12 (last visited Augnst 8, 2006) (oneandonlynetwork.com was first registered on September 15, 1998) *[DFNDT0001723-0001727]*

[2] For more information about the Internet Archive and web pages archived therein, *see Internet Archive Frequently Asked Questions*, http://www.archive.org/about/faqs.php. *[DFNDT0001751-0001794]*

[3] *Also see* for more information on operation of the One & Only associate program:

Frequently Asked Questions for One & Only Associate Program, http://web.archive.org/web/19990908153750/www.oneandonlynetwork.com/newsignup/faqtext1.htm?MID=0 (September 8, 1999 version of www.oneandonlynetwork.com/newsignup/faqtext1.htm?MID=0/ as archived by the Internet Archive (see note 2); *[DFNDT0001728-0001731]*

Frequently Asked Questions for One & Only Associate Program, http://web.archive.org/web/19990908163430/www.oneandonlynetwork.com/newsignup/faqtext3.htm?MID=0 (September 8, 1999 version of www.oneandonlynetwork.com/newsignup/faqtext3.htm?MID=0/ as archived by the Internet Archive (see note 2); *[DFNDT0001732-0001733]*

Frequently Asked Questions for One & Only Associate Program, http://web.archive.org/web/19990908165526/www.oneandonlynetwork.com/newsignup/faqtext4.htm?MID=0 (September 8, 1999 version of www.oneandonlynetwork.com/newsignup/faqtext4.htm?MID=0/ as archived by the Internet Archive (see note 2); *[DFNDT0001734-0001736]*

Frequently Asked Questions for One & Only Associate Program, http://web.archive.org/web/19990908171453/www.oneandonlynetwork.com/newsignup/faqtext5.htm?MID=0 (September 8, 1999 version of www.oneandonlynetwork.com/newsignup/faqtext5htm?MID=0/ as archived by the Internet Archive (see note 2); *[DFNDT0001737-0001738]*

[4] *Also see Whit Andrews, Partners in Affiliate Marketing Struggle With Branding Issues*, Internet World, April 13, 1998 ("The site [One & Only], which launched in 1996, makes half of its money from an affiliate network with more than 8,000 members. Each of these members has the choice of building a private-label site or a co-branded site with One & Only … And One and Only allows affiliates to customize navigational features, such as search categories, for their sites, which makes it harder to tell users they have to switch."). *[DFNDT0001739-0001742]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!" *Welcome To One&Only Network*, http://web.archive.org/web/19990427193911/http://www.oneandonlynetwork.com/ (April 27, 1999 version of www.oneandonlynetwork.com/ as archived by the Internet Archive.[2]).[3] *[DFNDT0001747-0001748]* [4]
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	The at least one active link is associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants (e.g. a subscription to a personals site (One-and-Only.com or AlternativeConnections.com) or a product in the auction classifieds (UTrade) or a selected product category (e.g. antiques from Pennsylvania)). "Get Your HTML Link Code" *Welcome To One&Only Network*, April 27, 1999 version (emphasis and link removed). *[DFNDT0001747-0001748]* "Get Your HTML Link Code" *Custom Features*, April 22, 1999 version (emphasis and link removed). *[DFNDT0001749-0001750]* "Can You Just Have a Link on Your Site … Of course…" *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* The associate could add or control the following on the One & Only website: add their logo, specify a background color or gif, design their own menu bar, add a link back to their existing website, and filter the classifieds databases using search criteria such as geography and category to create a customized service that corresponds to the associate's existing website. [5]

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[5] James L. Marciano, *Are Affiliate Programs for You?*, Web Marketing Today Issue 43, April 1, 1998 ("One & Only Internet Personals offers a customized version of their classifieds service that integrates seamlessly with the look and feel of the owner's website."). *[DFNDT0001742-0001746]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		"Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "You can create your own product identity with a unique appeal…. With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		"We provide you with detailed stats, a customizable web site to integrate into your own web presence …" *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]* "Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own." *Welcome To One&Only Network*, April 27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* The owner of the first web page is the affiliate, the outsource provider is One & Only and the selected merchant is person placing the classified or personal ad.
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	"Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "We provide you with detailed stats, a customizable web site to integrate into your own web presence …" *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		"Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own." *Welcome To One&Only Network*, April 27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]*
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a	*See also* 3-6, *infra*. One & Only would automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated (e.g. a

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
	plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	subscription to a personals site (One-and-Only.com or AlternativeConnections.com) or a product in the auction classifieds (UTrade) or a selected product category (e.g. antiques from Pennsylvania)). "Get Your HTML Link Code" *Welcome To One&Only Network*, April 27, 1999 version (emphasis and link removed).[6, 7] *[DFNDT0001747-0001748]* "Get Your HTML Link Code" *Custom Features*, April 22, 1999 version (emphasis and link removed). *[DFNDT0001749-0001750]* "Can You Just Have a Link on Your Site … Of course…" *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* As far as the scope of the claimed "look and feel" can be determined, the look and feel of the One & Only website of the associate, stored in the data server, was the same as the look and feel description of the existing website of the associate. Specifically, the associate could add or control the following on the One & Only website: add their logo, specify a background color or gif, design their own menu bar, add a link back to their existing website, and filter the classifieds databases using search criteria such as geography and category to create a customized service that corresponds to the associate's existing website. "Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-*

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[6] *Supra* note 4.

[7] *Supra* note 5.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		0001750] "We provide you with detailed stats, a customizable web site to integrate into your own web presence …" *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]* "Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own." *Welcome To One&Only Network*, April 27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site." *Custom Features*,

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* The owner of the first website is the affiliate, the second website owner is One & Only and the merchant is person placing the classified or personal ad.
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	The associate could add or control the following on the One & Only website: add their logo, specify a background color or gif, design their own menu bar, add a link back to their existing website, and filter the classifieds databases using search criteria such as geography and category to create a customized service that corresponds to the associate's existing website.[8, 9] "Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "We provide you with detailed stats, a customizable web site to integrate into your own web presence …" *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]* "Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own." *Welcome To One&Only Network*, April 27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your

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[8] *Supra* note 4.

[9] *Supra* note 5.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]*
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	The associate could add or control the following on the One & Only website: add their logo, specify a background color or gif, design their own menu bar, add a link back to their existing website, and filter the classifieds databases using search criteria such as geography and category to create a customized service that corresponds to the associate's existing website.[10, 11] "Our unmatched leading-edge co-branding technology gives you the ability to

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[10] *Supra* note 4.

[11] *Supra* note 5.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "We provide you with detailed stats, a customizable web site to integrate into your own web presence …" *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]* "Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own." *Welcome To One&Only Network*, April 27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]*
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	The associate could add or control the following on the One & Only website: add their logo, specify a background color or gif, design their own menu bar, add a link back to their existing website, and filter the classifieds databases using search criteria such as geography and category to create a customized service that corresponds to the associate's existing website.[12, 13] "Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "We provide you with detailed stats, a customizable web site to integrate into your own web presence …" *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]* "Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own." *Welcome To One&Only Network*, April

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[12] *Supra* note 4.

[13] *Supra* note 5.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]*
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the	The associate could add or control the following on the One & Only website: add their logo, specify a background color or gif, design their own menu bar, add a link back to their existing website, and filter the classifieds databases using search criteria such as

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
	source page.	geography and category to create a customized service that corresponds to the associate's existing website.[14, 15] "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]*
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	

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[14] *Supra* note 4.

[15] *Supra* note 5.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
8	The method of claim 1 wherein the second web page is generated dynamically.	
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	"Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page." *Custom Features*, April 22, 1999 version.[16, 17] *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "We provide you with detailed stats, a customizable web site to integrate into your own web presence …" *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]* "Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own." *Welcome To One&Only Network*, April 27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your

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[16] *Supra* note 4.

[17] *Supra* note 5.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]*
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra.*
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	"Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "We provide you with detailed stats, a customizable web site to integrate into your own web presence …" *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]* "Let us put you on the fast track to E-Commerce success with our proven content that

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		you can customize and market as your own." *Welcome To One&Only Network*, April 27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]*
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.* One & Only provided an e-commerce outsourcing system for associates, which allowed associates to have a personals and classified website under their own name

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		with the same look and feel as their own website. "We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on how to succeed, and most importantly the CONTENT!" *Welcome To One&Only Network*, April 27, 1999 version. [18,19] *[DFNDT0001747-0001748]*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* 1(a)-1(b), *supra.* The at least one active link is associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants (e.g. a subscription to a personals site (One-and-Only.com or AlternativeConnections.com) or a product in the auction classifieds (UTrade) or a selected product category (e.g. antiques from Pennsylvania)). "Get Your HTML Link Code" *Welcome To One&Only Network*, April 27, 1999 version (emphasis and link removed). [20,21] *[DFNDT0001747-0001748]* "Get Your HTML Link Code" *Custom Features*, April 22, 1999 version (emphasis and link removed). *[DFNDT0001749-0001750]* "Can You Just Have a Link on Your Site … Of course…" *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* The associate could add or control the following on the One & Only website: add their

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[18] *Supra* note 4.

[19] *Supra* note 5.

[20] *Supra* note 4.

[21] *Supra* note 5.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		logo, specify a background color or gif, design their own menu bar, add a link back to their existing website, and filter the classifieds databases using search criteria such as geography and category to create a customized service that corresponds to the associate's existing website. "Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "We provide you with detailed stats, a customizable web site to integrate into your own web presence …" *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]* "Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own." *Welcome To One&Only Network*, April 27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* The owner of the first web page is the affiliate, the outsource provider is One & Only and the selected merchant is person placing the classified or personal ad.
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate	*See* 1(a)-1(c), *supra.* A One & Only server automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays information associated with the commerce object associated with the link that has been activated (e.g. a subscription to a personals site (One-and-Only.com or AlternativeConnections.com) or a product in the auction classifieds (UTrade) or a selected product category (e.g. antiques from Pennsylvania)). "Get Your HTML Link Code" *Welcome To One&Only Network*, April 27, 1999 version (emphasis and link removed).[22,23] *[DFNDT0001747-0001748]* "Get Your HTML Link Code" *Custom Features*, April 22, 1999 version (emphasis and

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[22] *Supra* note 4.

[23] *Supra* note 5.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
	and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	link removed). *[DFNDT0001749-0001750]* "Can You Just Have a Link on Your Site … Of course…" *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* The associate could add or control the following on the One & Only website: add their logo, specify a background color or gif, design their own menu bar, add a link back to their existing website, and filter the classifieds databases using search criteria such as geography and category to create a customized service that corresponds to the associate's existing website. "Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "We provide you with detailed stats, a customizable web site to integrate into your own web presence …" *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]* "Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own." *Welcome To One&Only Network*, April 27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]*
	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the	One & Only provided computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, which allowed associates to have a personals and classified website under their own name with the same look and feel as their own website. "We [One & Only] provide you with the tools that free you [associates] from the limitations and distractions associated with making money online. You focus on the creative and marketing end while we maintain the hardware, programming and customer support, including credit card approval and billing. We provide you with detailed stats, a customizable web site to integrate into your own web presence, tips on

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
	link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	how to succeed, and most importantly the CONTENT!" *Welcome To One&Only Network*, April 27, 1999 version. [24],[25] *[DFNDT0001747-0001748]* The at least one active link is associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants (e.g. a subscription to a personals site (One-and-Only.com or AlternativeConnections.com) or a product in the auction classifieds (UTrade) or a selected product category (e.g. antiques from Pennsylvania)). "Get Your HTML Link Code" *Welcome To One&Only Network*, April 27, 1999 version (emphasis and link removed). [26],[27] *[DFNDT0001747-0001748]* "Get Your HTML Link Code" *Custom Features*, April 22, 1999 version (emphasis and link removed). *[DFNDT0001749-0001750]* "Can You Just Have a Link on Your Site ... Of course..." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* The associate could add or control the following on the One & Only website: add their logo, specify a background color or gif, design their own menu bar, add a link back to their existing website, and filter the classifieds databases using search criteria such as geography and category to create a customized service that corresponds to the associate's existing website. "Our unmatched leading-edge co-branding technology gives you the ability to customize and integrate our content into your site seamlessly. All content appears to be your own because we match the look and feel to your home page."

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[24] *Supra* note 4.

[25] *Supra* note 5.

[26] *Supra* note 4.

[27] *Supra* note 5.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		Custom Features, April 22, 1999 version. *[DFNDT0001749-0001750]* "Customizing makes it easy to maintain your sites [sic] look and feel. With our easy customization features, we become part of your site. You can add your logo and design your own menu bar." *Custom Features*, April 22, 1999 version. *[DFNDT0001749-0001750]* "We provide you with detailed stats, a customizable web site to integrate into your own web presence ..." *Welcome To One&Only Network*, April 27, 1999 version. *[DFNDT0001747-0001748]* "Let us put you on the fast track to E-Commerce success with our proven content that you can customize and market as your own." *Welcome To One&Only Network*, April 27, 1999 version (emphasis removed). *[DFNDT0001747-0001748]* "With our easy customization features, we become part of your site. You can add your logo, specify a background color or gif, design your own menu bar [sic]. You can even filter the database on search criteria such as geography and category. All our products are set up so you can create a customized service that caters to your existing audience and blends seamlessly with your own web site. No other associate program gives you the tools to tailor your content to fit your current home page." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* "Our UTrade product has tremendous flexibility. Let's say you have an antique web site, and you want to join our program to make some cash and get some auction content. BUT...you want to maintain your antique theme. With our unique customization technology you can build your associate site to only show antique listings. On top of that, let's say you already have you're own logo and brand name you'd like to use and you've got a great background color you like. Oh, and let's say your from Pennsylvania and you want to add a "local feel to your site". Well, with UTrade, you can set up an associate site that will have your name, logo, background color, only listing antiques from Pennsylvania! Our system is flexbile [sic] enough to handle your every whim! Again, we want to provide you with the tools you need to succeed." *Custom Features*, April 22, 1999 version (emphasis removed).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
		[DFNDT0001749-0001750] "Don't worry about losing visitors either because a link back to your main home page is prominently displayed at all times within your associate site." *Custom Features*, April 22, 1999 version (emphasis removed). *[DFNDT0001749-0001750]* The owner of the first web page is the affiliate, the outsource provider is One & Only and the selected merchant is person placing the classified or personal ad.
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra*.
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra*.
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when	*See* 13-16, *supra*.

Comparison of the U.S. Patent No. 7,818,399 and One & Only Network Prior Art

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in One & Only Network Prior Art ("One & Only")
	activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra.*

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Comparison of the U.S. Patent No. 7,818,399 and IBM Prior Art

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, the IBM Prior Art anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	"[I]n some countries you can even order online." *IBM planetwide ordering information ("IBM Ordering* website), http://web.archive.org/web/19961220005843/www.ibm.com/Orders (December 20, 1996 version of www.ibm.com/Orders as archived by the Internet Archive.[1]). [2] *[DFNDT0001798]* "IBM Direct: Your source for products and services from IBM and our business partners… planetwide." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]*
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the	An owner of a first web page, IBM Credit Corporation provided a first web page entitled, *Leasing & Financing Welcome to IBM Customer Leasing and Financing* at www.financing.hosting.ibm.com, (hereinafter "*Leasing & Financing* website")[3] with a link to a web page of an outsource provider, IBM Corporation, entitled, *IBM planetwide ordering information* at www.ibm.com/Orders (i.e., the *IBM Ordering*

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[1] For more information about the Internet Archive and web pages archived therein, *see Internet Archive Frequently Asked Questions*, http://www.archive.org/about/faqs.php. *[DFNDT0001825-0001868]*

[2] *WHOIS Record ibm.com*, http://www.networksolutions.com/whois/results.jsp?whoistoken=1 (last visited August 8, 2006) (ibm.com was first registered on March 19, 1986); *[DFNDT0001821-0001824]*

[3] Other examples of IBM web pages that were "first web pages" in relation to the *IBM Ordering* website included: *The IBM Direct Planetwide home page*, http://web.archive.org/web/19961219004723/http://direct.boulder.ibm.com (December 19, 1996 version of http://direct.boulder.ibm.com as archived by the Internet Archive. (see note 1)); *[DFNDT0001802-0001807]*;
IBM Planetwide help, http://web.archive.org/web/19961026164521/www.ibm.com/Finding (October 26, 1996 version of www.ibm.com/Finding as archived by the Internet Archive. (see note 1)); *[DFNDT0001795-0001797]*; and
IBM Worldwide Customer Financing, http://web.archive.org/web/19961104165233/www.financing.hosting.ibm.com/CFWWINTR.HTM (November 4, 1996 version of www.financing.hosting.ibm.com/CFWWINTR.HTM as archived by the Internet Archive. (see note 1)); *[DFNDT0001808-0001812]*.

Comparison of the U.S. Patent No. 7,818,399 and IBM Prior Art

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
	first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	website) offering a buying opportunity of a selected one of a plurality of merchants (i.e., IBM's business partners).[4] *Leasing & Financing* website, http://web.archive.org/web/19961227153901/www.financing.hosting.ibm.com (December 27, 1996 version of www.financing.hosting.ibm.com as archived by the Internet Archive.[5]); *[DFNDT0001799-0001801]*. *1995 Annual Report Highlights*, http://web.archive.org/19961104164231/www.financing.hosting.ibm.com/ AR95CL.HTM (November 11, 1996 version of www.financing.hosting.ibm.com/AR95CL.HTM as archived by the Internet Archive.[6] (hereinafter "*1995 Annual Report of IBM Credit Corp.*")). *[DFNDT0001879-0001882]* "IBM Direct: Your source for products and services from IBM and our business partners… planetwide." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* "[I]n some countries you can even order online." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* "Order" *Leasing & Financing* web page, December 27, 1996 version (emphasis and link removed)(hyperlink to http://www.Ibm.Com/Orders/). *[DFNDT0001799-0001801]*

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[4] In another example of IBM prior art, the *IBM Ordering* website (www.ibm.com/Orders) *[DFNDT0001798]* was the "first web page" and *The IBM Direct Planetwide home page*, December 19, 1996 version (http://direct.boulder.ibm.com) *[DFNDT0001802-0001807]* was the "second web page."

[5] *Supra* note 1.

[6] *Supra* note 1.

[7] *Supra* note 1.

Comparison of the U.S. Patent No. 7,818,399 and IBM Prior Art

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		"Order" Source code for *Leasing & Financing* website, http://web.archive.org/web/19961227153901/www.financing.hosting.ibm.com (December 27, 1996 version of www.financing.hosting.ibm.com as archived by the Internet Archive.[7]). *[DFNDT0001816-0001820]* IBM Credit Corporation, IBM Corporation, and IBM's business partners are separate corporate entities and thus, are "third parties with respect to one another" *1995 Annual Report of IBM Credit Corp. [DFNDT0001879-0001882]* For example, the commerce object is a categories list of countries where the computer user can products or services from IBM and its business partners. "Direct ordering any way you prefer... To buy from IBM in your country, please select from the list below…. Planetwide ordering information: Choose a country Go *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]*
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	"HTML generated at Fri, 20 Dec 1996 00:58:45 GMT by /cgi-bin/Orders/nph-index" Source code for *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001813-0001815]* "

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		IBM Order from IBM © IBM Corporation " *IBM Ordering* website, December 20, 1996 version (header for *IBM Ordering* website). *[DFNDT0001798]* "<BODY bgcolor="#ffffff"> <A NAME=top><IMG SRC="/images/mastheads/masthead_order.gif" WIDTH=600 HEIGHT=72 ALT="IBM planetwide ordering information"></A>" Source code for *IBM Ordering* website, December 20, 1996 version (source code for header). *[DFNDT0001813-0001815]* Footer from *IBM Ordering* website: " [IBM home page | Order | Contact IBM | Legal]" *IBM Ordering* website, December 20, 1996 version (footer for *IBM Ordering* website). *[DFNDT0001798]* "<HR> &#91; <A HREF="http://www.ibm.com/">IBM home page</A> | <A HREF="http://www.ibm.com/Orders/">Order</A> | <A HREF="http://www.ibm.com/Assist/">Contact IBM</A> | <A HREF="http://www.ibm.com/Legal/">Legal</A>" Source code for *IBM Ordering* website, December 20, 1996 version (source code for footer). *[DFNDT0001813-0001815]*
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information	*See also* 3-6, *infra.* "IBM Direct: Your source for products and services from IBM and our business

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
	associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	partners… planetwide." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* "[I]n some countries you can even order online." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* Visually perceptible elements of the *IBM Ordering* website visually correspond to the *Leasing & Financing* website.[8] Specifically, both the *IBM Ordering* website and the *Leasing & Financing* website used a single column format with text in the same font, size, and black color on a white background. Unused text links were shown in blue underlined text and visited text links were shown in red underlined text on both web pages.[9] As described below, both website include similar headers and footers.[10] Additionally, the header of *IBM Ordering* website visually correspond to the header of the *Leasing & Financing* website. Both headers had the same Blue IBM® logo in the top left corner with a copyright notice below the logo. The copyright notice was separated from the Blue IBM® logo by a pink line that extended the length of the header. On the right side, both headers had a rectangular picture superposed over a portion of the pink line and a rectangular box superposed over a portion of the picture. Both rectangular boxes included text in the same font, size, and color. The text in both

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[8] Both the *IBM Ordering* website and the *Leasing & Financing* website used the default colors of the web browser of the visitor computer for text colors. In the web browser that was used to print these pages, the default colors are blue, red and black for unused text links, visited text links, and regular text respectively. The actual colors of the links and text would have varied based on the default settings of the web browser of the visitor computer.

[9] Both pages used the default text link colors of the visitor computer; *supra* note 8.

[10] Also see: *IBM PC ThinkPad* website, http://web.archive.org/web/19961219011414/http://www.pc.ibm.com/thinkpad/ (December 19, 1996 version of www. pc.ibm.com/thinkpad/ as archived by the Internet Archive; see note 1)) *[DFNDT0001893-0001904]*; *End-user Customer Financing* website, http://web.archive.org/web/19961104164326/http://www.financing.hosting.ibm.com/CFCALLIE.HTM (November 11, 1996 version of www.financing.hosting.ibm.com/CFCALLIE.HTM as archived by the Internet Archive; see note 1)); *[DFNDT0001905-0001917]*; *Remarketer Financing* website, http://web.archive.org/web/19961104164859/http://www.financing.hosting.ibm.com/CFTALBOT.HTM (November 11, 1996 version of www.financing.hosting.ibm.com/ CFTALBOT.HTM as archived by the Internet Archive; see note 1)); *[DFNDT0001918-0001927]; 1995 Annual Report of IBM Credit Corp.*, December 19, 1996 version; *[DFNDT0001879-0001882].*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		boxes was a short title or description of the web page. Header from *Leasing & Financing* website: IBM Customer financing © 1996 IBM Corporation Header from *IBM Ordering* website: IBM Order from IBM © IBM Corporation The footer of the *IBM Ordering* website visually correspond to the footer of the *Leasing & Financing* website.. The footers on both pages were separated from the rest of the web page by a grey line that extended the length of the web page. Both footers were enclosed in square brackets and comprised underlined text links in a similar font, size and blue color[11] separated by "|." Footer from *Leasing & Financing* website: **[IBM home page | Order | Search | Contact IBM | Help | (C) | (TM)]** Footer from *IBM Ordering* website: [IBM home page | Order | Contact IBM | Legal] *Leasing & Financing* website, December 27, 1996 version; *[DFNDT0001799-0001801]* and *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]*
3	The method of claim 1 wherein at least one of	Footer from *Leasing & Financing* website:

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[11] Both pages used the default text link colors of the visitor computer; *supra* note 10.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
	the plurality of visually perceptible elements includes a set of navigational links on the source page.	**[IBM home page | Order | Search | Contact IBM | Help | (C) | (TM)]** Footer from *IBM Ordering* website: [IBM home page | Order | Contact IBM | Legal] *Leasing & Financing* website, December 27, 1996 version; *[DFNDT0001799-0001801]* and *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* The blue underlined text are navigational links.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	the header of *IBM Ordering* website visually correspond to the header of the *Leasing & Financing* website. Both headers had the same Blue IBM® logo in the top left corner with a copyright notice below the logo. The copyright notice was separated from the Blue IBM® logo by a pink line that extended the length of the header. On the right side, both headers had a rectangular picture superposed over a portion of the pink line and a rectangular box superposed over a portion of the picture. Both rectangular boxes included text in the same font, size, and color. The text in both boxes was a short title or description of the web page. Header from *Leasing & Financing* website: IBM Customer financing © 1996 IBM Corporation Header from *IBM Ordering* website: IBM Order from IBM © IBM Corporation
5	The method of claim 1 wherein at least one of	The header of *IBM Ordering* website visually correspond to the header of the *Leasing*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
	the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	*& Financing* website. Both headers had the same Blue IBM® logo in the top left corner with a copyright notice below the logo. The copyright notice was separated from the Blue IBM® logo by a pink line that extended the length of the header. On the right side, both headers had a rectangular picture superposed over a portion of the pink line and a rectangular box superposed over a portion of the picture. Both rectangular boxes included text in the same font, size, and color. The text in both boxes was a short title or description of the web page. Header from *Leasing & Financing* website: IBM® Customer financing ©1996 IBM Corporation Header from *IBM Ordering* website: IBM® Order from IBM © IBM Corporation The footer of the *IBM Ordering* website visually correspond to the footer of the *Leasing & Financing* website.. The footers on both pages were separated from the rest of the web page by a grey line that extended the length of the web page. Both footers were enclosed in square brackets and comprised underlined text links in a similar font, size and blue color[12] separated by "|." Footer from *Leasing & Financing* website: [**IBM home page** | **Order** | **Search** | **Contact IBM** | **Help** | **(C)** | **(TM)**] Footer from *IBM Ordering* website:

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[12] Both pages used the default text link colors of the visitor computer; *supra* note 8.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		[IBM home page | Order | Contact IBM | Legal] *Leasing & Financing* website, December 27, 1996 version; *[DFNDT0001799-0001801]* and *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]*
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	For example, the commerce object is a categories list of countries where the computer user can products or services from IBM and its business partners. "Direct ordering any way you prefer... To buy from IBM in your country, please select from the list below…. Planetwide ordering information: " Choose a country Go!"
8	The method of claim 1 wherein the second web page is generated dynamically.	"HTML generated at Fri, 20 Dec 1996 00:58:45 GMT by /cgi-bin/Orders/nph-index" Source code for *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001813-0001815]*
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	Both the *IBM Ordering* website and the *Leasing & Financing* website used a single column format with text in the same font, size, and black color on a white background. Unused text links were shown in blue underlined text and visited text links were shown in red underlined text on both web pages.[13] As described below, both website include similar headers and footers.[14] Additionally, the header of *IBM Ordering* website visually correspond to the header of the *Leasing & Financing* website. Both headers had the same Blue IBM® logo in the top left corner with a copyright notice below the logo. The copyright notice was separated from the Blue IBM® logo by a pink line that extended the length of the header. On the right side, both headers had a rectangular picture superposed over a portion of the pink line and a rectangular box superposed over a portion of the picture. Both rectangular boxes included text in the same font, size, and color. The text in both boxes was a short title or description of the web page. Header from *Leasing & Financing* website: IBM® Customer financing ©1996 IBM Corporation Header from *IBM Ordering* website: IBM® Order from IBM © IBM Corporation The footer of the *IBM Ordering* website visually correspond to the footer of the *Leasing & Financing* website.. The footers on both pages were separated from the rest

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[13] Both pages used the default text link colors of the visitor computer; *supra* note 8.

[14] *Supra* note 10.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		of the web page by a grey line that extended the length of the web page. Both footers were enclosed in square brackets and comprised underlined text links in a similar font, size and blue color[15] separated by "|." Footer from *Leasing & Financing* website: [**IBM home page** | **Order** | **Search** | **Contact IBM** | **Help** | **(C)** | **(TM)**] Footer from *IBM Ordering* website: [IBM home page | Order | Contact IBM | Legal] *Leasing & Financing* website, December 27, 1996 version; *[DFNDT0001799-0001801]* and *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]*
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with	

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[15] Both pages used the default text link colors of the visitor computer; *supra* note 8.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
	the activated link.	
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	"HTML generated at Fri, 20 Dec 1996 00:58:45 GMT by /cgi-bin/Orders/nph-index" Source code for *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001813-0001815]* " Order from IBM © IBM Corporation " *IBM Ordering* website, December 20, 1996 version (header for *IBM Ordering* website). *[DFNDT0001798]* "<BODY bgcolor="#ffffff"> <A NAME=top><IMG SRC="/images/mastheads/masthead_order.gif" WIDTH=600 HEIGHT=72 ALT="IBM planetwide ordering information"></A>" Source code for *IBM Ordering* website, December 20, 1996 version (source code for header). *[DFNDT0001813-0001815]* Footer from *IBM Ordering* website: " [IBM home page | Order | Contact IBM | Legal]"

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		IBM Ordering website, December 20, 1996 version (footer for *IBM Ordering* website). *[DFNDT0001798]* "<HR> &#91; <A HREF="http://www.ibm.com/">IBM home page</A> | <A HREF="http://www.ibm.com/Orders/">Order</A> | <A HREF="http://www.ibm.com/Assist/">Contact IBM</A> | <A HREF="http://www.ibm.com/Legal/">Legal</A>" Source code for *IBM Ordering* website, December 20, 1996 version (source code for footer). *[DFNDT0001813-0001815]*
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.* "IBM Direct: Your source for products and services from IBM and our business partners… planetwide." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* "[I]n some countries you can even order online." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality	*See* 1(a)-1(b), *supra.* An owner of a first web page, IBM Credit Corporation provided a first web page at www.financing.hosting.ibm.com, (i.e., *Leasing & Financing* website")[16] with a link

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[16] Other examples of IBM web pages that were "first web pages" in relation to the *IBM Ordering* website included: *The IBM Direct Planetwide home page*, http://web.archive.org/web/19961219004723/http://direct.boulder.ibm.com (December 19, 1996 version of http://direct.boulder.ibm.com as archived by the Internet Archive. (see note 1)); *[DFNDT0001802-0001807]*; *IBM Planetwide help*, http://web.archive.org/web/19961026164521/www.ibm.com/Finding (October 26, 1996 version of www.ibm.com/Finding as archived by the Internet Archive. (see note 1)); *[DFNDT0001795-0001797]*; and *IBM Worldwide Customer Financing*, http://web.archive.org/web/19961104165233/www.financing.hosting.ibm.com/CFWWINTR.HTM (November 4, 1996 version of www.financing.hosting.ibm.com/CFWWINTR.HTM as archived by the Internet Archive. (see note 1)); *[DFNDT0001808-0001812]*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
	of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	to a web page of an outsource provider, IBM Corporation at www.ibm.com/Orders (i.e., the *IBM Ordering* website) offering a buying opportunity of a selected one of a plurality of merchants (i.e., IBM's business partners).[17] "IBM Direct: Your source for products and services from IBM and our business partners… planetwide." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* "[I]n some countries you can even order online." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* "Order" *Leasing & Financing* web page, December 27, 1996 version (emphasis and link removed)(hyperlink to http://www.Ibm.Com/Orders/). *[DFNDT0001799-0001801]* "Order" Source code for *Leasing & Financing* website, http://web.archive.org/web/19961227153901/www.financing.hosting.ibm.com (December 27, 1996 version of www.financing.hosting.ibm.com as archived by the Internet Archive.[18]). *[DFNDT0001816-0001820]* IBM Credit Corporation, IBM Corporation, and IBM's business partners are separate corporate entities and thus, are "third parties with respect to one another" *1995 Annual Report of IBM Credit Corp. [DFNDT0001879-0001882]* For example, the commerce object is a categories list of countries where the computer user can products or services from IBM and its business partners.

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[17] In another example of IBM prior art, the *IBM Ordering* website (www.ibm.com/Orders) *[DFNDT0001798]* was the "first web page" and *The IBM Direct Planetwide home page*, December 19, 1996 version (http://direct.boulder.ibm.com) *[DFNDT0001802-0001807]* was the "second web page."

[18] *Supra* note 1.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		"Direct ordering any way you prefer... To buy from IBM in your country, please select from the list below…. Planetwide ordering information: " Choose a country Go!" *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]*
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	*See* 1(a)-1(c), *supra.* "IBM Direct: Your source for products and services from IBM and our business partners… planetwide." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* "[I]n some countries you can even order online." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* Visually perceptible elements of the *IBM Ordering* website visually correspond to the *Leasing & Financing* website.[19] Specifically, both the *IBM Ordering* website and the *Leasing & Financing* website used a single column format with text in the same font, size, and black color on a white background. Unused text links were shown in blue underlined text and visited text links were shown in red underlined text on both web pages. As described below, both website include similar headers and footers.[20] Additionally, the header of *IBM Ordering* website visually correspond to the header of the *Leasing & Financing* website. Both headers had the same Blue IBM® logo in the top left corner with a copyright notice below the logo. The copyright notice was separated from the Blue IBM® logo by a pink line that extended the length of the header. On the right side, both headers had a rectangular picture superposed over a

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[19] Both pages used the default text link colors of the visitor computer; *supra* note 8.

[20] *Supra* note 10.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		portion of the pink line and a rectangular box superposed over a portion of the picture. Both rectangular boxes included text in the same font, size, and color. The text in both boxes was a short title or description of the web page. Header from *Leasing & Financing* website: IBM Customer financing © 1996 IBM Corporation Header from *IBM Ordering* website: IBM Order from IBM © IBM Corporation The footer of the *IBM Ordering* website visually correspond to the footer of the *Leasing & Financing* website.. The footers on both pages were separated from the rest of the web page by a grey line that extended the length of the web page. Both footers were enclosed in square brackets and comprised underlined text links in a similar font, size and blue color[21] separated by "|." Footer from *Leasing & Financing* website: [**IBM home page** | **Order** | **Search** | **Contact IBM** | **Help** | **(C)** | **(TM)**] Footer from *IBM Ordering* website: [IBM home page | Order | Contact IBM | Legal] *Leasing & Financing* website, December 27, 1996 version; *[DFNDT0001799-0001801]* and *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]*

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[21] Both pages used the default text link colors of the visitor computer; *supra* note 8.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recoguizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b)	An owner of a first web page, IBM Credit Corporation provided a first web page at www.financing.hosting.ibm.com, (i.e., *Leasing & Financing* website")[22] with a link to a web page of an outsource provider, IBM Corporation at www.ibm.com/Orders (i.e., the *IBM Ordering* website) offering a buying opportunity of a selected one of a plurality of merchants (i.e., IBM's business partners).[23] "IBM Direct: Your source for products and services from IBM and our business partners… planetwide." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* "[I]n some countries you can even order online." *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* "Order" *Leasing & Financing* web page, December 27, 1996 version (emphasis and link removed)(hyperlink to http://www.Ibm.Com/Orders/). *[DFNDT0001799-0001801]* "Order" Source code for *Leasing & Financing* website, http://web.archive.org/web/19961227153901/www.financing.hosting.ibm.com

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[22] Other examples of IBM web pages that were "first web pages" in relation to the *IBM Ordering* website included: *The IBM Direct Planetwide home page*, http://web.archive.org/web/19961219004723/http://direct.boulder.ibm.com (December 19, 1996 version of http://direct.boulder.ibm.com as archived by the Internet Archive. (see note 1)); *[DFNDT0001802-0001807]*; *IBM Planetwide help*, http://web.archive.org/web/19961026164521/www.ibm.com/Finding (October 26, 1996 version of www.ibm.com/Finding as archived by the Internet Archive. (see note 1)); *[DFNDT0001795-0001797]*; and *IBM Worldwide Customer Financing*, http://web.archive.org/web/19961104165233/www.financing.hosting.ibm.com/CFWWINTR.HTM (November 4, 1996 version of www.financing.hosting.ibm.com/CFWWINTR.HTM as archived by the Internet Archive. (see note 1)); *[DFNDT0001808-0001812]*.

[23] In another example of IBM prior art, the *IBM Ordering* website (www.ibm.com/Orders) *[DFNDT0001798]* was the "first web page" and *The IBM Direct Planetwide home page*, December 19, 1996 version (http://direct.boulder.ibm.com) *[DFNDT0001802-0001807]* was the "second web page."

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
	automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	(December 27, 1996 version of www.financing.hosting.ibm.com as archived by the Internet Archive.[24]). *[DFNDT0001816-0001820]* IBM Credit Corporation, IBM Corporation, and IBM's business partners are separate corporate entities and thus, are "third parties with respect to one another" *1995 Annual Report of IBM Credit Corp.* *[DFNDT0001879-0001882]* For example, the commerce object is a categories list of countries where the computer user can products or services from IBM and its business partners. "Direct ordering any way you prefer... To buy from IBM in your country, please select from the list below…. Planetwide ordering information: " " Choose a country Go *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]* Visually perceptible elements of the *IBM Ordering* website visually correspond to the *Leasing & Financing* website.[25] Specifically, both the *IBM Ordering* website and the *Leasing & Financing* website used a single column format with text in the same font, size, and black color on a white background. Unused text links were shown in blue underlined text and visited text links were shown in red underlined text on both web pages.[26] As described below, both website include similar headers and footers.[27]

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[24] *Supra* note 1.

[25] Both pages used the default text link colors of the visitor computer; *supra* note 8.

[26] Both pages used the default text link colors of the visitor computer; *supra* note 8.

[27] Supra note 10.

[28] Both pages used the default text link colors of the visitor computer; *supra* note 8.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		Additionally, the header of *IBM Ordering* website visually correspond to the header of the *Leasing & Financing* website. Both headers had the same Blue IBM® logo in the top left corner with a copyright notice below the logo. The copyright notice was separated from the Blue IBM® logo by a pink line that extended the length of the header. On the right side, both headers had a rectangular picture superposed over a portion of the pink line and a rectangular box superposed over a portion of the picture. Both rectangular boxes included text in the same font, size, and color. The text in both boxes was a short title or description of the web page. Header from *Leasing & Financing* website: IBM Customer financing © 1996 IBM Corporation Header from *IBM Ordering* website: IBM Order from IBM © IBM Corporation The footer of the *IBM Ordering* website visually correspond to the footer of the *Leasing & Financing* website.. The footers on both pages were separated from the rest of the web page by a grey line that extended the length of the web page. Both footers were enclosed in square brackets and comprised underlined text links in a similar font, size and blue color[28] separated by "|." Footer from *Leasing & Financing* website: [**IBM home page** | **Order** | **Search** | **Contact IBM** | **Help** | **(C)** | **(TM)**] Footer from *IBM Ordering* website: [IBM home page | Order | Contact IBM | Legal]

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		Leasing & Financing website, December 27, 1996 version; *[DFNDT0001799-0001801]* and *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001798]*
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra.* For example, the commerce object is a categories list of countries where the computer user can products or services from IBM and its business partners. "Direct ordering any way you prefer... To buy from IBM in your country, please select from the list below…. Planetwide ordering information: " Choose a country Go "
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used	

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
	to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra.* "HTML generated at Fri, 20 Dec 1996 00:58:45 GMT by /cgi-bin/Orders/nph-index" Source code for *IBM Ordering* website, December 20, 1996 version. *[DFNDT0001813-0001815]* " IBM Order from IBM © IBM Corporation " *IBM Ordering* website, December 20, 1996 version (header for *IBM Ordering* website). *[DFNDT0001798]* "<BODY bgcolor="#ffffff'> <A NAME=top><IMG SRC="/images/mastheads/masthead_order.gif' WIDTH=600 HEIGHT=72 ALT="IBM planetwide ordering information"></A>" Source code for *IBM Ordering* website, December 20, 1996 version (source code for header). *[DFNDT0001813-0001815]* Footer from *IBM Ordering* website: " [IBM home page | Order | Contact IBM | Legal]"

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in IBM Prior Art
		IBM Ordering website, December 20, 1996 version (footer for *IBM Ordering* website). *[DFNDT0001798]* "<HR> &#91; <A HREF="http://www.ibm.com/">IBM home page</A> | <A HREF="http://www.ibm.com/Orders/">Order</A> | <A HREF="http://www.ibm.com/Assist/">Contact IBM</A> | <A HREF="http://www.ibm.com/Legal/">Legal</A>" Source code for *IBM Ordering* website, December 20, 1996 version (source code for footer). *[DFNDT0001813-0001815]*

Comparison of the U.S. Patent No. 7,818,399 and Net.Commerce for OS/390 Prior Art[1, 2]

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, Net.Commerce for OS/390 anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	"Electronic commerce is one of the answers. One benefit that we can get from the Internet is to make it a primary profit source by creating a marketplace where companies will want to invest. The time has come to turn the Internet into a major business center for your company. In this book we cover Net.Commerce, a product that finally makes it possible to engage millions of users, anytime, anywhere in the age-old process of buying and selling goods, thus making the Internet truly the world's biggest marketplace." Pg. 1. "Companies that sell products or services to wholesalers and manufacturers need strong customer relationships, which often means secure communications as well as secure transactions. After all, there is no need to let the competition know what you 120 and your partners are up to. On the other hand, companies selling directly to consumers may be more concerned with a Web presence that is more open and inviting, thus making customers feel as though they are receiving more personal attention. Some companies will achieve this by duplicating the shopping experience that consumers are already familiar with, for example, by creating an online virtual mall. Yet, although the virtual mall must be openly accessible to all, the customer must ultimately have enough confidence in the retailer to engage in electronic commerce. This paradox of accessibility and security must be overcome if the Internet is to realize its full business potential. IBM has different products and services for each aspect/sector of electronic commerce, but there is one that can fit all of them, namely, Net.Commerce.

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[1] Unless noted, all citations in this chart are to Net.Commerce for OS/390 by Rich Conway, Simon Armiger, Nils Bergquist, Kevin Curley, and Jarmo Lepinen, published by International Business Machines Corporation ("IBM") in July 1998. *[DFNT0001082-0001301]*

[2] The Net.Commerce book is a user guide and technical manual for the IBM Net.Commerce product for OS/390. The Net.Commerce book provides an "introduction to electronic commerce [in 1998] and the [Net.Commerce] product itself … [and] also provides examples of Net Commerce implementations." Pg. vii.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Net.Commerce is easy-to-use software that allows you to have online stores with dynamic pages. It works with the highest standards of Internet security including the Secure Socket Layer (SSL) and Secure Electronic Transaction (SET) protocols, and works with DB2 in order to integrate existing systems. It is both flexible and scalable. It can be used for business-to-business transactions, as well as for direct consumer sales, in both cases providing state of the art transaction security. Net.Commerce allows you to be part of the electronic business world, from store setup or mall home page, and to secure transactions with the newest methods and techniques of security on the Internet. You can access gateways that work with companies internal systems, or gateways that work directly with financial institutions for payment methods." Pg. 2.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	The first web page can be the home page of the store and the second web page can be the categories page (i.e., the selected commerce object is the product categories). In different example, the categories page can be the first web page and the second web page can be the subcategories page (i.e., the selected commerce object is the product subcategories). In a third example, the subcategories page can be the first web page and the second web page can be the product page (i.e., the selected commerce object is the product). "2.4.8 Default Shopping Trip The shopping trip that is provided by Net.Commerce in the demonstration shopping mall is outlined in Figure 8. Depending on the store you are building, you may have to modify it." Pg. 24.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Shopper Store Home Page Categories Subcategory Registration Prepare an Order Shopping Cart Product Place an Order Acknowledgment Figure 8. Net.Commerce Default Shopping Trip Pg. 24. "In the default shopping process, this home page is a flat HTML file. For easier maintenance, a dynamic page would be preferable for stores with frequently changing products that still want to make offers from the home page." Pg. 20. "When you click on one of the boxes in 4, a text dialog box will appear. From the text dialog box, click on Insert, then Link. Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. Leave the Category Reference number blank for now. Click OK and the text dialog box will be filled in with some HTML link text. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link." Pg. 119. "Take into account the dynamic nature of the Internet and of Net.Commerce. Think about putting specials and sales offerings directly on your home page or in your html page footer." Pg. 18.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		"If most customers do not need the information you are displaying on the product page, you may even offer a shortcut button on the category page." Pg. 18. "This is the first thing a shopper sees when surfing to your shopping site. Besides using graphical elements to lure the shopper into your store, you may consider putting special sales offerings on this page." Pg. 20. "The category pages link shoppers to the groups of products or services available in the store. You can compare them to a table of contents in a paper catalog or signs in a real store. They have to include category titles and images, descriptions, and of course hyperlinks to subcategories or product pages." Pg. 21. "The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart. Pg. 21. Hardware Shop Gardening Tools Hand Tools Watering Tools Hammers Wrenches Watering Can Garden Hose 3 Piece Shovel Set 3 Piece Hand Tool Set Claw Hammer Ballpeen Hammer Regular Wrench Socket Wrench Figure 7. A Sample Set of Category and Product Pages Pg. 21.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		 Figure 57. Text and Link Dialog Boxes Pg. 119. Example of a first web page displays at least one active link associated with a commerce object (i.e., an OS/390 Redbook and AIX Redbook). Welcome to Redbooks Gallery Figure 61. Redbooks Gallery Home Page As Seen from Browser Pg. 121.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		 Pg. 130. *Also* see pgs. 124-130. Pg. 3.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		"For a Net.Commerce project and shopping site, you can certainly choose to develop and host everything at your own location. Or you may want to have a service provider, for instance IBM, do everything at their site. Or you may choose a combination of the two. One solution would be that the merchant has the content hosted by a dedicated service company. That way, setup and maintenance of the hardware, the network, and the customization and connection of most of the software and security components are done elsewhere. This is not as easy as hosting a normal (passive) Web site, though, because a connection to the database is needed, and testing and updating macros and APIs can be difficult." Pg. 31
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	The Net.Commerce book teaches the home pages, categories pages, and the product pages are all designed using templates. Furthermore, the Net.Commerce book teaches using a consistent layout for all web pages in a Store. Accordingly, as far as the scope of the claimed "look and feel" can be determined, the home page, categories pages, and the product pages in a Store would have "pre stored data associated with the source page." "Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "Whether the store will look like a single store or like a mall is a marketing decision. Some big stores might prefer looking like many smaller, specialized companies." Pg. 25. "The Template Designer is a Java applet-based, graphical object-oriented editing tool that allows you to create Web pages for an online mall or store, and to design and modify templates with a graphical HTML editor. You can use it to do

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		the following: · Create and update home pages, product pages, category pages, and Product Advisor pages. · Design headers and footers for the pages. · Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name)." pg. 80. "When you click on one of the boxes in 4, a text dialog box will appear. From the text dialog box, click on Insert, then Link. Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. Leave the Category Reference number blank for now. Click OK and the text dialog box will be filled in with some HTML link text. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link." Pg. 119. "Take into account the dynamic nature of the Internet and of Net.Commerce. Think about putting specials and sales offerings directly on your home page or in your html page footer." Pg. 18. "If most customers do not need the information you are displaying on the product page, you may even offer a shortcut button on the category page." Pg. 18. An example of a web page of the first web page and a second web page.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		 Pg. 121. Pg. 130. *Also* see pgs. 124-130. "6.1.13.1 Category Template Assignment

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Go to Store Manager, then Product Categories. Select your store, then click the arrow beside the store name that appears below the selection list. This lists the Categories available in your store. Click the category you wish to assign a template to, then click the Template button at the bottom of the page. Enter the template name in the Category Template Assignment form which appears. Figure 81 on page 141 shows the form as we completed it. Save the form and ensure you get a confirmation message. You can view the Template after you have saved it by clicking the View Template button." Pg. 140. "6.1.13.2 Product Template Assignment Go to Store Manager, then Product Information. Select your store and product; the Search button at the bottom of the page will search your store database for all products if you cannot remember the product SKU. The results of the search are displayed in a window at the bottom of the page. You can select one of these and it will fill the entries in the product form for you. Next click the Templates button on the task bar on the left side of the administrator page, under Product Information. You will see a form similar to that in Figure 82 on page 142. Enter the product template macro name you created in the Product Template section earlier in this chapter, in the Template form. Save the form, and check for the confirmation message. Fill in the template name (file name with *.d2w ending), save the form and click on View Template This should show you how the product template actually looks on the browser." Pg. 141. "6.1.13.3 Accessing Your Store From A Web Browser Finally, there is one last but very important link that we need to finish creating so that someone accessing your Internet shop can access the category and product template macros you have built. The link to a Category Page is an extremely important link, as it allows you to move from your home page in HTML that any browser can access by typing in a simple URL (for example http://www.itsoshop.com/rbgalore.html) to a macro that is not a simple URL. If you have a Self-Contained Store and you do not wish

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		your customers to pass through an intermediate Mall frontpage, you will need a link like this in your home page. Go to Store Manager and open the Template Designer. Select your store (in our case it is Redbooks Galore) and hit Load. Select File, Open, then select your saved HTML image. Double-click on the box that reads OS/390 Redbooks and a text dialog box will appear. This is the same text dialog box that was built in Figure 57 on page 119. We are going to replace the HTML link logic in this text dialog box, so go ahead and erase all the text in the dialog box. After all the HTML link logic text is erased, do the following: · Select Insert, then Link. A Link dialog box will appear. · Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. · Next, fill in the Category Reference number that was created in 6.1.11.1, "Enter Basic Product Information" on page 134. In our example it is 501. If you do not know what your Category Reference number is you can click on Browse and a Web browser window will display all the defined product categories. · Click OK and the text dialog box will be filled in with some HTML link text, as shown in Figure 83. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link. From Template Designer you can see what the page will look like by selecting File, then View in Browser. By clicking the link we have just created you should be taken to a page similar to that in Figure 69 on page 130. With this final link in place, you can now access your entire Internet shop from a Web browser. The footer file that we copied into the page allows you to access the shopping cart and other Net.Commerce functions. You can make the home page of your new Web site the default welcome page for your Web server by editing the Web server configuration file httpd.conf and

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		changing the Welcome Directive to match the name of your home page. Alternatively, you can simply specify the full name for the home page in your Web browser URL. To access the site we have just created you would specify http://www.itsoshop.com/rbgalore.html." Pgs. 142-4.
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	*See also* 3-6, *infra*. The first web page can be the home page of the store and the second web page can be the categories page (i.e., the selected commerce object is the product categories). In different example, the categories page can be the first web page and the second web page can be the subcategories page (i.e., the selected commerce object is the product subcategories). In a third example, the subcategories page can be the first web page and the second web page can be the product page (i.e., the selected commerce object is the product). The Net.Commerce book teaches the home pages, categories pages, and the product pages are all designed using templates. Furthermore, the Net.Commerce book teaches using a consistent layout for all web pages in a Store. Accordingly, as far as the scope of the claimed "look and feel" can be determined, the home page, categories pages, and the product pages in a Store would have a "a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page." "Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "Whether the store will look like a single store or like a mall is a marketing decision. Some big stores might prefer looking like many smaller, specialized

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		companies." Pg. 25. "The Template Designer is a Java applet-based, graphical object-oriented editing tool that allows you to create Web pages for an online mall or store, and to design and modify templates with a graphical HTML editor. You can use it to do the following: · Create and update home pages, product pages, category pages, and Product Advisor pages. · Design headers and footers for the pages. · Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name)." pg. 80. "2.4.8 Default Shopping Trip The shopping trip that is provided by Net.Commerce in the demonstration shopping mall is outlined in Figure 8. Depending on the store you are building, you may have to modify it." Pg. 24. Shopper Store Home Page Categories Subcategory Registration Prepare an Order Shopping Cart Product Place an Order Acknowledgment Figure 8. Net.Commerce Default Shopping Trip Pg. 24.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		"In the default shopping process, this home page is a flat HTML file. For easier maintenance, a dynamic page would be preferable for stores with frequently changing products that still want to make offers from the home page." Pg. 20. "When you click on one of the boxes in 4, a text dialog box will appear. From the text dialog box, click on Insert, then Link. Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. Leave the Category Reference number blank for now. Click OK and the text dialog box will be filled in with some HTML link text. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link." Pg. 119. "Take into account the dynamic nature of the Internet and of Net.Commerce. Think about putting specials and sales offerings directly on your home page or in your html page footer." Pg. 18. "If most customers do not need the information you are displaying on the product page, you may even offer a shortcut button on the category page." Pg. 18. "This is the first thing a shopper sees when surfing to your shopping site. Besides using graphical elements to lure the shopper into your store, you may consider putting special sales offerings on this page." Pg. 20. "The category pages link shoppers to the groups of products or services available in the store. You can compare them to a table of contents in a paper catalog or signs in a real store. They have to include category titles and images, descriptions, and of course hyperlinks to subcategories or product pages." Pg. 21. "The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart. Pg. 21. Pg. 21. Figure 57. Text and Link Dialog Boxes Pg. 119.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		An example of a first web page and a second web page. Pg. 121. Pg. 130. *Also* see pgs. 124-130. "6.1.13.1 Category Template Assignment Go to Store Manager, then Product Categories. Select your store, then click the arrow beside the store name that appears below the selection list. This lists the Categories available in your store. Click the category you wish to assign a template to, then click the Template button at the bottom of the page. Enter the

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		template name in the Category Template Assignment form which appears. Figure 81 on page 141 shows the form as we completed it. Save the form and ensure you get a confirmation message. You can view the Template after you have saved it by clicking the View Template button." Pg. 140. "6.1.13.2 Product Template Assignment Go to Store Manager, then Product Information. Select your store and product; the Search button at the bottom of the page will search your store database for all products if you cannot remember the product SKU. The results of the search are displayed in a window at the bottom of the page. You can select one of these and it will fill the entries in the product form for you. Next click the Templates button on the task bar on the left side of the administrator page, under Product Information. You will see a form similar to that in Figure 82 on page 142. Enter the product template macro name you created in the Product Template section earlier in this chapter, in the Template form. Save the form, and check for the confirmation message. Fill in the template name (file name with *.d2w ending), save the form and click on View Template This should show you how the product template actually looks on the browser." Pg. 141. "6.1.13.3 Accessing Your Store From A Web Browser Finally, there is one last but very important link that we need to finish creating so that someone accessing your Internet shop can access the category and product template macros you have built. The link to a Category Page is an extremely important link, as it allows you to move from your home page in HTML that any browser can access by typing in a simple URL (for example http://www.itsoshop.com/rbgalore.html) to a macro that is not a simple URL. If you have a Self-Contained Store and you do not wish your customers to pass through an intermediate Mall frontpage, you will need a link like this in your home page. Go to Store Manager and open the Template Designer. Select your store (in our

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		case it is Redbooks Galore) and hit Load. Select File, Open, then select your saved HTML image. Double-click on the box that reads OS/390 Redbooks and a text dialog box will appear. This is the same text dialog box that was built in Figure 57 on page 119. We are going to replace the HTML link logic in this text dialog box, so go ahead and erase all the text in the dialog box. After all the HTML link logic text is erased, do the following: · Select Insert, then Link. A Link dialog box will appear. · Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. · Next, fill in the Category Reference number that was created in 6.1.11.1, "Enter Basic Product Information" on page 134. In our example it is 501. If you do not know what your Category Reference number is you can click on Browse and a Web browser window will display all the defined product categories. · Click OK and the text dialog box will be filled in with some HTML link text, as shown in Figure 83. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link. From Template Designer you can see what the page will look like by selecting File, then View in Browser. By clicking the link we have just created you should be taken to a page similar to that in Figure 69 on page 130. With this final link in place, you can now access your entire Internet shop from a Web browser. The footer file that we copied into the page allows you to access the shopping cart and other Net.Commerce functions. You can make the home page of your new Web site the default welcome page for your Web server by editing the Web server configuration file httpd.conf and changing the Welcome Directive to match the name of your home page. Alternatively, you can simply specify the full name for the home page in your Web browser URL. To access the site we have just created you would specify http://www.itsoshop.com/rbgalore.html." Pgs. 142-4.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	"Think about putting specials and sales offerings directly on your home page or in your html page footer." Pg. 18 "Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "2.2.4 Use Headers and Footers Create headers that include your logo, colors and slogans that you also use in other media in order to let shoppers know which store they are in at all times. You can use the footer to offer links to the shopping cart, the order pages, and back to the product and category pages. You can also use the footer line to add links to sales offerings or to general product categories that might be interesting for all shoppers (for example, candies or fancy mousepads)." Pg. 14.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	"Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "2.2.4 Use Headers and Footers Create headers that include your logo, colors and slogans that you also use in other media in order to let shoppers know which store they are in at all times. You can use the footer to offer links to the shopping cart, the order pages, and

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		back to the product and category pages. You can also use the footer line to add links to sales offerings or to general product categories that might be interesting for all shoppers (for example, candies or fancy mousepads)." Pg. 14. "The Template Designer is a Java applet-based, graphical object-oriented editing tool that allows you to create Web pages for an online mall or store, and to design and modify templates with a graphical HTML editor. You can use it to do the following: · Create and update home pages, product pages, category pages, and Product Advisor pages. · Design headers and footers for the pages. · Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name)." pg. 80.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	"Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "2.2.4 Use Headers and Footers Create headers that include your logo, colors and slogans that you also use in other media in order to let shoppers know which store they are in at all times. You can use the footer to offer links to the shopping cart, the order pages, and back to the product and category pages. You can also use the footer line to add links to sales offerings or to general product categories that might be interesting for all shoppers (for example, candies or fancy mousepads)." Pg. 14. "The Template Designer is a Java applet-based, graphical object-oriented editing

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		tool that allows you to create Web pages for an online mall or store, and to design and modify templates with a graphical HTML editor. You can use it to do the following: · Create and update home pages, product pages, category pages, and Product Advisor pages. · Design headers and footers for the pages. · Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name)." pg. 80.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	"Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "2.2.4 Use Headers and Footers Create headers that include your logo, colors and slogans that you also use in other media in order to let shoppers know which store they are in at all times. You can use the footer to offer links to the shopping cart, the order pages, and back to the product and category pages. You can also use the footer line to add links to sales offerings or to general product categories that might be interesting for all shoppers (for example, candies or fancy mousepads)." Pg. 14.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of	"2.1.2 Product Categories To create a shopping environment where customers can easily feel at home, you should make sure they can find the products they need in the places they expect them. But, contrary to a real-life store, you can put products electronically in more than one place without using expensive shelf space. Use multiple "parents" if you want to include the product in multiple categories. For example, you could include milk in the cold drinks category as well as in the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu Net.Commerce for OS/390 ("Net.Commerce book")
	the offerings in the catalog.	dairy products category. That way, you can make sure that a product (in this case milk) will be found by customers who take different paths while browsing through your online store. Most experienced users know what they want, and they want to get to it fast. Therefore, be sure to include a fast path for them to get to the products they have bought before, and to related products. Especially on slow connections, having to browse multiple categories is not a good idea. Depending on the products you are selling, customers accept differing shopping and order processes. For example, when shopping for groceries, customers do not want to browse two categories and one product page for every product they want to buy. They may just need a "grocery list" in which they can check items and specify the amount they need. However, for more expensive products, people are willing to invest time and effort in the process of finding the right product. In these cases, offer all information the shopper needs to make a decision, and build an easy but logical navigation structure around it. Net.Commerce provides you with great flexibility to find and implement the appropriate design for products and categories and also for multiple variations of the same product (also referred to as attributes or items). Fignre 5 illustrates how such structures and relations are reflected in the Net.Commerce database:" pg. 12-3

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevaut Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		  CGRYREL CATEGORY CGPRREL PRODUCT Template SHOPGRP Price PRODPRCS PRODDSCATR PRODATR Figure 5. Data Models on Categories, Products and Items Pg. 13. "The category pages link shoppers to the groups of products or services available in the store. You can compare them to a table of contents in a paper catalog or signs in a real store. They have to include category titles and images, descriptions, and of course hyperlinks to subcategories or product pages." Pg. 21. "The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart. Pg. 21.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu Net.Commerce for OS/390 ("Net.Commerce book")
		  Watering Can Garden Hose 3 Piece Shovel Set 5 Piece Hand Tool Set Claw Hammer Ballpein Hammer Regular Wrench Socket Wrench Figure 7. A Simple Set of Category and Product Pages Pg. 21. Figure 57. Text and Link Dialog Boxes

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevaut Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Pg. 119. "6.1.9.1 Create a Category Template Open Template Designer as described before. This time select File, New, and Category Template from the list. As with the home page creation Web page description earlier in this chapter, we will go through the individual elements. Fignre 65 shows the Template Designer Category Template os390rbk.d2w that we created for the OS/390 Redbooks category. 1 shows a Text Box with a Category Name Database tag. This corresponds to the text dialog box shown in Fignre 66 on page 127. One difference in Template Designer between the HTML files and template files is the addition of a database pull-down menu in the menu bar of the text dialog box. This menu has a list of database entry names that correspond to entries that are made in the Net.Commerce administrator pages. By selecting one of these, a database tag is placed in the text box which is translated into an SQL command in the macro. In the case of the sample text box displayed in Fignre 66 on page 127, the Category Name will be pulled from the database and displayed in the text box. This makes the template dynamic, in that it could be used with many different categories. The elements in the database specific to that category will be pulled out by the database tag. This Category Template Macro will be associated with a particular category in a form later on in the building process." Pg. 126. *Also see* pg. 127-131
8	The method of claim 1 wherein the second web page is generated dynamically.	"The daemon displays store pages dynamically by retrieving the current data from a Net.Commerce database." Pg. 3 "The Net.Commerce Server daemon then communicates with DB2 using the Net.Data product (shipped with Net.Commerce) and builds a dynamically created HTML page. This HTML page contains catalog data pulled from DB2. The dynamically built HTML page is sent back through the Net.Commerce Director program, which then supplies it to the Domino Go Webserver. The Domino Go Webserver then presents the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		page to the client browser." Pg. 145 "Use the Net.Commerce Caching utility to cache dynamically generated pages. When a shopper clicks a link to view a product or category page, only small amounts of system time and resources are actually spent within the server; the rest of the time is spent parsing the HTTP request, accessing the database, and dynamically creating the HTML page the shopper wants to see. If your system receives heavy traffic and your database has a large number of products and category entries, this can significantly slow the shopping experience. Most HTTP requests on the server will be for the product and category pages (those created by the ;display/item and ;display/category commands, respectively). Since the content of product and category pages usually do not change frequently, it is not necessary for them to be dynamically recreated each time they are accessed. The Net.Commerce Caching utility speeds up the serving of HTML documents to the shopper by saving them in ASCII format in the NC_CACHE table in the database. By storing the product and category pages as plain HTML pages in the database and serving those pages without needing to dynamically recreate them, the Caching utility can significantly reduce the CPU time and increase the throughput on your server. It will also speed the download process for the shopper significantly. The Net.Commerce Caching utility uses values of NC_DMN_CACHE in the configuration file of each Net.Commerce instance to control the caching of generated pages. This value controls caching for all stores in a mall. The possible values of NC_DMN_CACHE are:

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		· 0 Disables usage of the cache. Product and category pages will all be dynamically generated. · 1 Enables read and write usage of the cache. Product and category pages will be read from the cache if they have been cached. Otherwise, they will be dynamically generated and then written to the cache. · 2 Enables read usage only of the cache. Product and category pages will be read from the cache if they exist there. Otherwise, they will be dynamically generated. No HTML pages will be written to the cache." Pg. 149-50.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	"2.5 Post-Order Processes Order fulfillment is an individual process that varies from company to company. Typically, the following tasks have to be dealt with: · Accounting · Tax calculation · Shipping · Inventory What Net.Commerce does for you is put all necessary information into the database. It is your responsibility to use this information. At the moment there is no tool provided by Net.Commerce for viewing that data, so you have to choose another way for further processing. Whichever way you decide to go from there is largely dependent on whether or not you already have backend systems in place to take care of the fulfillment processes, and what interfaces those systems provide to exchange information with Net.Commerce. The following list provides some examples: · Use tie-in applications such as Taxware or Progistics Merchant.

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		· Save output in a flat file to be picked up by other processes or batch programs. · Send extracted information as an e-mail. · Send extracted information as a fax. · Convert data to Electronic Data Interchange format (EDI), which is sometimes used for communications between existing merchant applications. · Export information to other database systems. · Develop your own APIs to send information online to existing backend applications (for instance CICS, IMS and ERP systems such as SAP R/3). · Develop your own APIs to send information to backend systems using MQSeries. Most of these options rely on the translation of the information from one format to another, even to flat files. This operation can be done online or as a batch process, depending on the fulfillment system you choose." Pgs. 24-5
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	The Net.Commerce book teaches the home pages, categories pages, and the product pages are all designed using templates. Furthermore, the Net.Commerce book teaches using a consistent layout for all web pages in a Store. "Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "Whether the store will look like a single store or like a mall is a marketing decision. Some big stores might prefer looking like many smaller, specialized companies." Pg. 25. "The Template Designer is a Java applet-based, graphical object-oriented editing tool that allows you to create Web pages for an online mall or store, and to

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		design and modify templates with a graphical HTML editor. You can use it to do the following: · Create and update home pages, product pages, category pages, and Product Advisor pages. · Design headers and footers for the pages. · Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name)." pg. 80. "Take into account the dynamic nature of the Internet and of Net.Commerce. Think about putting specials and sales offerings directly on your home page or in your html page footer." Pg. 18. Figure 37. Text and Link Dialog Boxes Pg. 119. An example of a host website and a second website.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		 Pg. 121. Pg. 130. *Also* see pgs. 124-130. "6.1.13.1 Category Template Assignment Go to Store Manager, then Product Categories. Select your store, then click the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		arrow beside the store name that appears below the selection list. This lists the Categories available in your store. Click the category you wish to assign a template to, then click the Template button at the bottom of the page. Enter the template name in the Category Template Assignment form which appears. Figure 81 on page 141 shows the form as we completed it. Save the form and ensure you get a confirmation message. You can view the Template after you have saved it by clicking the View Template button." Pg. 140. "6.1.13.2 Product Template Assignment Go to Store Manager, then Product Information. Select your store and product; the Search button at the bottom of the page will search your store database for all products if you cannot remember the product SKU. The results of the search are displayed in a window at the bottom of the page. You can select one of these and it will fill the entries in the product form for you. Next click the Templates button on the task bar on the left side of the administrator page, under Product Information. You will see a form similar to that in Figure 82 on page 142. Enter the product template macro name you created in the Product Template section earlier in this chapter, in the Template form. Save the form, and check for the confirmation message. Fill in the template name (file name with *.d2w ending), save the form and click on View Template This should show you how the product template actually looks on the browser." Pg. 141.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	"In the default shopping process, this home page is a flat HTML file. For easier maintenance, a dynamic page would be preferable for stores with frequently changing products that still want to make offers from the home page." Pg. 20. "When you click on one of the boxes in 4, a text dialog box will appear. From the text dialog box, click on Insert, then Link. Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. Leave the Category Reference number blank for now. Click OK and the text dialog box will be filled in with some HTML link text. Hit File and Close - Save Changes.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		If using our example, you will need to repeat this step for the AIX Redbooks link." Pg. 119. "2.1.2 Product Categories To create a shopping environment where customers can easily feel at home, you should make sure they can find the products they need in the places they expect them. But, contrary to a real-life store, you can put products electronically in more than one place without using expensive shelf space. Use multiple "parents" if you want to include the product in multiple categories. For example, you could include milk in the cold drinks category as well as in the dairy products category. That way, you can make sure that a product (in this case milk) will be found by customers who take different paths while browsing through your online store. Most experienced users know what they want, and they want to get to it fast. Therefore, be sure to include a fast path for them to get to the products they have bought before, and to related products. Especially on slow connections, having to browse multiple categories is not a good idea. Depending on the products you are selling, customers accept differing shopping and order processes. For example, when shopping for groceries, customers do not want to browse two categories and one product page for every product they want to buy. They may just need a "grocery list" in which they can check items and specify the amount they need. However, for more expensive products, people are willing to invest time and effort in the process of finding the right product. In these cases, offer all information the shopper needs to make a decision, and build an easy but logical navigation structure around it. Net.Commerce provides you with great flexibility to find and implement the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		appropriate design for products and categories and also for multiple variations of the same product (also referred to as attributes or items). Figure 5 illustrates how such structures and relations are reflected in the Net.Commerce database:" pg. 12-3 "6.1.9.1 Create a Category Template Open Template Designer as described before. This time select File, New, and Category Template from the list. As with the home page creation Web page description earlier in this chapter, we will go through the individual elements. Figure 65 shows the Template Designer Category Template os390rbk.d2w that we created for the OS/390 Redbooks category. 1 shows a Text Box with a Category Name Database tag. This corresponds to the text dialog box shown in Figure 66 on page 127. One difference in Template Designer between the HTML files and template files is the addition of a database pull-down menu in the menu bar of the text dialog box. This menu has a list of database entry names that correspond to entries that are made in the Net.Commerce administrator pages. By selecting one of these, a database tag is placed in the text box which is translated into an SQL command in the macro. In the case of the sample text box displayed in Figure 66 on page 127, the Category Name will be pulled from the database and displayed in the text box. This makes the template dynamic, in that it could be used with many different categories. The elements in the database specific to that category will be pulled out by the database tag. This Category Template Macro will be associated with a particular category in a form later on in the building process." Pg. 126. *Also see* pg. 127-131 "6.1.13.3 Accessing Your Store From A Web Browser Finally, there is one last but very important link that we need to finish creating so that someone accessing your Internet shop can access the category and product template macros you have built.

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		The link to a Category Page is an extremely important link, as it allows you to move from your home page in HTML that any browser can access by typing in a simple URL (for example http://www.itsoshop.com/rbgalore.html) to a macro that is not a simple URL. If you have a Self-Contained Store and you do not wish your customers to pass through an intermediate Mall frontpage, you will need a link like this in your home page. Go to Store Manager and open the Template Designer. Select your store (in our case it is Redbooks Galore) and hit Load. Select File, Open, then select your saved HTML image. Double-click on the box that reads OS/390 Redbooks and a text dialog box will appear. This is the same text dialog box that was built in Figure 57 on page 119. We are going to replace the HTML link logic in this text dialog box, so go ahead and erase all the text in the dialog box. After all the HTML link logic text is erased, do the following: · Select Insert, then Link. A Link dialog box will appear. · Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. · Next, fill in the Category Reference number that was created in 6.1.11.1, "Enter Basic Product Information" on page 134. In our example it is 501. If you do not know what your Category Reference number is you can click on Browse and a Web browser window will display all the defined product categories. · Click OK and the text dialog box will be filled in with some HTML link text, as shown in Figure 83. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link. From Template Designer you can see what the page will look like by selecting File, then View in Browser. By clicking the link we have just created you should be taken to a page similar to that in Figure 69 on page 130. With this final link in place, you can now access your entire Internet shop from a

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		Web browser. The footer file that we copied into the page allows you to access the shopping cart and other Net.Commerce functions. You can make the home page of your new Web site the default welcome page for your Web server by editing the Web server configuration file httpd.conf and changing the Welcome Directive to match the name of your home page. Alternatively, you can simply specify the full name for the home page in your Web browser URL. To access the site we have just created you would specify http://www.itsoshop.com/rbgalore.html." Pgs. 142-4.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	"2.3.1 Offering a Shopping Cart Facility The shopping cart contains products that the shopper bought before, or at least found interesting. Otherwise the shopper could use the search macro. In order to really make use of the search capabilities of Net.Commerce you may want to include additional information in the custom fields of the database or in the product attributes. A gift shop could include the target group so you can just specify buying something for your grandmother and the system will come up with ideas, or you could add some extra keywords on the use of a product, or the problems it solves." Pg. 16 "If typical shoppers of your store buy several products during one shopping trip, or if they usually want their orders shipped to more than one address, then make this easy for them. If they buy more than one product from the same category then link the "add to shopcart/shipto" button straight back to the category page. To do so, pass the category number into the product macro, and use it in the URL section of the HTML form around the "add" button. If a product uses accessories, then route the shopper to a page where these are offered. To shorten the order process, critically examine the "database" structure and table relationships for the ordering process. An example structure is shown in Figure 6 on page 19." Pg. 18

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		ORDERS paid with ORDPAYMTHD SHOPPINGS ORDERPAY records payment info for SHIPTO associates shopping info for PRODUCT MSHIPMODE shipped via shipped to SHADDR Pg. 19 "When a shopper puts a product in his or her shopping cart, a record for this will be created in the SHOPPINGS table. When the shopper issues a SHIPTO command, an entry in the SHIPTO table will be made. At the moment of ordering, a shipto address (SHADDR table), a shipmode (MSHIPMODE table) and an amount must be added. When a customer is placing an order, a row in the ORDPAYMTHD table will be made with the credit card details; a row in the ORDERPAY table will contain the tax data; and a row in the ORDERS table will be made containing the totals. The ORDERS table also contains the ORLOCK column to lock orders. In general, a Net.Commerce shopping process consists of seven tasks: · Looking at mall and store home pages · Catalog browsing · Adding products to the shopping cart · Registration · Filling out an address book entry · Providing shipping information · Ordering and payment" pg. 10

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		"The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart." Pg. 21 "2.4.3 Shopping Cart The shopping cart or basket displays the items that the shopper potentially wants to order. You should regard it as a tool for shoppers to gather interesting products with, not as a necessary step in the shopping process. It should be there for the shoppers that need it, and optional for people that do not need it. It should not be in the typical order process. Items remain in the cart until they are removed by the shopper. For registered users, the shopping basket is not only valid for the current session, but also for all subsequent sessions. Anonymous or guest shoppers lose their shopping cart information after leaving the store. However customers can select products and register later during their session without losing their products. You also have to decide on the scope of the shopping cart. The shopping cart may be made valid for the whole mall, or for only one store in the mall." Pg. 22 "Figure 80 on page 140 shows a screen shot of the Product Template with the Forms Palette and Form dialog box visible. These are used in the creation of an Add to Shopping Cart type button. First you click the Form Palette icon to get the Form Palette box. Next click the Insert Form Box icon. Draw out a box where you want your button. Make it slightly bigger than the actual button size you want. Double click the box and the Form dialog box appears. In here select the Add To Shopping Cart radio button and the Display Store Shopping Cart radio button. Close the dialog box. Click the Insert Submit Button icon on the Form Palette. Draw a box within the form box you have already created. This creates a submit button that will add the product information you have selected to the Shopping Cart. You can change the SUBMIT to something else within the submit button by double clicking it and the name in the subsequent dialog box." Pg. 139

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14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	“2.3.1 Offering a Shopping Cart Facility The shopping cart contains products that the shopper bought before, or at least found interesting. Otherwise the shopper could use the search macro. In order to really make use of the search capabilities of Net.Commerce you may want to include additional information in the custom fields of the database or in the product attributes. A gift shop could include the target group so you can just specify buying something for your grandmother and the system will come up with ideas, or you could add some extra keywords on the use of a product, or the problems it solves.” Pg. 16 “If typical shoppers of your store buy several products during one shopping trip, or if they usually want their orders shipped to more than one address, then make this easy for them. If they buy more than one product from the same category then link the “add to shopcart/shipto” button straight back to the category page. To do so, pass the category number into the product macro, and use it in the URL section of the HTML form around the “add” button. If a product uses accessories, then route the shopper to a page where these are offered. To shorten the order process, critically examine the “database” structure and table relationships for the ordering process. An example structure is shown in Figure 6 on page 19.” Pg. 18 ORDERS paid with ORDPAYMTHD SHOPPINGS contains ORDERPAY records payment info for SHIPTO specifies shipping info for PRODUCT MSHIPMODE shipped via shipped to SHADDR Figure 6. Data Model for the Ordering Process

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 (“Net.Commerce book”)
		Pg. 19 “When a shopper puts a product in his or her shopping cart, a record for this will be created in the SHOPPINGS table. When the shopper issues a SHIPTO command, an entry in the SHIPTO table will be made. At the moment of ordering, a shipto address (SHADDR table), a shipmode (MSHIPMODE table) and an amount must be added. When a customer is placing an order, a row in the ORDPAYMTHD table will be made with the credit card details; a row in the ORDERPAY table will contain the tax data; and a row in the ORDERS table will be made containing the totals. The ORDERS table also contains the ORLOCK column to lock orders. In general, a Net.Commerce shopping process consists of seven tasks: · Looking at mall and store home pages · Catalog browsing · Adding products to the shopping cart · Registration · Filling out an address book entry · Providing shipping information · Ordering and payment” pg. 10 “The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart.” Pg. 21 “2.4.3 Shopping Cart The shopping cart or basket displays the items that the shopper potentially wants to order. You should regard it as a tool for shoppers to gather interesting products with, not as a necessary step in the shopping process. It should be there for the shoppers that need it, and optional for people that do not need it. It should not be in the typical order process. Items remain in the cart until they are removed by the shopper. For registered users, the shopping basket is not only valid for the current session, but also for

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 (“Net.Commerce book”)
		all subsequent sessions. Anonymous or guest shoppers lose their shopping cart information after leaving the store. However customers can select products and register later during their session without losing their products. You also have to decide on the scope of the shopping cart. The shopping cart may be made valid for the whole mall, or for only one store in the mall.” Pg. 22 “Figure 80 on page 140 shows a screen shot of the Product Template with the Forms Palette and Form dialog box visible. These are used in the creation of an Add to Shopping Cart type button. First you click the Form Palette icon to get the Form Palette box. Next click the Insert Form Box icon. Draw out a box where you want your button. Make it slightly bigger than the actual button size you want. Double click the box and the Form dialog box appears. In here select the Add To Shopping Cart radio button and the Display Store Shopping Cart radio button. Close the dialog box. Click the Insert Submit Button icon on the Form Palette. Draw a box within the form box you have already created. This creates a submit button that will add the product information you have selected to the Shopping Cart. You can change the SUBMIT to something else within the submit button by double clicking it and the name in the subsequent dialog box.” Pg. 139
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	“2.3.1 Offering a Shopping Cart Facility The shopping cart contains products that the shopper bought before, or at least found interesting. Otherwise the shopper could use the search macro. In order to really make use of the search capabilities of Net.Commerce you may want to include additional information in the custom fields of the database or in the product attributes. A gift shop could include the target group so you can just specify buying something for your grandmother and the system will come up with ideas, or you could add some extra keywords on the use of a product, or the problems it solves.” Pg. 16 “If typical shoppers of your store buy several products during one shopping trip, or if they usually want their orders shipped to more than one address, then make this easy for them. If they buy more than one product from the same

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		category then link the “add to shopcart/shipto” button straight back to the category page. To do so, pass the category number into the product macro, and use it in the URL section of the HTML form around the “add” button. If a product uses accessories, then route the shopper to a page where these are offered. To shorten the order process, critically examine the “database” structure and table relationships for the ordering process. An example structure is shown in Figure 6 on page 19.” Pg. 18 ORDERS paid with ORDPAYMTHD SHOPPINGS contains ORDERPAY records payment info for SHIPTO specifies shipping info for PRODUCT MSHIPMODE shipped via shipped to SHADDR Figure 6. Data Model for the Ordering Process Pg. 19 “When a shopper puts a product in his or her shopping cart, a record for this will be created in the SHOPPINGS table. When the shopper issues a SHIPTO command, an entry in the SHIPTO table will be made. At the moment of ordering, a shipto address (SHADDR table), a shipmode (MSHIPMODE table) and an amount must be added. When a customer is placing an order, a row in the ORDPAYMTHD table will be made with the credit card details; a row in the ORDERPAY table will contain the tax data; and a row in the ORDERS table will be made containing the totals. The ORDERS table also contains the ORLOCK column to lock orders.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		In general, a Net.Commerce shopping process consists of seven tasks: · Looking at mall and store home pages · Catalog browsing · Adding products to the shopping cart · Registration · Filling out an address book entry · Providing shipping information · Ordering and payment" pg. 10 "The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart." Pg. 21 "2.4.3 Shopping Cart The shopping cart or basket displays the items that the shopper potentially wants to order. You should regard it as a tool for shoppers to gather interesting products with, not as a necessary step in the shopping process. It should be there for the shoppers that need it, and optional for people that do not need it. It should not be in the typical order process. Items remain in the cart until they are removed by the shopper. For registered users, the shopping basket is not only valid for the current session, but also for all subsequent sessions. Anonymous or guest shoppers lose their shopping cart information after leaving the store. However customers can select products and register later during their session without losing their products. You also have to decide on the scope of the shopping cart. The shopping cart may be made valid for the whole mall, or for only one store in the mall." Pg. 22 "Figure 80 on page 140 shows a screen shot of the Product Template with the Forms Palette and Form dialog box visible. These are used in the creation of an Add to Shopping Cart type button. First you click the Form Palette icon to get the Form Palette box. Next click the Insert Form Box icon. Draw out a box where you want your button. Make it slightly bigger than the actual button size you

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		want. Double click the box and the Form dialog box appears. In here select the Add To Shopping Cart radio button and the Display Store Shopping Cart radio button. Close the dialog box. Click the Insert Submit Button icon on the Form Palette. Draw a box within the form box you have already created. This creates a submit button that will add the product information you have selected to the Shopping Cart. You can change the SUBMIT to something else within the submit button by double clicking it and the name in the subsequent dialog box." Pg. 139
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra.* "2.5 Post-Order Processes Order fulfillment is an individual process that varies from company to company. Typically, the following tasks have to be dealt with: · Accounting · Tax calculation · Shipping · Inventory What Net.Commerce does for you is put all necessary information into the database. It is your responsibility to use this information. At the moment there is no tool provided by Net.Commerce for viewing that data, so you have to choose another way for further processing. Whichever way you decide to go from there is largely dependent on whether or not you already have backend systems in place to take care of the fulfillment processes, and what interfaces those systems provide to exchange information with Net.Commerce. The following list provides some examples: · Use tie-in applications such as Taxware or Progistics Merchant. · Save output in a flat file to be picked up by other processes or batch programs. · Send extracted information as an e-mail. · Send extracted information as a fax. · Convert data to Electronic Data Interchange format (EDI), which is sometimes used for communications between existing merchant applications. · Export information to other database systems.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		· Develop your own APIs to send information online to existing backend applications (for instance CICS, IMS and ERP systems such as SAP R/3). · Develop your own APIs to send information to backend systems using MQSeries. Most of these options rely on the translation of the information from one format to another, even to flat files. This operation can be done online or as a batch process, depending on the fulfillment system you choose." Pgs. 24-5
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	"If typical shoppers of your store buy several products during one shopping trip, or if they usually want their orders shipped to more than one address, then make this easy for them. If they buy more than one product from the same category then link the "add to shopcart/shipto" button straight back to the category page. To do so, pass the category number into the product macro, and use it in the URL section of the HTML form around the "add" button. If a product uses accessories, then route the shopper to a page where these are offered." Pg. 18
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	The Net.Commerce book teaches the home pages, categories pages, and the product pages are all designed using templates. Furthermore, the Net.Commerce book teaches using a consistent layout for all web pages in a Store. "Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "Whether the store will look like a single store or like a mall is a marketing decision. Some big stores might prefer looking like many smaller, specialized companies." Pg. 25.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		"The Template Designer is a Java applet-based, graphical object-oriented editing tool that allows you to create Web pages for an online mall or store, and to design and modify templates with a graphical HTML editor. You can use it to do the following: · Create and update home pages, product pages, category pages, and Product Advisor pages. · Design headers and footers for the pages. · Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name)." pg. 80. "Take into account the dynamic nature of the Internet and of Net.Commerce. Think about putting specials and sales offerings directly on your home page or in your html page footer." Pg. 18. Figure 57. Text and Link Dialog Boxes Pg. 119. *Also* see pgs. 124-130. "6.1.13.1 Category Template Assignment Go to Store Manager, then Product Categories. Select your store, then click the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		arrow beside the store name that appears below the selection list. This lists the Categories available in your store. Click the category you wish to assign a template to, then click the Template button at the bottom of the page. Enter the template name in the Category Template Assignment form which appears. Figure 81 on page 141 shows the form as we completed it. Save the form and ensure you get a confirmation message. You can view the Template after you have saved it by clicking the View Template button." Pg. 140. "6.1.13.2 Product Template Assignment Go to Store Manager, then Product Information. Select your store and product; the Search button at the bottom of the page will search your store database for all products if you cannot remember the product SKU. The results of the search are displayed in a window at the bottom of the page. You can select one of these and it will fill the entries in the product form for you. Next click the Templates button on the task bar on the left side of the administrator page, under Product Information. You will see a form similar to that in Figure 82 on page 142. Enter the product template macro name you created in the Product Template section earlier in this chapter, in the Template form. Save the form, and check for the confirmation message. Fill in the template name (file name with *.d2w ending), save the form and click on View Template This should show you how the product template actually looks on the browser." Pg. 141.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.* "Electronic commerce is one of the answers. One benefit that we can get from the Internet is to make it a primary profit source by creating a marketplace where companies will want to invest. The time has come to turn the Internet into a major business center for your company. In this book we cover Net.Commerce, a product that finally makes it possible to engage millions of users, anytime, anywhere in the age-old process of buying and selling goods, thus making the Internet truly the world's biggest marketplace." Pg. 1.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		"Companies that sell products or services to wholesalers and manufacturers need strong customer relationships, which often means secure communications as well as secure transactions. After all, there is no need to let the competition know what you and your partners are up to. On the other hand, companies selling directly to consumers may be more concerned with a Web presence that is more open and inviting, thus making customers feel as though they are receiving more personal attention. Some companies will achieve this by duplicating the shopping experience that consumers are already familiar with, for example, by creating an online virtual mall. Yet, although the virtual mall must be openly accessible to all, the customer must ultimately have enough confidence in the retailer to engage in electronic commerce. This paradox of accessibility and security must be overcome if the Internet is to realize its full business potential. IBM has different products and services for each aspect/sector of electronic commerce, but there is one that can fit all of them, namely, Net.Commerce. Net.Commerce is easy-to-use software that allows you to have online stores with dynamic pages. It works with the highest standards of Internet security including the Secure Socket Layer (SSL) and Secure Electronic Transaction (SET) protocols, and works with DB2 in order to integrate existing systems. It is both flexible and scalable. It can be used for business-to-business transactions, as well as for direct consumer sales, in both cases providing state of the art transaction security. Net.Commerce allows you to be part of the electronic business world, from store setup or mall home page, and to secure transactions with the newest methods and techniques of security on the Internet. You can access gateways that work with companies internal systems, or gateways that work directly with financial institutions for payment methods." Pg. 2.
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually	*See* 1(a)-1(b), *supra.* The first web page can be the home page of the store and the second web page can be

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
	perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	the categories page (i.e., the selected commerce object is the product categories). In different example, the categories page can be the first web page and the second web page can be the subcategories page (i.e., the selected commerce object is the product subcategories). In a third example, the subcategories page can be the first web page and the second web page can be the product page (i.e., the selected commerce object is the product). The Net.Commerce book teaches the home pages, categories pages, and the product pages are all designed using templates. Furthermore, the Net.Commerce book teaches using a consistent layout for all web pages in a Store. Accordingly, as far as the scope of the claimed "look and feel" can be determined, the home page, categories pages, and the product pages in a Store would have a "a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page." "Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "Whether the store will look like a single store or like a mall is a marketing decision. Some big stores might prefer looking like many smaller, specialized companies." Pg. 25. "The Template Designer is a Java applet-based, graphical object-oriented editing tool that allows you to create Web pages for an online mall or store, and to design and modify templates with a graphical HTML editor. You can use it to do the following: · Create and update home pages, product pages, category pages, and Product Advisor pages.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		· Design headers and footers for the pages. · Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name)." pg. 80. "2.4.8 Default Shopping Trip The shopping trip that is provided by Net.Commerce in the demonstration shopping mall is outlined in Figure 8. Depending on the store you are building, you may have to modify it." Pg. 24. Shopper Store Home Page Categories Subcategory Registration Prepare an Order Shopping Cart Product Place an Order Acknowledgment Figure 8. Net.Commerce Default Shopping Trip Pg. 24. "In the default shopping process, this home page is a flat HTML file. For easier maintenance, a dynamic page would be preferable for stores with frequently changing products that still want to make offers from the home page." Pg. 20. "When you click on one of the boxes in 4, a text dialog box will appear. From the text dialog box, click on Insert, then Link. Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu Net.Commerce for OS/390 ("Net.Commerce book")
		The Merchant Reference number should already be filled in. Leave the Category Reference number blank for now. Click OK and the text dialog box will be filled in with some HTML link text. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link." Pg. 119. "Take into account the dynamic nature of the Internet and of Net.Commerce. Think about putting specials and sales offerings directly on your home page or in your html page footer." Pg. 18. "If most customers do not need the information you are displaying on the product page, you may even offer a shortcut button on the category page." Pg. 18. "This is the first thing a shopper sees when surfing to your shopping site. Besides using graphical elements to lure the shopper into your store, you may consider putting special sales offerings on this page." Pg. 20. "The category pages link shoppers to the groups of products or services available in the store. You can compare them to a table of contents in a paper catalog or signs in a real store. They have to include category titles and images, descriptions, and of course hyperlinks to subcategories or product pages." Pg. 21. "The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart. Pg. 21.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevaut Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Hardware Store Gardening Tools Hand Tools Watering Can Garden Hose 5 Piece Shovel Set 3 Piece Hand Tool Set Claw Hammer Ballpein Hammer Regular Wrench Socket Wrench Figure 7. A Simple Set of Category and Product Pages Pg. 21. Figure 57. Text and Link Dialog Boxes

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu Net.Commerce for OS/390 ("Net.Commerce book")
		Pg. 119. An example of a first web page and a second web page. Welcome to Redbooks Catalog! Pg. 121.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevaut Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Pg. 130. *Also* see pgs. 124-130. "6.1.13.1 Category Template Assignment Go to Store Manager, then Product Categories. Select your store, then click the arrow beside the store name that appears below the selection list. This lists the Categories available in your store. Click the category you wish to assign a template to, then click the Template button at the bottom of the page. Enter the template name in the Category Template Assignment form which appears. Fignre 81 on page 141 shows the form as we completed it. Save the form and ensure you get a confirmation message. You can view the Template after you have saved it by clicking the View Template button." Pg. 140. "6.1.13.2 Product Template Assignment Go to Store Manager, then Product Information. Select your store and product; the Search button at the bottom of the page will search your store database for all products if you cannot remember the product SKU. The results of the search are displayed in a window at the bottom of the page. You can select one of these and it will fill the entries in the product form for you. Next click the Templates button on the task bar on the left side of the administrator page, under Product Information. You will see a form similar to that in Fignre 82 on page 142. Enter the product template macro name you created in the Product Template section earlier in this chapter, in the Template form. Save the form, and check for the confirmation message. Fill in the template name (file name with *.d2w ending), save the form and click on View Template This should show you how the product template actually looks on the browser." Pg. 141. "6.1.13.3 Accessing Your Store From A Web Browser Finally, there is one last but very important link that we need to finish creating so that someone accessing your Internet shop can access the category and product template macros you have built. The link to a Category Page is an extremely important link, as it allows you to move from your home page in HTML that any browser can access by typing in a

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		simple URL (for example http://www.itsoshop.com/rbgalore.html) to a macro that is not a simple URL. If you have a Self-Contained Store and you do not wish your customers to pass through an intermediate Mall frontpage, you will need a link like this in your home page. Go to Store Manager and open the Template Designer. Select your store (in our case it is Redbooks Galore) and hit Load. Select File, Open, then select your saved HTML image. Double-click on the box that reads OS/390 Redbooks and a text dialog box will appear. This is the same text dialog box that was built in Figure 57 on page 119. We are going to replace the HTML link logic in this text dialog box, so go ahead and erase all the text in the dialog box. After all the HTML link logic text is erased, do the following: · Select Insert, then Link. A Link dialog box will appear. · Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. · Next, fill in the Category Reference number that was created in 6.1.11.1, "Enter Basic Product Information" on page 134. In our example it is 501. If you do not know what your Category Reference number is you can click on Browse and a Web browser window will display all the defined product categories. · Click OK and the text dialog box will be filled in with some HTML link text, as shown in Figure 83. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link. From Template Designer you can see what the page will look like by selecting File, then View in Browser. By clicking the link we have just created you should be taken to a page similar to that in Figure 69 on page 130. With this final link in place, you can now access your entire Internet shop from a Web browser. The footer file that we copied into the page allows you to access the shopping cart and other Net.Commerce functions.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		You can make the home page of your new Web site the default welcome page for your Web server by editing the Web server configuration file httpd.conf and changing the Welcome Directive to match the name of your home page. Alternatively, you can simply specify the full name for the home page in your Web browser URL. To access the site we have just created you would specify http://www.itsoshop.com/rbgalore.html." Pgs. 142-4. The Net.Commerce System Net.Commerce Administrator Site Manager Store Manager Template Designer Product Advisor Online Information Net.Commerce Server Net.Data Web Server Net.Commerce Director DB2 Merchant Shoppers Figure 1. The Net.Commerce System Pg. 3.
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the	*See* 1(a)-1(c), *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
	computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	The first web page can be the home page of the store and the second web page can be the categories page (i.e., the selected commerce object is the product categories). In different example, the categories page can be the first web page and the second web page can be the subcategories page (i.e., the selected commerce object is the product subcategories). In a third example, the subcategories page can be the first web page and the second web page can be the product page (i.e., the selected commerce object is the product). The Net.Commerce book teaches the home pages, categories pages, and the product pages are all designed using templates. Furthermore, the Net.Commerce book teaches using a consistent layout for all web pages in a Store. Accordingly, as far as the scope of the claimed "look and feel" can be determined, the home page, categories pages, and the product pages in a Store would have a "a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page." "Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "Whether the store will look like a single store or like a mall is a marketing decision. Some big stores might prefer looking like many smaller, specialized companies." Pg. 25. "The Template Designer is a Java applet-based, graphical object-oriented editing tool that allows you to create Web pages for an online mall or store, and to design and modify templates with a graphical HTML editor. You can use it to do the following: · Create and update home pages, product pages, category pages, and Product

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Advisor pages. · Design headers and footers for the pages. · Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name)." pg. 80. "2.4.8 Default Shopping Trip The shopping trip that is provided by Net.Commerce in the demonstration shopping mall is outlined in Figure 8. Depending on the store you are building, you may have to modify it." Pg. 24. Shopper Store Home Page Categories Subcategory Registration Prepare an Order Shopping Cart Product Place an Order Acknowledgment Figure 8. Net.Commerce Default Shopping Trip Pg. 24. "In the default shopping process, this home page is a flat HTML file. For easier maintenance, a dynamic page would be preferable for stores with frequently changing products that still want to make offers from the home page." Pg. 20. "When you click on one of the boxes in 4, a text dialog box will appear. From the text dialog box, click on Insert, then Link. Select Category Page

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. Leave the Category Reference number blank for now. Click OK and the text dialog box will be filled in with some HTML link text. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link." Pg. 119. "Take into account the dynamic nature of the Internet and of Net.Commerce. Think about putting specials and sales offerings directly on your home page or in your html page footer." Pg. 18. "If most customers do not need the information you are displaying on the product page, you may even offer a shortcut button on the category page." Pg. 18. "This is the first thing a shopper sees when surfing to your shopping site. Besides using graphical elements to lure the shopper into your store, you may consider putting special sales offerings on this page." Pg. 20. "The category pages link shoppers to the groups of products or services available in the store. You can compare them to a table of contents in a paper catalog or signs in a real store. They have to include category titles and images, descriptions, and of course hyperlinks to subcategories or product pages." Pg. 21. "The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart. Pg. 21.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Hardware Store Gardening Tools Hand Tools Watering Tools Garden Utensils Hammers Wrenches Watering Can Garden Hose 3 Piece Shovel Set 3 Piece Hand Tool Set Claw Hammer Ballpein Hammer Regular Wrench Socket Wrench Figure 7. A Simple Set of Category and Product Pages Pg. 21. Figure 57. Text and Link Dialog Boxes

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Pg. 119. An example of a first web page and a second web page. Welcome to Redbooks Galore! Figure 60. Redbooks Galore Home Page As Seen from Browser Pg. 121. Pg. 130. *Also* see pgs. 124-130. "6.1.13.1 Category Template Assignment Go to Store Manager, then Product Categories. Select your store, then click the arrow beside the store name that appears below the selection list. This lists the

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Categories available in your store. Click the category you wish to assign a template to, then click the Template button at the bottom of the page. Enter the template name in the Category Template Assignment form which appears. Figure 81 on page 141 shows the form as we completed it. Save the form and ensure you get a confirmation message. You can view the Template after you have saved it by clicking the View Template button." Pg. 140. "6.1.13.2 Product Template Assignment Go to Store Manager, then Product Information. Select your store and product; the Search button at the bottom of the page will search your store database for all products if you cannot remember the product SKU. The results of the search are displayed in a window at the bottom of the page. You can select one of these and it will fill the entries in the product form for you. Next click the Templates button on the task bar on the left side of the administrator page, under Product Information. You will see a form similar to that in Figure 82 on page 142. Enter the product template macro name you created in the Product Template section earlier in this chapter, in the Template form. Save the form, and check for the confirmation message. Fill in the template name (file name with *.d2w ending), save the form and click on View Template This should show you how the product template actually looks on the browser." Pg. 141. "6.1.13.3 Accessing Your Store From A Web Browser Finally, there is one last but very important link that we need to finish creating so that someone accessing your Internet shop can access the category and product template macros you have built. The link to a Category Page is an extremely important link, as it allows you to move from your home page in HTML that any browser can access by typing in a simple URL (for example http://www.itsoshop.com/rbgalore.html) to a macro that is not a simple URL. If you have a Self-Contained Store and you do not wish your customers to pass through an intermediate Mall frontpage, you will need a link like this in your home page.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Go to Store Manager and open the Template Designer. Select your store (in our case it is Redbooks Galore) and hit Load. Select File, Open, then select your saved HTML image. Double-click on the box that reads OS/390 Redbooks and a text dialog box will appear. This is the same text dialog box that was built in Figure 57 on page 119. We are going to replace the HTML link logic in this text dialog box, so go ahead and erase all the text in the dialog box. After all the HTML link logic text is erased, do the following: · Select Insert, then Link. A Link dialog box will appear. · Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. · Next, fill in the Category Reference number that was created in 6.1.11.1, "Enter Basic Product Information" on page 134. In our example it is 501. If you do not know what your Category Reference number is you can click on Browse and a Web browser window will display all the defined product categories. · Click OK and the text dialog box will be filled in with some HTML link text, as shown in Figure 83. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link. From Template Designer you can see what the page will look like by selecting File, then View in Browser. By clicking the link we have just created you should be taken to a page similar to that in Figure 69 on page 130. With this final link in place, you can now access your entire Internet shop from a Web browser. The footer file that we copied into the page allows you to access the shopping cart and other Net.Commerce functions. You can make the home page of your new Web site the default welcome page for your Web server by editing the Web server configuration file httpd.conf and changing the Welcome Directive to match the name of your home page. Alternatively, you can simply specify the full name for the home page in your

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Web browser URL. To access the site we have just created you would specify http://www.itsoshop.com/rbgalore.html." Pgs. 142-4.
	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually	"Electronic commerce is one of the answers. One benefit that we can get from the Internet is to make it a primary profit source by creating a marketplace where companies will want to invest. The time has come to turn the Internet into a major business center for your company. In this book we cover Net.Commerce, a product that finally makes it possible to engage millions of users, anytime, anywhere in the age-old process of buying and selling goods, thus making the Internet truly the world's biggest marketplace." Pg. 1. "Companies that sell products or services to wholesalers and manufacturers need strong customer relationships, which often means secure communications as well as secure transactions. After all, there is no need to let the competition know what you and your partners are up to. On the other hand, companies selling directly to consumers may be more concerned with a Web presence that is more open and inviting, thus making customers feel as though they are receiving more personal attention. Some companies will achieve this by duplicating the shopping experience that consumers are already familiar with, for example, by creating an online virtual mall. Yet, although the virtual mall must be openly accessible to all, the customer must ultimately have enough confidence in the retailer to engage in electronic commerce. This paradox of accessibility and security must be overcome if the Internet is to realize its full business potential. IBM has different products and services for each aspect/sector of electronic commerce, but there is one that can fit all of them, namely, Net.Commerce. Net.Commerce is easy-to-use software that allows you to have online stores with dynamic pages. It works with the highest standards of Internet security including the Secure Socket Layer (SSL) and Secure Electronic Transaction (SET) protocols, and works with DB2 in order to integrate existing systems. It is both flexible and scalable. It can be used for business-to-business transactions, as well as for direct consumer sales, in both cases providing state of the art

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
	corresponding to the source page.	transaction security. Net.Commerce allows you to be part of the electronic business world, from store setup or mall home page, and to secure transactions with the newest methods and techniques of security on the Internet. You can access gateways that work with companies internal systems, or gateways that work directly with financial institutions for payment methods." Pg. 2. The first web page can be the home page of the store and the second web page can be the categories page (i.e., the selected commerce object is the product categories). In different example, the categories page can be the first web page and the second web page can be the subcategories page (i.e., the selected commerce object is the product subcategories). In a third example, the subcategories page can be the first web page and the second web page can be the product page (i.e., the selected commerce object is the product). The Net.Commerce book teaches the home pages, categories pages, and the product pages are all designed using templates. Furthermore, the Net.Commerce book teaches using a consistent layout for all web pages in a Store. Accordingly, as far as the scope of the claimed "look and feel" can be determined, the home page, categories pages, and the product pages in a Store would have a "a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page." "Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "Whether the store will look like a single store or like a mall is a marketing

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		decision. Some big stores might prefer looking like many smaller, specialized companies." Pg. 25. "The Template Designer is a Java applet-based, graphical object-oriented editing tool that allows you to create Web pages for an online mall or store, and to design and modify templates with a graphical HTML editor. You can use it to do the following: · Create and update home pages, product pages, category pages, and Product Advisor pages. · Design headers and footers for the pages. · Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name)." pg. 80. "2.4.8 Default Shopping Trip The shopping trip that is provided by Net.Commerce in the demonstration shopping mall is outlined in Figure 8. Depending on the store you are building, you may have to modify it." Pg. 24. Shopper Store Home Page Categories Subcategory Registration Prepare an Order Shopping Cart Product Place an Order Acknowledgment Pg. 24. "In the default shopping process, this home page is a flat HTML file. For easier maintenance, a dynamic page would be preferable for stores with frequently

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		changing products that still want to make offers from the home page." Pg. 20. "When you click on one of the boxes in 4, a text dialog box will appear. From the text dialog box, click on Insert, then Link. Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. Leave the Category Reference number blank for now. Click OK and the text dialog box will be filled in with some HTML link text. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link." Pg. 119. "Take into account the dynamic nature of the Internet and of Net.Commerce. Think about putting specials and sales offerings directly on your home page or in your html page footer." Pg. 18. "If most customers do not need the information you are displaying on the product page, you may even offer a shortcut button on the category page." Pg. 18. "This is the first thing a shopper sees when surfing to your shopping site. Besides using graphical elements to lure the shopper into your store, you may consider putting special sales offerings on this page." Pg. 20. "The category pages link shoppers to the groups of products or services available in the store. You can compare them to a table of contents in a paper catalog or signs in a real store. They have to include category titles and images, descriptions, and of course hyperlinks to subcategories or product pages." Pg. 21. "The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart. Pg. 21.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		  Watering Can Garden Hose 6 Piece Shovel Set 9 Piece Hand Tool Set Claw Hammer Ballpeen Hammer Regular Wrench Socket Wrench Figure 7. A Sample Set of Category and Product Pages Pg. 21. Figure 57. Text and Link Dialog Boxes Pg. 119. An example of a first web page and a second web page.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		 Welcome to Redbooks Galore! Figure 60. Redbooks Galore Home Page As Seen From Browser Pg. 121. Pg. 130. *Also* see pgs. 124-130. "6.1.13.1 Category Template Assignment Go to Store Manager, then Product Categories. Select your store, then click the arrow beside the store name that appears below the selection list. This lists the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Categories available in your store. Click the category you wish to assign a template to, then click the Template button at the bottom of the page. Enter the template name in the Category Template Assignment form which appears. Figure 81 on page 141 shows the form as we completed it. Save the form and ensure you get a confirmation message. You can view the Template after you have saved it by clicking the View Template button." Pg. 140. "6.1.13.2 Product Template Assignment Go to Store Manager, then Product Information. Select your store and product; the Search button at the bottom of the page will search your store database for all products if you cannot remember the product SKU. The results of the search are displayed in a window at the bottom of the page. You can select one of these and it will fill the entries in the product form for you. Next click the Templates button on the task bar on the left side of the administrator page, under Product Information. You will see a form similar to that in Figure 82 on page 142. Enter the product template macro name you created in the Product Template section earlier in this chapter, in the Template form. Save the form, and check for the confirmation message. Fill in the template name (file name with *.d2w ending), save the form and click on View Template This should show you how the product template actually looks on the browser." Pg. 141. "6.1.13.3 Accessing Your Store From A Web Browser Finally, there is one last but very important link that we need to finish creating so that someone accessing your Internet shop can access the category and product template macros you have built. The link to a Category Page is an extremely important link, as it allows you to move from your home page in HTML that any browser can access by typing in a simple URL (for example http://www.itsoshop.com/rbgalore.html) to a macro that is not a simple URL. If you have a Self-Contained Store and you do not wish your customers to pass through an intermediate Mall frontpage, you will need a link like this in your home page.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Go to Store Manager and open the Template Designer. Select your store (in our case it is Redbooks Galore) and hit Load. Select File, Open, then select your saved HTML image. Double-click on the box that reads OS/390 Redbooks and a text dialog box will appear. This is the same text dialog box that was built in Figure 57 on page 119. We are going to replace the HTML link logic in this text dialog box, so go ahead and erase all the text in the dialog box. After all the HTML link logic text is erased, do the following: · Select Insert, then Link. A Link dialog box will appear. · Select Category Page from the Link to item and type OS/390 Redbooks in the Linked Text field. The Merchant Reference number should already be filled in. · Next, fill in the Category Reference number that was created in 6.1.11.1, "Enter Basic Product Information" on page 134. In our example it is 501. If you do not know what your Category Reference number is you can click on Browse and a Web browser window will display all the defined product categories. · Click OK and the text dialog box will be filled in with some HTML link text, as shown in Figure 83. Hit File and Close - Save Changes. If using our example, you will need to repeat this step for the AIX Redbooks link. From Template Designer you can see what the page will look like by selecting File, then View in Browser. By clicking the link we have just created you should be taken to a page similar to that in Figure 69 on page 130. With this final link in place, you can now access your entire Internet shop from a Web browser. The footer file that we copied into the page allows you to access the shopping cart and other Net.Commerce functions. You can make the home page of your new Web site the default welcome page for your Web server by editing the Web server configuration file httpd.conf and changing the Welcome Directive to match the name of your home page. Alternatively, you can simply specify the full name for the home page in your

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Web browser URL. To access the site we have just created you would specify http://www.itsoshop.com/rbgalore.html." Pgs. 142-4. The Net.Commerce System Net.Commerce Administrator Site Manager Store Manager Template Designer Product Advisor Online Information Net.Commerce Daemon Net.Data Web server Net.Commerce Director Merchant Shoppers Figure 1. The Net.Commerce System Pg. 3.
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or	*See* 7, *supra.* "2.1.2 Product Categories To create a shopping environment where customers can easily feel at home, you should make sure they can find the products they need in the places they expect

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
	more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	them. But, contrary to a real-life store, you can put products electronically in more than one place without using expensive shelf space. Use multiple "parents" if you want to include the product in multiple categories. For example, you could include milk in the cold drinks category as well as in the dairy products category. That way, you can make sure that a product (in this case milk) will be found by customers who take different paths while browsing through your online store. Most experienced users know what they want, and they want to get to it fast. Therefore, be sure to include a fast path for them to get to the products they have bought before, and to related products. Especially on slow connections, having to browse multiple categories is not a good idea. Depending on the products you are selling, customers accept differing shopping and order processes. For example, when shopping for groceries, customers do not want to browse two categories and one product page for every product they want to buy. They may just need a "grocery list" in which they can check items and specify the amount they need. However, for more expensive products, people are willing to invest time and effort in the process of finding the right product. In these cases, offer all information the shopper needs to make a decision, and build an easy but logical navigation structure around it. Net.Commerce provides you with great flexibility to find and implement the appropriate design for products and categories and also for multiple variations of the same product (also referred to as attributes or items). Figure 5 illustrates how such structures and relations are reflected in the Net.Commerce database:" pg. 12-3

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		CATEGORY categorized by Template SHOPGRP Price PRODUCT Figure 5. Data Models on Categories, Products and Items Pg. 13. "The category pages link shoppers to the groups of products or services available in the store. You can compare them to a table of contents in a paper catalog or signs in a real store. They have to include category titles and images, descriptions, and of course hyperlinks to subcategories or product pages." Pg. 21. "The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart. Pg. 21.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu Net.Commerce for OS/390 (“Net.Commerce book”)
		 Pg. 21. Pg. 119. “6.1.9.1 Create a Category Template

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevaut Disclosure in Net.Commerce for OS/390 (“Net.Commerce book”)
		Open Template Desiguer as described before. This time select File, New, and Category Template from the list. As with the home page creation Web page description earlier in this chapter, we will go through the individual elements. Figure 65 shows the Template Desiguer Category Template os390rbk.d2w that we created for the OS/390 Redbooks category. 1 shows a Text Box with a Category Name Database tag. This corresponds to the text dialog box shown in Figure 66 on page 127. One difference in Template Desiguer between the HTML files and template files is the addition of a database pull-down menu in the menu bar of the text dialog box. This menu has a list of database entry names that correspond to entries that are made in the Net.Commerce administrator pages. By selecting one of these, a database tag is placed in the text box which is translated into an SQL command in the macro. In the case of the sample text box displayed in Figure 66 on page 127, the Category Name will be pulled from the database and displayed in the text box. This makes the template dynamic, in that it could be used with many different categories. The elements in the database specific to that category will be pulled out by the database tag. This Category Template Macro will be associated with a particular category in a form later on in the building process.” Pg. 126. *Also see* pg. 127-131
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra.* “2.5 Post-Order Processes Order fulfillment is an individual process that varies from company to company. Typically, the following tasks have to be dealt with: · Accounting · Tax calculation · Shipping · Inventory What Net.Commerce does for you is put all necessary information into the database. It is your responsibility to use this information. At the moment there

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu Net.Commerce for OS/390 (“Net.Commerce book”)
		is no tool provided by Net.Commerce for viewing that data, so you have to choose another way for further processing. Whichever way you decide to go from there is largely dependent on whether or not you already have backend systems in place to take care of the fulfillment processes, and what interfaces those systems provide to exchange information with Net.Commerce. The following list provides some examples: · Use tie-in applications such as Taxware or Progistics Merchant. · Save output in a flat file to be picked up by other processes or batch programs. · Send extracted information as an e-mail. · Send extracted information as a fax. · Convert data to Electronic Data Interchange format (EDI), which is sometimes used for communications between existing merchant applications. · Export information to other database systems. · Develop your own APIs to send information online to existing backend applications (for instance CICS, IMS and ERP systems such as SAP R/3). · Develop your own APIs to send information to backend systems using MQSeries. Most of these options rely on the translation of the information from one format to another, even to flat files. This operation can be done online or as a batch process, depending on the fulfillment system you choose.” Pgs. 24-5
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used	*See* 13-16, *supra.* “2.3.1 Offering a Shopping Cart Facility The shopping cart contains products that the shopper bought before, or at least found interesting. Otherwise the shopper could use the search macro. In order to really make use of the search capabilities of Net.Commerce you may want to include additional information in the custom fields of the database or in the product attributes. A gift shop could include the target group so you can just specify buying something for your grandmother and the system will come up with ideas, or you could add some extra keywords on the use of a product, or

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevaut Disclosure in Net.Commerce for OS/390 (“Net.Commerce book”)
	to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	the problems it solves.” Pg. 16 “If typical shoppers of your store buy several products during one shopping trip, or if they usually want their orders shipped to more than one address, then make this easy for them. If they buy more than one product from the same category then link the “add to shopcart/shipto” button straight back to the category page. To do so, pass the category number into the product macro, and use it in the URL section of the HTML form around the “add” button. If a product uses accessories, then route the shopper to a page where these are offered. To shorten the order process, critically examine the “database” structure and table relationships for the ordering process. An example structure is shown in Figure 6 on page 19.” Pg. 18 Pg. 19 “When a shopper puts a product in his or her shopping cart, a record for this will be created in the SHOPPINGS table. When the shopper issues a SHIPTO command, an entry in the SHIPTO table will be made. At the moment of ordering, a shipto address (SHADDR table), a shipmode (MSHIPMODE table) and an amount must be added.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu Net.Commerce for OS/390 ("Net.Commerce book")
		When a customer is placing an order, a row in the ORDPAYMTHD table will be made with the credit card details; a row in the ORDERPAY table will contain the tax data; and a row in the ORDERS table will be made containing the totals. The ORDERS table also contains the ORLOCK column to lock orders. In general, a Net.Commerce shopping process consists of seven tasks: · Looking at mall and store home pages · Catalog browsing · Adding products to the shopping cart · Registration · Filling out an address book entry · Providing shipping information · Ordering and payment" pg. 10 "The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart." Pg. 21 "2.4.3 Shopping Cart The shopping cart or basket displays the items that the shopper potentially wants to order. You should regard it as a tool for shoppers to gather interesting products with, not as a necessary step in the shopping process. It should be there for the shoppers that need it, and optional for people that do not need it. It should not be in the typical order process. Items remain in the cart until they are removed by the shopper. For registered users, the shopping basket is not only valid for the current session, but also for all subsequent sessions. Anonymous or guest shoppers lose their shopping cart information after leaving the store. However customers can select products and register later during their session without losing their products. You also have to decide on the scope of the shopping cart. The shopping cart may be made valid for the whole mall, or for only one store in the mall." Pg. 22 "Figure 80 on page 140 shows a screen shot of the Product Template with the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevaut Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		Forms Palette and Form dialog box visible. These are used in the creation of an Add to Shopping Cart type button. First you click the Form Palette icon to get the Form Palette box. Next click the Insert Form Box icon. Draw out a box where you want your button. Make it slightly bigger than the actual button size you want. Double click the box and the Form dialog box appears. In here select the Add To Shopping Cart radio button and the Display Store Shopping Cart radio button. Close the dialog box. Click the Insert Submit Button icon on the Form Palette. Draw a box within the form box you have already created. This creates a submit button that will add the product information you have selected to the Shopping Cart. You can change the SUBMIT to something else within the submit button by double clicking it and the name in the subsequent dialog box." Pg. 139
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra.* The Net.Commerce book teaches the home pages, categories pages, and the product pages are all designed using templates. Furthermore, the Net.Commerce book teaches using a consistent layout for all web pages in a Store. "Try to use a basic and consistent layout on all your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on. If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce." Pg. 14 "Whether the store will look like a single store or like a mall is a marketing decision. Some big stores might prefer looking like many smaller, specialized companies." Pg. 25. "The Template Designer is a Java applet-based, graphical object-oriented editing tool that allows you to create Web pages for an online mall or store, and to design and modify templates with a graphical HTML editor. You can use it to do

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure iu Net.Commerce for OS/390 ("Net.Commerce book")
		the following: · Create and update home pages, product pages, category pages, and Product Advisor pages. · Design headers and footers for the pages. · Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name)." pg. 80. "Take into account the dynamic nature of the Internet and of Net.Commerce. Think about putting specials and sales offerings directly on your home page or in your html page footer." Pg. 18. Figure 57. Text and Link Dialog Boxes Pg. 119. *Also* see pgs. 124-130. "6.1.13.1 Category Template Assignment Go to Store Manager, then Product Categories. Select your store, then click the arrow beside the store name that appears below the selection list. This lists the Categories available in your store. Click the category you wish to assign a template to, then click the Template button at the bottom of the page. Enter the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevaut Disclosure in Net.Commerce for OS/390 ("Net.Commerce book")
		template name in the Category Template Assignment form which appears. Fignre 81 on page 141 shows the form as we completed it. Save the form and ensure you get a confirmation message. You can view the Template after you have saved it by clicking the View Template button." Pg. 140. "6.1.13.2 Product Template Assignment Go to Store Manager, then Product Information. Select your store and product; the Search button at the bottom of the page will search your store database for all products if you cannot remember the product SKU. The results of the search are displayed in a window at the bottom of the page. You can select one of these and it will fill the entries in the product form for you. Next click the Templates button on the task bar on the left side of the administrator page, under Product Information. You will see a form similar to that in Fignre 82 on page 142. Enter the product template macro name you created in the Product Template section earlier in this chapter, in the Template form. Save the form, and check for the confirmation message. Fill in the template name (file name with *.d2w ending), save the form and click on View Template This should show you how the product template actually looks on the browser." Pg. 141.

Comparison of U.S. Patent No. 7,818,399 and United States Patent Application 09/995,278 by Saliba (“Saliba ’278”)[1]

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants’ products in Plaintiff’s Infringement Contentions served April 15, 2011, United States Patent Application 09/995,278 anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants’ Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba (“Saliba ’278”)
1	A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	“This invention relates to electronic financial systems for the Internet. More particularly, this invention relates to systems and methods for presenting electronic bills to customers of a financial institution, such as a bank.” Saliba ’278 ¶ 0002. According to one aspect of this invention, the financial institution has a Web server to support its Web site. The server presents a home page that allows its customers to select different services, such as examining a checking or savings account balance, or conducting a funds transfer. These services are supported locally at the financial institution's Web site. The home page also offers, however, an option to view customer-specific data, such as the customer's personal billing statements that are collected from a variety of different billers (e.g., phone bill, gas bill, cable TV bill, etc.). Saliba ’278 ¶ 0009. At step 148 in FIG. 6, the service center server 110 offers a set of bill management and payment options to the customer. The customer may elect to examine the billing statements in detail by clicking on a particular bill in the list. The server 110 provides a new HTML page showing the billing statement framed within the bank's branding indicia, as shown in FIG. 4. The customer may further elect to pay all of the bill, part of it, or none of it. The customer may challenge part, or enter into a dialog with customer service. Saliba ’278 ¶ 0065.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link	“Accordingly, when the customer activates the option on the financial institution's home page for viewing the customer-specific data, the financial institution's Web server links to the third party's server to access the customer-specific data without exposing this transfer to the customer.” Saliba ’278 ¶ 0010.

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[1] Unless noted, all citations in this chart are to United States Patent Application 09/995,278 by Bassam A. Saliba, et al. (filed November 26, 2001). [DFNDT0000295-0000314]

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba (“Saliba ’278”)
	displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated;	According to one implementation for a low level of integration, the financial institution's server hands off the customer to the third party's server by addressing the third party's site URL (universal resource locator). The financial institution's server sends along its own identity, some branding indicia (e.g., logo, background, color), and a customer ID. The third party's server uses the customer ID to retrieve the data belonging to the customer. The third party's server then employs the bank's ID and branding indicia to present the data in a Web page that is formatted, branded, and styled to resemble the financial institution's own Web pages. Saliba ’278 ¶ 0011. Upon activating the ‘Billing Statements’ option 60, the bank’s Web server links to the service center's server without exposing this transfer to the customer. The customer still believes that he/she is connected to and communicating with the bank’s Web site 44. A new Web page that incorporates the customer’s bills is then presented to the customer. Saliba ’278 ¶ 0040. “The two servers are loosely coupled via a data connection 128. This data connection may be as simple as a handoff from the bank server 90 to the service center server 110 as a result of following a link presented on the bank’s Web page.” Saliba ’278 ¶ 0052. The banks and service center can enter into various levels of integration, ranging from a low level of integration in which the banks’ Web sites provide links to the service centers’ Web site to a high level of integration in which the banks and service center communicate over secure connections using the Open Financial Exchange (OFX) protocol to exchange financial data. Saliba ’278 ¶ 0053. FIG. 6 shows a method for implementing the low level of integration between the bank and the service center. The process begins at step 130 when a customer activates the "Billing Statements" option 60 in the bank's home page 50 (FIG. 2). In response to this activation,

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba (“Saliba ’278”)
		the bank server 90 addresses the URL (universal resource locator) of the service center Web site 46 (step 132). The bank's server 90 attaches its ID to the URL address (step 134). At the simplest level, the bank only submits its ID, as follows: SCSite.com?from=Bank1 where "SCSite.com" is the URL for the service center site, the tag "from=bank1" indicates that the customer is being forwarded from bank 1. The service center inserts the appropriate bank's name when presenting the customers bills. At this basic level, the customer may be asked to log on or enter some sort of ID. Since this may be the second time the customer is asked for such information, it would be advantageous to provide more information in the transfer, including the customer ID (described below). Saliba ’278 ¶ 0054-56. At step 142 in FIG. 6, the service center's server 110 extracts the bank's ID, any branding indicia, and the customer ID token. The service center's server 110 uses the customer ID in the token to locate and retrieve the customer's personal billing statements (step 144). The service center's server 110 then uses the branding indicia to create a user interface (UI) that presents a list of the customer's billing statements under the gnise of the bank's genre (step 146). Saliba ’278 ¶ 0063.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba (“Saliba ’278”)
1(a)(i)	wherein each of the first web pages belongs to one of a plurality of web page owners;	20 42 28(1) Customer 28(2) Customer Biller 22(1) 36(1) 38(1) 34(1) Biller 1 System BIS 26(1) Bank Web Site 24 44 Biller 22(2) 36(2) 38(2) 34(2) Biller 2 System BIS Service Center System Network Network 26(2) Bank Web Site 30 32 46 26(N) Biller 22(M) 36(M) 38(M) 34(M) Biller M System BIS Bills Database Bank 40 Fig. 1 FIG. 1 shows an electronic billing system 20 that enables multiple billers to electronically distribute their billing statements to consumers over a network, such as the Internet. The electronic billing system 20 has multiple participating billers 22(1), 22(2), . . . , 22(M), a service center system 24 resident at a third party billing service, multiple participating banks 26(1), 26(2), . . . , 22(N), and multiple bank customers as represented by customers 28(1) and 28(2). Saliba ’278 ¶ 0024.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
1(a)(ii)	wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	50 48 Microsoft Internet Explorer 52 54 Bank Name and Logo Bank Address 58 Checking Account Balance Savings Account Balance Transfer Funds 56 60 Billing Statements *Fig. 2* "Upon activating the 'Billing Statements' option 60, the bank's Web server links to the service center's server without exposing this transfer to the customer. The customer still believes that he/she is connected to and communicating with the bank's Web site 44. A new Web page that incorporates the customer's bills is then presented to the customer." Saliba '278 ¶ 0040. At step 148 in FIG. 6, the service center server 110 offers a set of bill management and payment options to the customer. The customer may elect to examine the billing statements

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
		in detail by clicking on a particular bill in the list. The server 110 provides a new HTML page showing the billing statement framed within the bank's branding indicia, as shown in FIG. 4. The customer may further elect to pay all of the bill, part of it, or none of it. The customer may challenge part, or enter into a dialog with customer service. Saliba '278 ¶ 0065.
1(a)(iii)	wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	20 42 28(1) Customer 28(2) Customer Biller 22(1) 36(1) 38(1) 34(1) Biller 1 System BIS 26(1) Bank Web Site 44 24 Biller 22(2) 36(2) 38(2) 34(2) Biller 2 System BIS Service Center System Network Network Web Site 26(2) Bank 30 32 46 26(N) Biller 22(M) 36(M) 38(M) 34(M) Biller M System BIS Bills Database Bank 40 *Fig. 1* FIG. 1 shows an electronic billing system 20 that enables multiple billers to electronically distribute their billing statements to consumers over a network, such as the Internet. The

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
		electronic billing system 20 has multiple participating billers 22(1), 22(2), . . . , 22(M), a service center system 24 resident at a third party billing service, multiple participating banks 26(1), 26(2), . . . , 22(N), and multiple bank customers as represented by customers 28(1) and 28(2). Saliba '278 ¶ 0024.
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	"The home page 50 includes various branding indicia, such as the bank's name and logo 52 and the bank's address 54. In addition, the branding indicia might comprise a particular format or stylistic schema, background color or texture, slogans, and so forth." Saliba '278 ¶ 0038. The service center's server 110 runs a branding software module 126, which are stored in program memory 118. The branding module 126 runs atop the operating system 124 during execution in the processing unit 112. The branding module 126 extracts the branding indicia passed from the bank and uses it to create a Web page that appears like the bank's own Web pages. It is noted that the branding module 126 may be integrated as part of the Web server software, rather than executed as a standalone application. Saliba '278 ¶ 0051. As one example, the service center server 110 has an HTML document that contains data fields for holding billing data retrieved locally from the bills database 40 and indicia fields for holding the branding indicia received remotely from the bank. The HTML document is rendered by the customer's browser program to present a UI that appears as though the bank itself presented the billing statements. This is shown in FIG. 3, for example, where the service center server 110 provides an HTML Web page 70 that contains a billing statement list 72 with data from the bills database 40, along with branding indicia 52, 54 received from the bank. Saliba '278 ¶ 0064.
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that	"According to one implementation for a low level of integration, the financial institution's server hands off the customer to the third party's server by addressing the third party's site URL (universal resource locator). The financial institution's server sends along its own identity, some branding indicia (e.g., logo, background, color), and a customer ID. The

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
	includes:	third party's server uses the customer ID to retrieve the data belonging to the customer. The third party's server then employs the bank's ID and branding indicia to present the data in a Web page that is formatted, branded, and styled to resemble the financial institution's own Web pages. In this manner, the data is presented in such a way that the customer is led to believe that the financial institution is still sponsoring the customer-specific data rather than the third party." Saliba '278 ¶ 0011. "Upon activating the 'Billing Statements' option 60, the bank's Web server links to the service center's server without exposing this transfer to the customer. The customer still believes that he/she is connected to and communicating with the bank's Web site 44. A new Web page that incorporates the customer's bills is then presented to the customer." Saliba '278 ¶ 0040.
1(c)(i)	(i) information associated with the commerce object associated with the link that has been activated, and	70 48 Microsoft Internet Explorer 52 54 Bank Name and Logo Bank Address 72 *Fig. 3*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
		FIG. 3 shows an exemplary new Web page 70, which displays the billing data as it is rendered on a customer's home computer monitor 48. The Web page 70 presents a list 72 of the customer's bills. The page 70 also includes the bank's branding indicia, such as the bank's name and logo 52, bank's address 54, format or stylistic schema, background color or texture, slogans, and so forth. In this manner, the new Web page 70 appears to have been provided by the bank's Web site 44, while the identity of the service center 24 is veiled, to lead the customer to believe that the billing data is provided by the financial institution rather than the service center. At this point, the customer may open any particular bill, review the itemized purchases, the amount due, and due date. Saliba '278 ¶ 0041.
1(c)(ii)	(ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	70 48 52 54 72 Microsoft Internet Explorer Bank Name and Logo Bank Address Fig. 3

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
		FIG. 3 shows an exemplary new Web page 70, which displays the billing data as it is rendered on a customer's home computer monitor 48. The Web page 70 presents a list 72 of the customer's bills. The page 70 also includes the bank's branding indicia, such as the bank's name and logo 52, bank's address 54, format or stylistic schema, background color or texture, slogans, and so forth. In this manner, the new Web page 70 appears to have been provided by the bank's Web site 44, while the identity of the service center 24 is veiled, to lead the customer to believe that the billing data is provided by the financial institution rather than the service center. At this point, the customer may open any particular bill, review the itemized purchases, the amount due, and due date. Saliba '278 ¶ 0041.
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	The billing statement 80 has multiple softkeys or buttons 84 that form tabbed navigation points to facilitate quick movement from one section of the bill to another. In this example, there is a "Summary" tab that references the billing page shown in the figure. Activation of a "Details" tab (via a mouse pointer, for example) changes the screen from the summary page to one or more pages itemizing the billing transactions. A "Customer Service" tab switches to a page giving instructions on how to access customer service. Saliba '278 ¶ 0043.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	50 48 52 54 58 56 60 Microsoft Internet Explorer Bank Name and Logo Bank Address Checking Account Balance Savings Account Balance Transfer Funds Billing Statements Fig. 2 "The home page 50 includes various branding indicia, such as the bank's name and logo 52 and the bank's address 54. In addition, the branding indicia might comprise a particular format or stylistic

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
		schema, background color or texture, slogans, and so forth." Saliba '278 ¶ 0038. FIG. 3 shows an exemplary new Web page 70, which displays the billing data as it is rendered on a customer's home computer monitor 48. The Web page 70 presents a list 72 of the customer's bills. The page 70 also includes the bank's branding indicia, such as the bank's name and logo 52, bank's address 54, format or stylistic schema, background color or texture, slogans, and so forth. In this manner, the new Web page 70 appears to have been provided by the bank's Web site 44, while the identity of the service center 24 is veiled, to lead the customer to believe that the billing data is provided by the financial institution rather than the service center. At this point, the customer may open any particular bill, review the itemized purchases, the amount due, and due date. Saliba '278 ¶ 0041.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	50 48 Microsoft Internet Explorer 52 54 Bank Name and Logo Bank Address 58 Checking Account Balance Savings Account Balance Transfer Funds 56 60 Billing Statements *Fig. 2* "The home page 50 includes various branding indicia, such as the bank's name and logo 52 and the bank's address 54. In addition, the branding indicia might comprise a particular format or stylistic

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
		schema, background color or texture, slogans, and so forth." Saliba '278 ¶ 0038. FIG. 3 shows an exemplary new Web page 70, which displays the billing data as it is rendered on a customer's home computer monitor 48. The Web page 70 presents a list 72 of the customer's bills. The page 70 also includes the bank's branding indicia, such as the bank's name and logo 52, bank's address 54, format or stylistic schema, background color or texture, slogans, and so forth. In this manner, the new Web page 70 appears to have been provided by the bank's Web site 44, while the identity of the service center 24 is veiled, to lead the customer to believe that the billing data is provided by the financial institution rather than the service center. At this point, the customer may open any particular bill, review the itemized purchases, the amount due, and due date. Saliba '278 ¶ 0041.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	50 48 Microsoft Internet Explorer 52 54 Bank Name and Logo Bank Address 58 Checking Account Balance Savings Account Balance Transfer Funds 56 60 Billing Statements *Fig. 2* "The home page 50 includes various branding indicia, such as the bank's name and logo 52 and the bank's address 54. In addition, the branding indicia might comprise a particular format or stylistic

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
		schema, background color or texture, slogans, and so forth." Saliba '278 ¶ 0038. FIG. 3 shows an exemplary new Web page 70, which displays the billing data as it is rendered on a customer's home computer monitor 48. The Web page 70 presents a list 72 of the customer's bills. The page 70 also includes the bank's branding indicia, such as the bank's name and logo 52, bank's address 54, format or stylistic schema, background color or texture, slogans, and so forth. In this manner, the new Web page 70 appears to have been provided by the bank's Web site 44, while the identity of the service center 24 is veiled, to lead the customer to believe that the billing data is provided by the financial institution rather than the service center. At this point, the customer may open any particular bill, review the itemized purchases, the amount due, and due date. Saliba '278 ¶ 0041.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	70 48 Microsoft Internet Explorer 52 54 Bank Name and Logo Bank Address Biller Name Amount Due Due Date Status Not Paid Paid Not Paid 72 *Fig. 3*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba (“Saliba ’278”)
		FIG. 3 shows an exemplary new Web page 70, which displays the billing data as it is rendered on a customer's home computer monitor 48. The Web page 70 presents a list 72 of the customer's bills. The page 70 also includes the bank's branding indicia, such as the bank's name and logo 52, bank's address 54, format or stylistic schema, background color or texture, slogans, and so forth. In this manner, the new Web page 70 appears to have been provided by the bank's Web site 44, while the identity of the service center 24 is veiled, to lead the customer to believe that the billing data is provided by the financial institution rather than the service center. At this point, the customer may open any particular bill, review the itemized purchases, the amount due, and due date. Saliba ’278 ¶ 0041.
8	The method of claim 1 wherein the second web page is generated dynamically.	At step 142 in FIG. 6, the service center's server 110 extracts the bank's ID, any branding indicia, and the customer ID token. The service center's server 110 uses the customer ID in the token to locate and retrieve the customer's personal billing statements (step 144). The service center's server 110 then uses the branding indicia to create a user interface (UI) that presents a list of the customer's billing statements under the guise of the bank's genre (step 146). As one example, the service center server 110 has an HTML document that contains data fields for holding billing data retrieved locally from the bills database 40 and indicia fields for holding the branding indicia received remotely from the bank. The HTML document is rendered by the customer's browser program to present a UI that appears as though the bank itself presented the billing statements. This is shown in FIG. 3, for example, where the service center server 110 provides an HTML Web page 70 that contains a billing statement list 72 with data from the bills database 40, along with branding indicia 52, 54 received from the bank. At step 148 in FIG. 6, the service center server 110 offers a set of bill management and payment options to the customer. The customer may elect to examine the billing statements in detail by clicking on a particular bill in the list. The server 110 provides a new HTML page showing the billing statement framed within the bank's branding indicia, as shown in FIG. 4. The customer may further elect to pay all of the bill, part of it, or none of it. The

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba (“Saliba ’278”)
		customer may challenge part, or enter into a dialog with customer service. Saliba ’278 ¶ 0063-0065.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	The third party also has a server that supports its own Web site. The server stores the customer-specific data offered by the financial institution and can provide that data to a customer of the financial institution any time the customer accesses the third party's Web site. The same data is also made available to the customer through the financial institution's Web site. When the customer is logged onto the financial institution's Web site, the financial institution would like to offer this same data without having the customer feel like he/she has left the financial institution's Web site to access the third party's Web site. Accordingly, when the customer activates the option on the financial institution's home page for viewing the customer-specific data, the financial institution's Web server links to the third party's server to access the customer-specific data without exposing this transfer to the customer. There are many different degrees of integration between the financial institution's server and the third party's server. According to one implementation for a low level of integration, the financial institution's server hands off the customer to the third party's server by addressing the third party's site URL (universal resource locator). The financial institution's server sends along its own identity, some branding indicia (e.g., logo, background, color),

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba (“Saliba ’278”)
		and a customer ID. The third party's server uses the customer ID to retrieve the data belonging to the customer. The third party's server then employs the bank's ID and branding indicia to present the data in a Web page that is formatted, branded, and styled to resemble the financial institution's own Web pages. In this manner, the data is presented in such a way that the customer is led to believe that the financial institution is still sponsoring the customer-specific data rather than the third party. According to another implementation that involves a higher level of integration, the financial institution's server establishes a secure connection with the third party's server and employs the OFX (Open Financial Exchange) protocol, and extensions to this protocol, to retrieve information from the third party's server. The OFX extensions enable the financial institution's server to request such information as billing summaries, status and type of bills, customer enrollment and logon information, and payment information. The information retrieved from the third party's server can then be presented in new Web page at the financial institution's Web site that contains the financial institution's name and branding indicia. Through integration, the third party provides extended services for the financial institution that are branded as belonging to the financial institution. From the customer's perspective, he/she only visits one location--the financial institution's Web site--to examine his/her financial records. Saliba ’278 ¶ 0010-12. When a customer of the financial institution wishes to access the customer-specific data supplied by the third party, the financial institution links to the third party without exposing this transfer to the customer. At this point, the third party might actually host the customer and present the customer-specific data. However, the third party presents the data in such a way that the customer is led to believe that the financial institution provides the customer-specific data rather than the third party. Thus, the third party provides an extended service to the financial institution and brands that service as belonging to the financial institution. From the customer's perspective, he/she only visits the financial institution's Web site for all of his/her financial tasks. Saliba ’278 ¶ 0022.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba (“Saliba ’278”)
		The home page 50 provides a menu 56 listing options 58 for various services provided by the bank, such as checking account balance, savings account balance, funds transfer, and so forth. The home page menu 56 also offers an option 60 to view the customer's bills. However, as noted above, the billing statements are physically located on the bills database 40 at the remote service center 24. Upon activating the "Billing Statements" option 60, the bank's Web server links to the service center's server without exposing this transfer to the customer. The customer still believes that he/she is connected to and communicating with the bank's Web site 44. A new Web page that incorporates the customer's bills is then presented to the customer. FIG. 3 shows an exemplary new Web page 70, which displays the billing data as it is rendered on a customer's home computer monitor 48. The Web page 70 presents a list 72 of the customer's bills. The page 70 also includes the bank's branding indicia, such as the bank's name and logo 52, bank's address 54, format or stylistic schema, background color or texture, slogans, and so forth. In this manner, the new Web page 70 appears to have been provided by the bank's Web site 44, while the identity of the service center 24 is veiled, to lead the customer to believe that the billing data is provided by the financial institution rather than the service center. At this point, the customer may open any particular bill, review the itemized purchases, the amount due, and due date. Saliba ’278 ¶ 0039-41. “The billing statement 80 is rendered within a branding frame 88 that identifies the bank. The frame 88 contains at least some of the branding indicia, such as the bank's name and logo 52. As a result, the ability to open and review a personal billing statement 80 appears to be part of the services offered by the bank, even though the billing data is being provided by the remote service center system 24.” Saliba ’278 ¶ 0046. The service center's server 110 runs a branding software module 126, which are stored in program memory 118. The branding module 126 runs atop the operating system 124 during execution in the processing unit 112. The branding module 126 extracts the

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
		branding indicia passed from the bank and uses it to create a Web page that appears like the bank's own Web pages. It is noted that the branding module 126 may be integrated as part of the Web server software, rather than executed as a standalone application. Saliba '278 ¶ 0051. At step 142 in FIG. 6, the service center's server 110 extracts the bank's ID, any branding indicia, and the customer ID token. The service center's server 110 uses the customer ID in the token to locate and retrieve the customer's personal billing statements (step 144). The service center's server 110 then uses the branding indicia to create a user interface (UI) that presents a list of the customer's billing statements under the guise of the bank's genre (step 146). As one example, the service center server 110 has an HTML document that contains data fields for holding billing data retrieved locally from the bills database 40 and indicia fields for holding the branding indicia received remotely from the bank. The HTML document is rendered by the customer's browser program to present a UI that appears as though the bank itself presented the billing statements. This is shown in FIG. 3, for example, where the service center server 110 provides an HTML Web page 70 that contains a billing statement list 72 with data from the bills database 40, along with branding indicia 52, 54 received from the bank. Saliba '278 ¶ 0063-64.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	There are many different degrees of integration between the financial institution's server and the third party's server. According to one implementation for a low level of integration, the financial institution's server hands off the customer to the third party's server by addressing the third party's site URL (universal resource locator). The financial institution's server sends along its own identity, some branding indicia (e.g., logo, background, color), and a customer ID. The third party's server uses the customer ID to retrieve the data belonging to the customer. The third party's server then employs the bank's ID and branding indicia to present the data in a Web page that is formatted, branded, and styled to resemble the financial institution's own Web pages. In this manner, the data is presented in such a way that the customer is led to believe that the financial institution is still

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
		sponsoring the customer-specific data rather than the third party. Saliba '278 ¶ 0011. FIG. 6 shows a method for implementing the low level of integration between the bank and the service center. The process begins at step 130 when a customer activates the "Billing Statements" option 60 in the bank's home page 50 (FIG. 2). In response to this activation, the bank server 90 addresses the URL (universal resource locator) of the service center Web site 46 (step 132). The bank's server 90 attaches its ID to the URL address (step 134). At the simplest level, the bank only submits its ID, as follows: SCSite.com?from=Bank1 where "SCSite.com" is the URL for the service center site, the tag "from=bank1" indicates that the customer is being forwarded from bank 1. The service center inserts the appropriate bank's name when presenting the customers bills. At this basic level, the customer may be asked to log on or enter some sort of ID. Since this may be the second time the customer is asked for such information, it would be advantageous to provide more information in the transfer, including the customer ID (described below). Saliba '278 ¶ 0054-56.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	At step 148 in FIG. 6, the service center server 110 offers a set of bill management and payment options to the customer. The customer may elect to examine the billing statements in detail by clicking on a particular bill in the list. The server 110 provides a new HTML page showing the billing statement framed within the bank's branding indicia, as shown in FIG. 4. The customer may further elect to pay all of the bill, part of it, or none of it. The customer may challenge part, or enter into a dialog with customer service. Saliba '278 ¶ 0065.

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14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	At step 148 in FIG. 6, the service center server 110 offers a set of bill management and payment options to the customer. The customer may elect to examine the billing statements in detail by clicking on a particular bill in the list. The server 110 provides a new HTML page showing the billing statement framed within the bank's branding indicia, as shown in FIG. 4. The customer may further elect to pay all of the bill, part of it, or none of it. The customer may challenge part, or enter into a dialog with customer service. Saliba '278 ¶ 0065.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	At step 148 in FIG. 6, the service center server 110 offers a set of bill management and payment options to the customer. The customer may elect to examine the billing statements in detail by clicking on a particular bill in the list. The server 110 provides a new HTML page showing the billing statement framed within the bank's branding indicia, as shown in FIG. 4. The customer may further elect to pay all of the bill, part of it, or none of it. The customer may challenge part, or enter into a dialog with customer service. After the biller is finished reviewing his/her billing statements, the service center server 110 returns the customer to the bank server 90 via the return URL for the bank (step 150). The customer may then continue to explore other services offered by the bank's, such as transferring funds between accounts to cover payment of the bills. Saliba '278 ¶ 0065-66.
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra.*
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	At step 138, the bank server 90 attaches a return URL address for the bank so that the service center can return the customer to the bank when the customer finishes his/her review of the billing statements. The composite message string is forwarded to the service center's server 110 to thereby transfer control to the service center Web site (step 140). The composite string may appear, for example, as follows:

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
		SCSite.com?from=Bank1&branding=Bank1BrandingIndicia& token=customer1&return=Bank1.com where SCSite.com is the URL for the service center site, the tag ".backslash.from=bank1" indicates that the customer is being forwarded from bank 1, the tag "branding=Bank1BrandingIndicia" contains certain branding items custom to the bank, the tag "token=customer1" identifies the customer, and the tag "return=Bank1.com" is the return URL to the bank. Saliba '278 ¶ 0059-61. "After the biller is finished reviewing his/her billing statements, the service center server 110 returns the customer to the bank server 90 via the return URL for the bank (step 150). The customer may then continue to explore other services offered by the bank's, such as transferring funds between accounts to cover payment of the bills." Saliba '278 ¶ 0066.
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	The service center's server 110 rnns a branding software module 126, which are stored in program memory 118. The branding module 126 rnns atop the operating system 124 during execution in the processing unit 112. The branding module 126 extracts the branding indicia passed from the bank and uses it to create a Web page that appears like the bank's own Web pages. It is noted that the branding module 126 may be integrated as part of the Web server software, rather than executed as a standalone application. Saliba '278 ¶ 0051.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually	*See* 1(a)-1(b), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
	perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in	*See* 1(a)-1(c), *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
	response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	
20	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i)	*See* 1, *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
	wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding	

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
	to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra*.
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra*.
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce	*See* 13-16, *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in United States Patent Application 09/995,278 by Saliba ("Saliba '278")
	object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra*.

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, The CompuServe Information Service ("CIS") anticipates and/or renders obvious, alone or in combination with other prior art identified in Defendants' Amended Invalidity Contentions, the asserted claims as described in part below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in CIS
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	CIS is built on a multi-level client-server architecture model wherein CIS performs, in different scenarios, as a Host Site and an Outsource Provider as described in the '135 patent. In a first scenario, CIS incorporates links to e-commerce outsource providers into CIS content pages. For instance, CIS incorporates links to EasySabre, Travelshopper and other gateway service providers, each of which performs the role of Outsource Provider as described in the '135 patent. EasySabre, Travelshopper and other gateway services providers provide a platform for e-commerce support for a plurality of sites in a customer-transparent manner. In this scenario, visitors accessing sites operated by EasySabre, Travelshopper and other gateway service providers are presented with a look and feel similar to CIS. In a second (alternative) scenario, CIS provides e-commerce services to a plurality of merchants and other third parties in a customer-transparent manner wherein look and feel is adapted for each merchant site. *See, e.g.,* Charles Bowen & David Peyton, *How to Get the Most Out of CompuServe* (5th ed. 1993) ("Bowen & Peyton"); Jill H. Ellsworth & Matthew V. Ellsworth, *Using CompuServe* (1994) ("Ellsworth & Ellsworth").
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated;	A CIS server recognizes which DPP dialogs to use for each Mall Store or Travel Service. In an alternative implementation, an IQUEST server recognizes that a CIS user has requested information. *See, e.g.,* Ellsworth & Ellsworth 316-29 (IQUEST).
1(a)(i)	wherein each of the first web pages belongs to one of a plurality of web page owners;	Each DPP dialog belongs to one of a plurality of Mall Stores and Travel Services.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in CIS
		See, e.g., Ellsworth & Ellsworth 316-29 (IQUEST).
1(a)(ii)	wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and	each of the pages displays at least one active link associated with a commerce object; for instance a product for sale or a flight segment that can be reserved from one of a plurality of airlines *See, e.g.,* Ellsworth & Ellsworth 316-29 (IQUEST).
1(a)(iii)	wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	A selected merchant (e.g. Delta Airlines), CIS and Travelshopper are each third parties with respect to one another. IQUEST servers provide products to CIS users from a plurality of merchants located at remote servers using a look and feel specific to CIS. *See, e.g.,* Ellsworth & Ellsworth 316-29 (IQUEST).
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	CIS automatically uses the appropriate DPP dialog from pre-stored data associated with the source page; IQUEST uses information pre-stored about the CIS environment. *See, e.g.,* Ellsworth & Ellsworth 316-29 (IQUEST).
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes:	CIS server generates & transmits to the CompuServe Information Manager browser a 2nd page that includes: IQUEST servers automatically generate and transmit to CIS clients pages that include:
1(c)(i)	information associated with the commerce object associated with the link that has been activated, and	Flight or product details For the IQUEST example, commerce object might be a catalog of objects available or an individual product. *See, e.g.,* Ellsworth & Ellsworth 316-29 (IQUEST).
1(c)(ii)	a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	The CIS server sends a plurality of visually perceptible elements (menus, lists, buttons, etc) based on pre-stored data and corresponding to the source page. For the IQUEST example, the visually perceptible elements derived from the pre-stored data include a prompt at the bottom of each page that accepts CIS navigation commands and other choices. *See, e.g.,* Ellsworth & Ellsworth 316-29 (IQUEST).
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements	In the CIS Electronic Mall, each merchant catalog was stored in a relational database in a manner such that object associated with an activated link could be a dynamic

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Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in CIS
	includes a set of navigational links on the source page.	selection indicator. For instance, in the Brooks Brothers store in the Electronic Mall, a user could select Mens' Shirts, which activated a dynamic selection and created a dynamic page listing only the Mens' Shirt products available for purchase from the Brooks Brothers store. *See, e.g.,* [DFDNT_CD_0001]. For the IQUEST example, many links activate dynamic searches of different databases or services. *See, e.g.,* Ellsworth & Ellsworth 316-29 (IQUEST).
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	Many CIS pages were rendered with a plurality of visually perceptible elements, including navigational links. *See, e.g.,* Bowen & Peyton, Ellsworth & Ellsworth, [DFDNT0001349-65] and [DFDNT_CD_0001]. For the IQUEST example, the visually perceptible elements derived from the pre-stored data include a prompt at the bottom of each page that accepts CIS navigation commands and other choices. *See, e.g.,* Ellsworth & Ellsworth 316-29 (IQUEST).
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	Each CIS page rendered includes a header and footer. *See, e.g.,* Bowen & Peyton, Ellsworth & Ellsworth and [DFDNT_CD_0001]. For the IQUEST example, a header, footer and prompt similar to those used by CIS are included. *See, e.g.,* Ellsworth & Ellsworth 316-29 (IQUEST).
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web	Picture objects, including logos, were just some of the visually perceptible elements available via CIS. *See, e.g.,* Ellsworth & Ellsworth (EasySabre), [DFDNT0001429-1529] (p. 9-57) and [DFDNT_CD_0001].

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in CIS
	page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	
8	The method of claim 1 wherein the second web page is generated dynamically.	In the CIS Electronic Mall, each merchant catalog was stored in a relational database in a manner such that object associated with an activated link could be a dynamic selection indicator. For instance, in the Brooks Brothers store in the Electronic Mall, a user could select Mens' Shirts, which activated a dynamic selection and created a dynamic page listing only the Mens' Shirt products available for purchase from the Brooks Brothers store. *See, e.g.,* [DFDNT_CD_0001].
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	In the CIS Electronic Mall, each merchant catalog was stored in a relational database in a manner such that object associated with an activated link could be a dynamic selection indicator. For instance, in the Brooks Brothers store in the Electronic Mall, a user could select Mens' Shirts, which activated a dynamic selection and created a dynamic page listing only the Mens' Shirt products available for purchase from the Brooks Brothers store. *See, e.g.,* [DFDNT_CD_0001].
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	Many CIS content providers received payment as a result of online transactions. *See, e.g.,* [DFDNT0001530-35].
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	Many CIS content providers received payment as a result of online transactions. *See, e.g.,* [DFDNT0001530-35].
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	Picture objects, including logos, were just some of the visually perceptible elements available via CIS, thus giving the appearance that the page is associated with the merchant rather than CIS. *See, e.g.,* Ellsworth & Ellsworth (EasySabre), [DFDNT0001429-1529] (p. 9-57)

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in CIS
		and [DFDNT_CD_0001]..
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	In the CIS Electronic Mall, each merchant catalog was stored in a relational database in a manner such that object associated with an activated link could be a dynamic selection indicator. For instance, in the Brooks Brothers store in the Electronic Mall, a user could select Mens' Shirts, which activated a dynamic selection and created a dynamic page listing only the Mens' Shirt products available for purchase from the Brooks Brothers store. *See, e.g.,* [DFDNT_CD_0001].
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	In the CIS Electronic Mall, pages contain a link (*e.g.*, an ORDER button) that when activated places data representing the selected product into a virtual shopping cart. *See, e.g.,* [DFDNT_CD_0001].
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	In the CIS Electronic Mall, pages contain a link (*e.g.*, a CHECKOUT button) that when activated facilitates completion of a transaction associated with the commerce objects in the shopping cart. *See, e.g.,* [DFDNT_CD_0001].
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	In the CIS Electronic Mall, as part of the checkout process, credit card or other payment information is collected from the user to facilitate payment to the merchant. *See, e.g.,* [DFDNT_CD_0001].
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	Many CIS content providers received payment as a result of online transactions. *See, e.g.,* [DFDNT0001530-35].
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	In the CIS Electronic Mall, after placing an object in the shopping cart, the user has to option to continue shopping, in which case the page from which the last item was selected is displayed again. *See, e.g.,* [DFDNT_CD_0001].
19	A system useful in an outsource provider serving	*See* 1, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in CIS
	web pages offering commercial opportunities, the system comprising:	
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* 1(a)-1(b), *supra.*
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality	*See* 1(a)-1(c), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in CIS
	of visually perceptible elements visually corresponding to the source page.	
20	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	*See* 1, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosure in CIS
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra.*
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra.*
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	*See* 13-16, *supra.*
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra.*

Invalidity Contentions for U.S. Patent No. 7,818,399
35 U.S.C. §112

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, the claims of U.S. Patent No. 7,818,399 are invalid under 35 U.S.C. §112 for the reasons stated below.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Indefiniteness under Section 112
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	The limitation of claim 1 is indefinite, is not enabled or otherwise supported by the Specification. The Specification does not teach a web page (i.e., "one of a plurality of first web pages," and "each of the first web pages") with: (1) a link; and (2) at least one active link. The phrase "the source page" is indefinite because of a lack of antecedent basis. The phrase "the first web page(s)" is indefinite because of a lack of antecedent basis. The phrase "commerce object" is indefinite. The phrase "a plurality of merchants" is indefinite.
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	The phrase "the source page" is indefinite because of a lack of antecedent basis.
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	The phrase "a plurality of visually perceptible elements" is indefinite. The phrase "the source page" is indefinite because of a lack of antecedent basis. The phrase "commerce object" is indefinite. The phrase "visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page" is indefinite.
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	The phrase "the source page" is indefinite because of a lack of antecedent basis. The phrase "the plurality of visually perceptible elements" is indefinite.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	The phrase "the source page" is indefinite because of a lack of antecedent basis. The phrase "the plurality of visually perceptible elements" is indefinite. The phrase "the appearance" is indefinite.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	The phrase "the source page" is indefinite because of a lack of antecedent basis. The phrase "the plurality of visually perceptible elements" is indefinite. The phrase "the appearance" is indefinite.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	The phrase "the source page" is indefinite because of a lack of antecedent basis. The phrase "the plurality of visually perceptible elements" is indefinite.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	The phrase "commerce object" is indefinite.
8	The method of claim 1 wherein the second web page is generated dynamically.	

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Indefiniteness under Section 112
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	The phrase "the source page" is indefinite because of a lack of antecedent basis. The phrase "commerce object" is indefinite.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	The phrase "the source page" is indefinite because of a lack of antecedent basis.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	The phrase "the source page" is indefinite because of a lack of antecedent basis. The phrase "appears to the computer user" is indefinite.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	The phrase "the source page" is indefinite because of a lack of antecedent basis.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	The phrase "which link" is indefinite because it is not clear if the phrase "which link" refers to "a further link" of claim 13 or "the link" of claim 1. The phrase "commerce object" is indefinite.
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	The phrase "commerce object" is indefinite.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with	The phrase "the activated link" is indefinite because it is not clear if "the activated link" refers to "a check out link," "a further link," or "a link displayed by one of a plurality of first web pages."

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Indefiniteness under Section 112
	the activated link.	
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	The phrase "the source page" is indefinite because of a lack of antecedent basis.
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	The phrase "commerce object" is indefinite.
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	The phrase "the visually perceptible elements" is indefinite.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	The limitation of claim 19 is indefinite, is not enabled or otherwise supported by the Specification. The Specification does not teach a web page (i.e., "one of a plurality of first web pages," and "each of the first web pages") with at least one active link. The phrase "visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages" is indefinite. The phrase "commerce object" is indefinite. The phrase "a plurality of merchants" is indefinite.
19(b)	(b) a computer server at the outsource provider,	The phrase "the source page" is indefinite because of a lack of antecedent basis.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Indefiniteness under Section 112
	which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	This limitation of claim 19 is indefinite, is not enabled or otherwise supported by the Specification. The Specification does not teach a web page (i.e., "one of the first web pages," and "each of the first web pages") with: (1) "at least one active link"; (2) "the associated link"' (3) "the links;" and (4) "the link." The phrase "the plurality of visually perceptible elements" is indefinite. The phrase "the web browser" is indefinite because of a lack of antecedent basis. The phrase "commerce object" is indefinite.
	20. A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated	This limitation of claim 20 is indefinite, is not enabled or otherwise supported by the Specification. The Specification does not teach a web page (i.e., "one of a plurality of first web pages," "each of the first web pages") with: (1) a link; and (2) at least one active link. The phrase "a plurality of visually perceptible elements" is indefinite. The phrase "the source page" is indefinite because of a lack of antecedent basis. The phrase "commerce object" is indefinite. The phrase "a plurality of merchants" is indefinite.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Indefiniteness under Section 112
	with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	The phrase "commerce object" is indefinite.
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is	The phrase "the source page" is indefinite because of a lack of antecedent basis.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Indefiniteness under Section 112
	completed.	
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	The phrase "the source page" is indefinite because of a lack of antecedent basis. The phrase "the activated link" is indefinite because it is not clear whether the phrase refers to "the link" of claim 20 or the "further link" or the "checkout link" of claim 24. The phrase "commerce object" is indefinite.
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	The phrases "the visually perceptible elements" and "visually perceptible elements" are indefinite.

Comparison of U.S. Patent No. 7,818,399 and U.S. Patent No. 6,141,666 to Tobin ("Tobin") combined with U.S. Patent No. 7,565,308 to Bollay ("Bollay")

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, U.S. Patent No. 6,141,666 to Tobin combined with U.S. Patent No. 7,565,308 to Bollay renders obvious the asserted claims as described in part below. *See* Defendants' Invalidity Contents for an explanation of the reasons for combining Tobin and Bollay.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	*See* Ex. 17C, at 1. *See* Ex. 3C, at 1.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	*See* Ex. 17C, at 1(a). *See* Ex. 3C, at 1(a).
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	*See* Ex. 17C, at 1(b). *See* Ex. 3C, at 1(b).
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a	*See* Ex. 17C, at 1(c). *See* Ex. 3C, at 1(c). *See also* 3-6, *infra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	*See* Ex. 17C, at 3. *See* Ex. 3C, at 3.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	*See* Ex. 17C, at 4. *See* Ex. 3C, at 4.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	*See* Ex. 17C, at 5. *See* Ex. 3C, at 5.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	*See* Ex. 17C, at 6. *See* Ex. 3C, at 6.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* Ex. 17C, at 7. *See* Ex. 3C, at 7.
8	The method of claim 1 wherein the second web page is generated dynamically.	*See* Ex. 17C, at 7. *See* Ex. 3C, at 8.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for	*See* Ex. 17C, at 7. *See* Ex. 3C, at 9.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* Ex. 3C, at 10.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*See* Ex. 17C, at 11. *See* Ex. 3C, at 11.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	*See* Ex. 17C, at 12. *See* Ex. 3C, at 12. .
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	*See* Ex. 17C, at 13. *See* Ex. 3C, at 13. .
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	*See* Ex. 17C, at 14. *See* Ex. 3C, at 14.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	*See* Ex. 3C, at 15. .
16	The method of claim 14, further comprising after the transaction is completed,	*See* 10, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	computer-facilitating payment of a commission to the owner of the source page.	
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	*See* Ex. 3C, at 17.
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 17C, at 18. *See* Ex. 3C, at 18. .
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* Ex. 17C, at 19. *See* 1, *supra*.
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* Ex. 17C, at 19(a). *See* Ex. 3C, at 19(a). *See* 1(a)-1(b), *supra*.
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a	*See* Ex. 17C, at 19(b). *See* Ex. 3C, at 19(b). *See* 1(a)-1(c), *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	
20	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third	*See* Ex. 17C, at 20. *See* Ex. 3C, at 20.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* Ex. 17C, at 22. *See* Ex. 3C, at 22. *See* 7, *supra*.
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra*.
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when	*See* 13-16, *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 17C, at 25. *See* 18, *supra*.

Comparison of the U.S. Patent No. 7,818,399 with U.S. Patent No. 5,870,717 “System for ordering items over computer network using an electronic catalog” combined with the Travelocity Prior Art

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, U.S. Patent No. 5,870,717 combined with U.S. Patent No. the Travelocity Prior Art renders obvious the asserted claims as described in part below.

According to Plaintiff's Infringement Contentions regarding Travelocity, there is a motivation to combine the Travelocity's Prior Art with Wiecha because both are related to e-commerce outsourcing processes for selling commerce items over a computer network and thus are in the same field of endeavor. The Travelocity Prior Art brought together merchants, retailers, and customers enabling them to sell and deliver products via the Internet through vendor websites. *See* Exhibit 8C. Similarly, Wiecha discloses a corporate computer network for ordering products from numerous electronic catalogs that are accessible by employees of that corporation. *See* Wiecha at Abstract. The employees may research, select, and process the purchase of the products provided in the electronic catalogs. Both the Travelocity Prior Art and Wiecha disclose electronic commerce systems that are directed to efficiently selling commerce objects through a computer network.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	*See* Ex. 8C, at 1. *See* Ex. 6C, at 1.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	*See* Ex. 8C, at 1(a). *See* Ex. 6C, at 1(a).
1(b)	automatically retrieving from a storage coupled	*See* Ex. 8C, at 1(b).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	to the server pre stored data associated with the source page; and then	*See* Ex. 6C, at 1(b).
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	*See* Ex. 8C, at 1(c). *See* Ex. 6C, at 1(c). *See also* 3-6, *infra*.
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	*See* Ex. 8C, at 3. *See* Ex. 6C, at 3.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	*See* Ex. 8C, at 4. *See* Ex. 6C, at 4.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	*See* Ex. 8C, at 5. *See* Ex. 6C, at 5.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	*See* Ex. 8C, at 6. *See* Ex. 6C, at 6.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation	*See* Ex. 8C, at 7. *See* Ex. 6C, at 7.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	
8	The method of claim 1 wherein the second web page is generated dynamically.	*See* Ex. 8C, at 8. *See* Ex. 6C, at 8.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	*See* Ex. 8C, at 9. *See* Ex. 6C, at 9.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* Ex. 8C, at 10. *See* Ex. 6C, at 10.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*See* Ex. 8C, at 11. *See* Ex. 6C, at 11.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	*See* Ex. 8C, at 12. *See* Ex. 6C, at 12.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	*See* Ex. 8C, at 13. *See* Ex. 6C, at 13.
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the	*See* Ex. 8C, at 14. *See* Ex. 6C, at 14.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	commerce object in the shopping cart.	
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	*See* Ex. 8C, at 15. *See* Ex. 6C, at 15.
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra*.
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	*See* Ex. 8C, at 17. *See* Ex. 6C, at 17.
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 8C, at 18. *See* Ex. 6C, at 18.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra*.
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of	*See* 1(a)-1(b), *supra*.

Comparison of the U.S. Patent No. 7,818,399 with U.S. Patent No. 5,870,717 "System for ordering items over computer network using an electronic catalog" combined with the Travelocity Prior Art

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	*See* 1(a)-1(c), *supra*.
20	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source	*See* Ex. 8C, at 20. *See* Ex. 6C, at 20.

Comparison of the U.S. Patent No. 7,818,399 with U.S. Patent No. 5,870,717 "System for ordering items over computer network using an electronic catalog" combined with the Travelocity Prior Art

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra*.

Comparison of the U.S. Patent No. 7,818,399 with U.S. Patent No. 5,870,717 "System for ordering items over computer network using an electronic catalog" combined with the Travelocity Prior Art

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra*.
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	*See* 13-16, *supra*.
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra*.

Comparison of U.S. Patent No. 7,818,399 and United States Patent Application 09/995,278 by Saliba ("Saliba '278") combined with the Digital River Secure Sales System ("Digital River SSS")

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, U.S. Patent Application 09/995,278 combined with Digital River SSS renders obvious the asserted claims as described in part below.

There is motivation to combine Saliba '278 and Digital River SSS because they are both related to e-commerce outsourcing processes for selling products over the Internet and thus are in the same field of endeavor. Saliba '278 discloses an electronic financial system for providing financial services over the Internet has multiple billers, a service center, multiple financial institutions. *See* Saliba '278 at Abstract. The Digital River Secure Sales System brought together manufacturers and dealers enabling them to sell and deliver products via the Internet through vendor websites. *See* Exhibit 9A. Both Saliba '278 and Digital River SSS disclose electronic commerce systems that are directed to offering commerce objects over the Internet.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
1	A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	*See* Ex. 9C, at 1. *See* Ex. 31C, at 1.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated;	*See* Ex. 9C, at 1(a). *See* Ex. 31C, at 1(a).
1(a)(i)	wherein each of the first web pages belongs to one of a plurality of web page owners;	*See* Ex. 9C, at 1(a)(i). *See* Ex. 31C, at 1(a)(i).
1(a)(ii)	wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a	*See* Ex. 9C, at 1(a)(ii). *See* Ex. 31C, at 1(a)(ii).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	selected one of a plurality of merchants; and	
1(a)(iii)	wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	*See* Ex. 9C, at 1(a)(ii). *See* Ex. 31C, at 1(a)(ii).
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	*See* Ex. 9C, at 1(b). *See* Ex. 31C, at 1(b).
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes:	*See* Ex. 9C, at 1(c). *See* Ex. 31C, at 1(c).
1(c)(i)	(i) information associated with the commerce object associated with the link that has been activated, and	*See* Ex. 9C, at 1(c)(i). *See* Ex. 31C, at 1(c)(i).
1(c)(ii)	(ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	*See* Ex. 9C, at 1(c)(ii). *See* Ex. 31C, at 1(c)(ii).
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	*See* Ex. 9C, at 3. *See* Ex. 31C, at 3.
4	The method of claim 1 wherein at least one of the plurality of	*See* Ex. 9C, at 4. *See* Ex. 31C, at 4.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	visually perceptible elements includes the appearance of the top and left side of the source page.	
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	*See* Ex. 9C, at 5. *See* Ex. 31C, at 5.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	*See* Ex. 9C, at 6. *See* Ex. 31C, at 6.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* Ex. 9C, at 7. *See* Ex. 31C, at 7.
8	The method of claim 1 wherein the second web page is	*See* Ex. 9C, at 8. *See* Ex. 31C, at 8.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	generated dynamically.	
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	*See* Ex. 9C, at 9. *See* Ex. 31C, at 9.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* Ex. 9C, at 10. *See* Ex. 31C, at 10.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*See* Ex. 9C, at 11. *See* Ex. 31C, at 11.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	*See* Ex. 9C, at 12. *See* Ex. 31C, at 12.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which	*See* Ex. 9C, at 13. *See* Ex. 31C, at 13.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	*See* Ex. 9C, at 14. *See* Ex. 31C, at 14.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	*See* Ex. 9C, at 15. *See* Ex. 31C, at 15.
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra*.
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	*See* Ex. 9C, at 17. *See* Ex. 31C, at 17.
18	The method of claim 1,	*See* Ex. 9C, at 18.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 31C, at 18.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the	*See* 1(a)-1(b), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	first web page displaying the associated link are each third parties with respect to one other;	
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements	*See* 1(a)-1(c), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	visually corresponding to the source page.	
20	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are	*See* 1, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation	*See* 7, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra.*
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory	*See* 13-16, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra.*

Comparison of the U.S. Patent No. 7,818,399 and U.S. Patent No. 6,330,575 to Moore ("Moore") combined with U.S. Patent No. 7,565,308 to Bollay ("Bollay")

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, U.S. Patent No. 6,330,575 combined with U.S. Patent No. 7,565,308 renders obvious the asserted claims as described in part below.

There is a motivation to combine Moore with Bollay because they both are related to e-commerce outsourcing processes for selling products over the Internet and thus are in the same field of endeavor. Moore discloses development applications for a merchant to utilize in the design of its Web page or Web site that allow the merchant to become part of a distributed Internet commerce system for selling its products. *See* Moore at Abstract. Similarly, Bollay discloses a network configuration of a number of affiliate web sites and a number of vendor web sites designed to execute sales of vendor products featured on the affiliate websites. *See* Bollay at Abstract. The affiliate websites feature vendor products where a buyer can browse the various products, research information about the products, and purchase the products. Both Moore and Bollay disclose electronic commerce systems that are directed to efficiently selling commerce objects over the Internet.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	*See* Ex. 1C, at 1. *See* Ex. 3C, at 1.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	*See* Ex. 1C, at 1(a). *See* Ex. 3C, at 1(a).
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the	*See* Ex. 1C, at 1(b). *See* Ex. 3C, at 1(b).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	source page; and then	
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	*See* Ex. 1C, at 1(c). *See* Ex. 3C, at 1(c). *See also* 3-6, *infra*.
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	*See* Ex. 1C, at 3. *See* Ex. 3C, at 3.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	*See* Ex. 1C, at 4. *See* Ex. 3C, at 4.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	*See* Ex. 1C, at 5. *See* Ex. 3C, at 5.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	*See* Ex. 1C, at 6. *See* Ex. 3C, at 6.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional	*See* Ex. 1C, at 7. *See* Ex. 3C, at 7.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	second web pages, each pertaining to a subset of the offerings in the catalog.	
8	The method of claim 1 wherein the second web page is generated dynamically.	*See* Ex. 1C, at 8. *See* Ex. 3C, at 8.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	*See* Ex. 1C, at 9. *See* Ex. 3C, at 9.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* Ex. 1C, at 10. *See* Ex. 3C, at 10.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*See* Ex. 1C, at 11. *See* Ex. 3C, at 11.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	*See* Ex. 1C, at 12. *See* Ex. 3C, at 12.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	*See* Ex. 1C, at 13. *See* Ex. 3C, at 13.
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	*See* Ex. 1C, at 14. *See* Ex. 3C, at 14.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	*See* Ex. 1C, at 15. *See* Ex. 3C, at 15.
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra.*
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	*See* Ex. 1C, at 17. *See* Ex. 3C, at 17.
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 1C, at 18. *See* Ex. 3C, at 18.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected	*See* 1(a)-1(b), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	*See* 1(a)-1(c), *supra.*
20	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the	*See* Ex. 1C, at 20. *See* Ex. 3C, at 20.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra.*
23	The computer-readable memory of claim 20	*See* 10, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	*See* 13-16, *supra.*
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra.*

Comparison of the U.S. Patent No. 7,818,399 and Digital River Secure Sales System Prior Art combined with U.S. Patent No. 5,870,717 to Wiecha ("Wiecha")

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, Digital River Secure Sales System Prior Art combined with U.S. Patent No. 5,870,717 renders obvious the asserted claims as described in part below.

According to Plaintiff's Infringement Contentions regarding the Digital River System, there is a motivation to combine the Digital River Secure Sales System Prior Art with Wiecha because both are related to e-commerce outsourcing processes for selling commerce items over a computer network and thus are in the same field of endeavor. The Digital River Secure Sales System brought together manufacturers and dealers enabling them to sell and deliver products via the Internet through vendor websites. *See* Exhibit 9C. Similarly, Wiecha discloses a corporate computer network for ordering products from numerous electronic catalogs that are accessible by employees of that corporation. *See* Wiecha at Abstract. The employees may research, select, and process the purchase of the products provided in the electronic catalogs. Both the Digital River Secure Sales System and Wiecha disclose electronic commerce systems that are directed to efficiently selling commerce objects through a computer network.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	*See* Ex. 9C, at 1. *See* Ex. 6C, at 1.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	*See* Ex. 9C, at 1(a). *See* Ex. 6C, at 1(a).
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the	*See* Ex. 9C, at 1(b). *See* Ex. 6C, at 1(b).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	source page; and then	
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	*See* Ex. 9C, at 1(c). *See* Ex. 6C, at 1(c). *See also* 3-6, *infra.*
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	*See* Ex. 9C, at 3. *See* Ex. 6C, at 3.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	*See* Ex. 9C, at 4. *See* Ex. 6C, at 4.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	*See* Ex. 9C, at 5. *See* Ex. 6C, at 5.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	*See* Ex. 9C, at 6. *See* Ex. 6C, at 6.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional	*See* Ex. 9C, at 7. *See* Ex. 6C, at 7.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	second web pages, each pertaining to a subset of the offerings in the catalog.	
8	The method of claim 1 wherein the second web page is generated dynamically.	*See* Ex. 9C, at 8. *See* Ex. 6C, at 8.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	*See* Ex. 9C, at 9. *See* Ex. 6C, at 9.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* Ex. 9C, at 10. *See* Ex. 6C, at 10.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*See* Ex. 9C, at 11. *See* Ex. 6C, at 11.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	*See* Ex. 9C, at 12. *See* Ex. 6C, at 12.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	*See* Ex. 9C, at 13. *See* Ex. 6C, at 13.
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	*See* Ex. 9C, at 14. *See* Ex. 6C, at 14.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	*See* Ex. 9C, at 15. *See* Ex. 6C, at 15.
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra.*
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	*See* Ex. 6C, at 17.
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 9C, at 18. *See* Ex. 6C, at 18.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected	*See* 1(a)-1(b), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	*See* 1(a)-1(c), *supra.*
20	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the	*See* Ex. 9C, at 20. *See* Ex. 6C, at 20.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* 7, *supra.*
23	The computer-readable memory of claim 20	*See* 10, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	*See* 13-16, *supra.*
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra.*

Comparison of U.S. Patent No. 7,818,399 and United States Patent Application 09/995,278 by Saliba ("Saliba '278") combined with United States Patent Number 6,330,575 to Moore ("Moore '575")

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, U.S. Patent Application 09/995,278 combined with United States Patent Number 6,330,575 renders obvious the asserted claims as described in part below.

There is motivation to combine Saliba '278 and Moore '575 because they are both related to e-commerce outsourcing processes for selling products over the Internet and thus are in the same field of endeavor. Saliba '278 discloses an electronic financial system for providing financial services over the Internet has multiple billers, a service center, multiple financial institutions. *See* Saliba '278 at Abstract. Moore '575 discloses development applications for a merchant to utilize in the design of its Web page or Web site that allow the merchant to become part of a distributed Internet commerce system for selling its products. *See* Moore '575 at Abstract. Both Saliba '278 and Moore '575 disclose electronic commerce systems that are directed to offering commerce objects over the Internet.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
1	A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	*See* Ex. 1C, at 1. *See* Ex. 31C, at 1.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated;	*See* Ex. 1C, at 1(a). *See* Ex. 31C, at 1(a).
1(a)(i)	wherein each of the first web pages belongs to one of a plurality of web page owners;	*See* Ex. 1C, at 1(a)(i). *See* Ex. 31C, at 1(a)(i).
1(a)(ii)	wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a	*See* Ex. 1C, at 1(a)(ii). *See* Ex. 31C, at 1(a)(ii).

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	selected one of a plurality of merchants; and	
1(a)(iii)	wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	*See* Ex. 1C, at 1(a)(ii). *See* Ex. 31C, at 1(a)(ii).
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	*See* Ex. 1C, at 1(b). *See* Ex. 31C, at 1(b).
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes:	*See* Ex. 1C, at 1(c). *See* Ex. 31C, at 1(c).
1(c)(i)	(i) information associated with the commerce object associated with the link that has been activated, and	*See* Ex. 1C, at 1(c)(i). *See* Ex. 31C, at 1(c)(i).
1(c)(ii)	(ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	*See* Ex. 1C, at 1(c)(ii). *See* Ex. 31C, at 1(c)(ii).
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	*See* Ex. 1C, at 3. *See* Ex. 31C, at 3.
4	The method of claim 1 wherein at least one of the plurality of	*See* Ex. 1C, at 4. *See* Ex. 31C, at 4.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	visually perceptible elements includes the appearance of the top and left side of the source page.	
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	*See* Ex. 1C, at 5. *See* Ex. 31C, at 5.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	*See* Ex. 1C, at 6. *See* Ex. 31C, at 6.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* Ex. 1C, at 7. *See* Ex. 31C, at 7.
8	The method of claim 1 wherein the second web page is	*See* Ex. 1C, at 8. *See* Ex. 31C, at 8.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	generated dynamically.	
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	*See* Ex. 1C, at 9. *See* Ex. 31C, at 9.
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* Ex. 1C, at 10. *See* Ex. 31C, at 10.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*See* Ex. 1C, at 11. *See* Ex. 31C, at 11.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	*See* Ex. 1C, at 12. *See* Ex. 31C, at 12.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which	*See* Ex. 1C, at 13. *See* Ex. 31C, at 13.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	*See* Ex. 1C, at 14. *See* Ex. 31C, at 14.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	*See* Ex. 1C, at 15. *See* Ex. 31C, at 15.
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission to the owner of the source page.	*See* 10, *supra.*
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	*See* Ex. 1C, at 17. *See* Ex. 31C, at 17.
18	The method of claim 1,	*See* Ex. 1C, at 18.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 31C, at 18.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* 1, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the	*See* 1(a)-1(b), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	first web page displaying the associated link are each third parties with respect to one other;	
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements	*See* 1(a)-1(c), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	visually corresponding to the source page.	
20	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are	*See* 1, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	each third parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation	*See* 7, *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra.*
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory	*See* 13-16, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* 18, *supra*.

Comparison of U.S. Patent No. 7,818,399 and Sextoys.com Prior Art ("Sextoys") combined with U.S. Patent No. 7,565,308 to Bollay ("Bollay")

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, Sextoys combined with U.S. Patent No. 7,565,308 to Bollay renders obvious the asserted claims as described in part below. *See* Defendants' Invalidity Contents for an explanation of the reasons for combining Sextoys and Bollay.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	*See* Ex. 24C, at 1. *See* Ex. 3C, at 1.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	*See* Ex. 24C, at 1(a). *See* Ex. 3C, at 1(a).
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	*See* Ex. 24C, at 1(b). *See* Ex. 3C, at 1(b).
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated	*See* Ex. 24C, at 1(c). *See* Ex. 3C, at 1(c). *See also* 3-6, *infra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre stored data and visually corresponding to the source page.	
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	*See* Ex. 24C, at 3. *See* Ex. 3C, at 3.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	*See* Ex. 24C, at 4. *See* Ex. 3C, at 4.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	*See* Ex. 24C, at 5. *See* Ex. 3C, at 5.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	*See* Ex. 24C, at 6. *See* Ex. 3C, at 6.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* Ex. 24C, at 7. *See* Ex. 3C, at 7.
8	The method of claim 1 wherein the second web page is generated dynamically.	*See* Ex. 3C, at 8.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for	*See* Ex. 24C, at 9. *See* Ex. 3C, at 9.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	receipt of a commission as a result of a transaction involving the commerce object displayed on the source page.	
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* Ex. 3C, at 10.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*See* Ex. 24C, at 11. *See* Ex. 3C, at 11.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	*See* Ex. 24C, at 12. *See* Ex. 3C, at 12.
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	*See* Ex. 3C, at 13.
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	*See* Ex. 24C, at 14. *See* Ex. 3C, at 14.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	*See* Ex. 24C, at 15. *See* Ex. 3C, at 15.
16	The method of claim 14, further comprising after the transaction is completed,	*See* 10, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	computer-facilitating payment of a commission to the owner of the source page.	
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	*See* Ex. 3C, at 17. .
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 24C, at 18. *See* Ex. 3C, at 18.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* Ex. 24C, at 19. *See* 1, *supra.*
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* Ex. 24C, at 19(a). *See* 1(a)-1(b), *supra.*
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a	*See* Ex. 24C, at 19(b). *See* 1(a)-1(c), *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	signal indicating activation of one of the links displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	
20	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third	*See* Ex. 24C, at 20. *See* Ex. 3C, at 20.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	parties with respect to one another; (b) automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* Ex. 24C, at 22. *See* 7, *supra.*
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra.*
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when	*See* 13-16, *supra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	activated by the web browser, places data representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 24C, at 25. *See* 18, *supra.*

Comparison of U.S. Patent No. 7,818,399 and IBM.com Prior Art ("IBM") combined with U.S. Patent No. 7,565,308 to Bollay ("Bollay")

Based upon the claim interpretations Plaintiff appears to be asserting and the alleged applications of those interpretations to one or more products of Defendants' products in Plaintiff's Infringement Contentions served April 15, 2011, IBM combined with U.S. Patent No. 7,565,308 to Bollay renders obvious the asserted claims as described in part below. *See* Defendants' Invalidity Contents for an explanation of the reasons that Sextoys and Bollay can be combined.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
1	1. A method of an outsource provider serving web pages offering commercial opportunities, the method comprising:	*See* Ex. 27C, at 1. *See* Ex. 3C, at 1.
1(a)	automatically at a server of the outsource provider, in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one other;	*See* Ex. 27C, at 1(a). *See* Ex. 3C, at 1(a).
1(b)	automatically retrieving from a storage coupled to the server pre stored data associated with the source page; and then	*See* Ex. 27C, at 1(b). *See* Ex. 3C, at 1(b).
1(c)	automatically with the server computer generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived	*See* Ex. 27C, at 1(c). *See* Ex. 3C, at 1(c). *See also* 3-6, *infra.*

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	from the retrieved pre stored data and visually corresponding to the source page.	
3	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a set of navigational links on the source page.	*See* Ex. 27C, at 3. *See* Ex. 3C, at 3.
4	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the top and left side of the source page.	*See* Ex. 27C, at 4. *See* Ex. 3C, at 4.
5	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes the appearance of the header and footer of the source page.	*See* Ex. 27C, at 5. *See* Ex. 3C, at 5.
6	The method of claim 1 wherein at least one of the plurality of visually perceptible elements includes a logo associated with the owner of the source page.	*See* Ex. 27C, at 6. *See* Ex. 3C, at 6.
7	The method of claim 1 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* Ex. 27C, at 7. *See* Ex. 3C, at 7.
8	The method of claim 1 wherein the second web page is generated dynamically.	*See* Ex. 27C, at 8. *See* Ex. 3C, at 8.
9	The method of claim 1 wherein the owner of the source page is party to a contract providing for receipt of a commission as a result of a	*See* Ex. 3C, at 9. .

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	transaction involving the commerce object displayed on the source page.	
10	The method of claim 9 further comprising computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* Ex. 3C, at 10.
11	The method of claim 1, wherein the second web page appears to the computer user to be generated by a server associated with the source page.	*See* Ex. 27C, at 11. *See* Ex. 3C, at 11.
12	The method of claim 1, wherein the link activated by the web browser is stored in a database associated with the source page.	*See* Ex. 3C, at 12. .
13	The method of claim 1, wherein the second web page contains a further link associated with the information associated with the commerce object associated with the link that has been activated, which link, when activated by the web browser, places data representing the commerce object into a virtual shopping cart.	*See* Ex. 3C, at 13. .
14	The method of claim 13, wherein the second web page contains a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart.	*See* Ex. 3C, at 14.
15	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link.	*See* Ex. 3C, at 15. .
16	The method of claim 14, further comprising after the transaction is completed, computer-facilitating payment of a commission	*See* 10, *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	to the owner of the source page.	
17	The method of claim 13, further comprising displaying the second web page again, after the commerce object is placed into the shopping cart.	*See* Ex. 3C, at 17.
18	The method of claim 1, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 27C, at 18. *See* Ex. 3C, at 18.
19	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:	*See* Ex. 27C, at 19. *See* 1, *supra*.
19(a)	(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;	*See* Ex. 27C, at 19(a). *See* 1(a)-1(b), *supra*.
19(b)	(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to: (i) receive from the web browser of a computer user a signal indicating activation of one of the links	*See* Ex. 27C, at 19(b). *See* 1(a)-1(c), *supra*.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	displayed by one of the first web pages; (ii) automatically identify as the source page the one of the first web pages on which the link has been activated; (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.	
20	A computer-readable memory adapted for use by an outsource provider in serving web pages offering commercial opportunities, the computer-readable memory used to direct a computer of the outsource provider to perform the steps of: (a) in response to activation, by a web browser of a computer user, of a link displayed by one of a plurality of first web pages, automatically recognizing as the source page the one of the first web pages on which the link has been activated; (i) wherein each of the first web pages belongs to one of a plurality of web page owners; (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page are each third parties with respect to one another; (b)	*See* Ex. 27C, at 20. *See* Ex. 3C, at 20.

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	automatically retrieving from a storage coupled to the computer of the outsource provider pre-stored data associated with the source page; and then (c) automatically computer-generating and transmitting to the web browser a second web page that includes: (i) information associated with the commerce object associated with the link that has been activated, and (ii) a plurality of visually perceptible elements derived from the retrieved pre-stored data and visually corresponding to the source page.	
22	The computer-readable memory of claim 20 wherein the commerce object associated with the link that has been activated comprises information defining an electronic catalog having a multitude of merchant offerings, and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.	*See* Ex. 27C, at 22. *See* 7, *supra*.
23	The computer-readable memory of claim 20 wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further step of computer-facilitating automatic payment to the owner of the source page, once the transaction is completed.	*See* 10, *supra*.
24	The computer-readable memory of claim 20, (i) wherein the second web page contains a further link associated with the information associated with the commerce object, which, when activated by the web browser, places data	*See* 13-16, *supra*.

Comparison of U.S. Patent No. 7,818,399, IBM and Bollay

Claim No.	Claim Language of U.S. Patent No. 7,818,399	Relevant Disclosures
	representing the commerce object into a virtual shopping cart, and a checkout link which, when activated by the web browser, facilitates completion of a transaction associated with the commerce object in the shopping cart; and (ii) wherein the computer-readable memory is used to direct the computer of the outsource provider to perform the further steps of, after the transaction is completed, computer-facilitating payment from the computer user to the merchant associated with the activated link and computer-facilitating payment of a commission to the owner of the source page.	
25	The computer-readable memory of claim 20, wherein the visually perceptible elements displayed on the second web page are retrieved from a database storing data associated with visually perceptible elements for each of the first web pages.	*See* Ex. 27C, at 25. *See* 18, *supra*.

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Taken From "Cascading Style Sheets: Separating Content from Presentation", by glasshaus.

The World Wide Web (the Web for short) is a massive media revolution, producing not only a massive spike in the US and world economies in the last years of the 20th century, but also empowering individuals and organizations with self-publishing capabilities and a ready-made world-wide audience. Where the printing press gave us the ability to record and distribute information, the Web increased those abilities exponentially, removing the barrier of the commercial publishing system to the production of self-published materials.

Due to its revolutionary nature, the Web has been the subject of massive hype, commercial gold-digging, and genuine advances in human communications; and not in equal amounts. But in spite of the abuses, the Web has blossomed as both a mode of self-expression for countless self-publishers, as well as a viable commercial center and a powerful digital library.

However, the Web is certainly not without its problems. After enjoying half a decade of optimistic growth, the web economy has been fed a dose of reality. Gone are the days of the dot com millionaire made over night with a web server and a good idea. Gone are the days of abundant high-salaried dot com jobs. These are the days of struggling web businesses, fighting to find the proper model that works in these uncharted waters of the Web, slashing costs and cutting payroll.

The economic troubles are not the only challenges facing the Web; there are also technological hurdles that must be leapt, for in the Web's early growth, expediency and pizzazz won over wisdom and solid development practices. Some of the blocks that were laid in the early explosion of web growth were faulty at best, and remain unsuitable as foundations for future building.

Recall that the Web is an interconnected group of computers, from the army of small iMacs and PCs on the desktops of homes and offices around the world, to massive web server farms that feed pages to an ever-increasing audience. On these web servers are documents (web pages), each of which can be connected to other documents via hyperlinks. Web surfers use web browsers, like Netscape's Navigator, Microsoft's Internet Explorer, or the Opera browser, to retrieve and view these web pages from the web servers that serve them.

As you know, the web pages themselves are constructed with a markup language called HyperText Markup Language (HTML). Using a markup language, an author "marks up" a document with structural and other meta-information right along side the document's content. As innocuous as that may sound, HTML is at the center of one of the technological struggles the Web now faces, a struggle which is quickly reaching a crossroads: is HTML to be used as a *presentation* language, used to define the visual appearance of a web page, or is it to be used as a traditional markup language, defining the *structure* of documents and leaving layout and visual design to a style language. It's a complicated question, and at its heart lies the subject of this book: Cascading Style Sheets (CSS).

> To understand the difference between "structure" and "presentation", consider the following sentence:
>
> "William Faulkner's Sanctuary is one hell of a scary book."
>
> Structurally speaking, the word "Sanctuary" is a book title; in terms of presentation, on the other hand, the word is underlined. This distinction is lost on many because of the ubiquity of word processing applications such as MS Word, which blur the line between structure and presentation. In a word processing application, we don't select the text "Sanctuary" and hit the "book title" button. We hit the "U" button, which underlines it as we wish. In the following sections you'll see why marking up text structurally produces more powerful documents.

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CSS is a style language that can be used in conjunction with HTML to define the visual presentation of a web page. "If that's the case", you might ask, "then why is there any question of using HTML as a presentation language?" The short answer is that CSS did not exist until 1996, five years after the birth of the Web, and even now is not fully supported by the dominant web browsers. Thus, web professionals have taken to twisting HTML to suit their own design and presentation purposes, misusing the markup language and adding elements to pages that contribute nothing to the content.

Style languages may also be used to control more than just the visual presentation of documents; for instance, aural browsers can use stylesheets to guide inflection and intonation when reading documents aloud to sight impaired persons. This book will deal nearly exclusively with stylesheets used for visual browsers, but it is important to note that the markup practices recommended herein will also allow you to attach other types of stylesheets to your documents. The Web is bigger than what we can see.

As we'll see shortly, this situation has improved dramatically in recent years, and CSS now represents great hope for the Web's future.

A Short History of the Web

In order to understand why using CSS is vital to the health of the Web, one must know a little history. You may be tempted to skip this section, having probably read similar accounts of the Web's short life countless times. But I encourage you not to skip ahead, but to instead read on and think about the implications of the Web's short but rapidly evolving past.

In 1990, Tim Berners-Lee released the world's first web browser and launched the world's first web server, on which he published for discussion the specifications of many of the technologies that run the Web today over ten years later. His goal in releasing this software was to facilitate the sharing of research documents amongst scientists. He created an SGML (Standard Generalized Markup Language) application that he called HyperText Markup Language (HTML), which was a document format suitable for transmission over his new protocols.

The truly distinctive element of his whole system was the hyperlink, which put the "hyper" in HyperText Markup Language. The hyperlink may not seem all that revolutionary to you now, and in fact even before the Web it had been around as a concept for decades, and experiments in hypertext systems were not new; but before Berners-Lee, no hypertext application had been a part of a network the size of the 1990 Internet, and it was the combination of the network and hypertext that made his experiment a success.

As you know, the hyperlink's power is that it allows random connections between disparate bits of data. It escapes the traditional hierarchical data storage systems of computers, and allows documents to be "linked" to one another in arbitrary ways. It mimics the associative nature of the human brain, which connects anyone can read web pages with any software running on any hardware. This is what makes the Web itself." (Quote from an email between Tim Berners-Lee and CNET.) As openness increases, so does the power of hypertext, and therefore the Web as a whole.

Berners-Lee invented HTML in order to maximize openness. This simple text document format could be transmitted easily using his new Internet protocols to any computer platform that implemented those protocols. Using standard ASCII text as a file format ensured that existing computer platforms would have no problem handling HTML documents, and choosing to build HTML as an SGML application, which was a platform neutral system for describing the contents of a document, created an open environment for platform specific browser makers.

HTML documents in 1990 were radically different from how they are today. The familiar look of the Web today, with flashing images, animations, and multimedia files, was an unimagined thing of the future. In order to understand how HTML got where it is now, we have to take a closer look at where it came from.

Where did HTML come from?

As stated above, Berners-Lee based his new markup language on SGML, which has a wonderful history of its own.

In the late 1960's Charles Goldfarb left the legal profession to work with IBM where he established the principles of modern markup languages. His goal was to create a system that would enable the specification of documents that could be stored in a database, edited, and output for printing with a minimum of difficulty. The documents themselves were to be stored without any presentational information, containing only content and structural information.

His work, together with that of Ed Mosher and Ray Lorie, resulted in GML (Generalized Markup Language), and was an ambitious effort that overcame incredible obstacles. The task at hand was to apply his knowledge of computing to the storage, retrieval and editing of legal documents. As he remembers it:

"That project required integrating a text editing application with an information retrieval system and a page composition program. The documents had to be kept in a repository from which they could be selected by queries. The selected documents could be revised with the text editor and returned to the database, or rendered for presentation by the composition program."

As you've learned, a markup language is used to markup, or tag, a document's elements with information regarding the elements' structural position in the document. A page header in a markup document, for example, might look like this:

```
<header>On the Nature of Markup</header>
```

However, before GML, markup (then called procedural markup) was application specific – the text editor and the page composition program of Goldfarb's project required their own unique markup to process the documents. What GML did was to establish a uniform set of markup tags. Documents so marked up could then be "understood" by *all* the different applications needed to process the documents. The goal was platform and application neutrality, a system whereby different applications on different platforms could share documents freely.

SGML, the next step in the evolution of markup languages, pushed GML even further with the introduction of Document Type Definitions (DTDs), which allowed the creation of new sets of markup tags for any given set of documents. A validating parser could then read the document type definition, which defined a specific markup system, and ensure the accuracy of the marked up document. Applications could use the document type definition to make sense of the document.

So what does that have to do with HTML, you ask? Well, HTML is an SGML application, a markup language defined according to the rules of SGML. As such, it is intended to communicate the structural meaning of HTML document elements with a set of tags defined in the HTML document type definition. The following is a simple example of a web page, starting with the document type declaration (see the "`<!DOCTYPE>`") and followed by the HTML markup.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"

   "DTD/xhtml1-transitional.dtd">

<html>

 <head>

  <title>An HTML document</title>

 </head>

 <body>

  <p>Herein is the lone content of our web page.</p>

 </body>

</html>
```

As you can see, the content of the page is contained within a nested series of tags, which provide a structural framework for the content. The markup of the page is intended to communicate the semantic relationships of the page's elements to one another.

In this book, we'll be using XHTML as our markup language in all examples. XHTML is a reformulation of the HTML vocabulary as an XML application, which is itself an SGML application. XML was developed to sit in between HTML and SGML, retaining the simplicity of the former while providing some of the power and flexibility of the latter. The Web of the future will rely heavily on XML, and so the W3C has discontinued the development of HTML, recommending instead the migration to XHTML, which will allow documents authored today to be forward compatible with the XML heavy Web of the future.

What Happened to HTML?

As I've already mentioned, when the Web was but a toddler, there was no style language available to web authors to instruct browsers on how to display the elements of a page. Instead, browsers had internal rules that governed all presentational aspects of a web page. For instance, a piece of content marked as a header would be typically rendered in a relatively large font with bold text, and something tagged as a `<blockquote>` would usually appear with indented left and right margins.

The user was given access to some of these rules through the browser's preferences. For example, a web surfer could select what color a link should be, and what typeface the browser should use. These preference settings applied globally, to all web pages, not to specific pages or sites.

However, web authors had no way to control layout or typography; they were totally at the mercy of the browser's internal page rendering engine, and these engines differed from browser to browser. For instance, take the `<em>` tag, which is used to markup up a bit of text intended to be emphasized. Some browsers choose to represent the `<em>` element with *italicized* text, while others use **bolded** text.

Now, this situation wasn't particularly problematic to the first web audience; the scientists that shared the first web pages were much more interested in the content of the documents than the typeface and color with which they were displayed. But, as the Web began to build an audience that was not exclusively research scientists sharing scientific results, the desire to control visual design of web pages grew accordingly. Early extensions to the HTML language, therefore, included `<b>` and `<i>` tags, which allowed the author to specify whether text should be bold or italic, respectively. Such minor additions were relatively benign, not seriously affecting the structural value of a document, but many more additions were to come, which would have more problematic results.

When Netscape introduced its 1.1 version of the popular Navigator browser, a new element was added to the HTML author's arsenal: the `<table>` element. An HTML `<table>` is intended to hold tabular data, with column and row headers organizing a grid of information, like so:

	Milk	Eggs
Chocolate	Chocolate milk	Cadbury Creme Eggs
Flour	Batter	Dough

The `<table>` tag was a great addition to the HTML language, especially useful for displaying scientific results data, but it quickly became an innocent victim in a nefarious plot to twist the usage of the HTML language, resulting in the dot com collapse of the year 2000, and the loss of thousands of web related jobs. Well, not really... However, web authors did see something in the `<table>` tag that it was not intended for: a `<table>` could be used to create multi-column web page layouts.

Tables were quickly put to use controlling page layouts; instead of containing tabular data, web authors used tables to contain whole pages. But with no other way to define page layouts, and with an army of web authors arriving on the burgeoning web design scene without an inkling of what a markup language is supposed to be, the `<table>` quickly became the poster child for abused HTML elements.

In addition, Netscape and Microsoft, still today the dominant web browser makers, engaged in an all out battle to win users to their browser. As the Web rose to prominence in the computing world, the browser quickly became one of the most important pieces of software on a computer. Some said it would replace the OS, others said the Web itself was a new platform. Also, the dot com explosion of the 1990's brought commercial interests to the Web with a force that no well-meaning technologist could combat: the need for companies to maintain a consistent brand image on their new web sites was greater than any concern for the integrity of HTML as a markup language. A better-looking web site was more important than correct markup.

Sensing this need of the commercial web page author to control page presentation, and using that as a way to attract both developers and users to their software, both Microsoft and Netscape encouraged the use of `<table>` for layout, and introduced a series of HTML extensions such as the abominable `<blink>` and the obnoxious `<marquee>`. These elements were, of course, not universally supported, and represented a willful disregard for HTML as a structural markup language. The `<blink>` element communicates nothing of structural value about the text it tags; it merely instructs the Netscape browser on how to display it.

Perhaps the worst of all such extensions, however, was the most egregious `<font>` element. Although all browsers support the tag today, which allows a web author to define the color, size and typeface for text, its use encourages the common thinking that HTML is intended to communicate document presentation. Combine the `<font>` element with the `<table>` element, and the fact that the once dominant Netscape browser did not carry `<font>` specifications into `<table>` elements, and you find the explanation for the morass of markup, nearly devoid of structural information, that passes for an HTML document even today. As an example of the muddied markup I am talking about, I found the following markup within about five minutes of looking on the home page of a major web site (it has been modified to protect the guilty):

```
<TABLE BORDER=0 CELLPADDING=2 CELLSPACING=2>
 <TR VALIGN=TOP>
  <TD BGCOLOR=#FFFFFF WIDTH="33%" ALIGN=LEFT>
   <FONT FACE="Verdana, Arial, Helvetica, sans-serif" SIZE=1 CLASS="s1cB">
    <A HREF="http://example.com">
     <NOBR>
      <B>Dow</B>
     </NOBR>
    </A>
   </FONT>
  </TD>
  <TD BGCOLOR=#FFFFFF WIDTH="33%" ALIGN=RIGHT>
   <FONT FACE="Verdana, Arial, Helvetica, sans-serif" SIZE=1 CLASS="size1">
    9698.30
   </FONT>
  </TD>
  <TD BGCOLOR=#FFFFFF WIDTH="33%" ALIGN=RIGHT>
   <FONT FACE="Verdana, Arial, Helvetica, sans-serif" SIZE=1 CLASS="size1">
    <SCRIPT TYPE="text/javascript" LANGUAGE="JavaScript">
    setFontColor(11.21);</SCRIPT>
     11.21
```

```
      </FONT>
    </FONT>
  </TD>
</TR>
<TR VALIGN=TOP>
  <TD BGCOLOR=#FFFFFF WIDTH="33%" ALIGN=LEFT>
    <FONT FACE="Verdana, Arial, Helvetica, sans-serif" SIZE=1 CLASS="s1cB">
      <A HREF="http://example.com"><NOBR><B>Nasdaq</B></NOBR></A>
    </FONT>
  </TD>
  <TD BGCOLOR=#FFFFFF WIDTH="33%" ALIGN=RIGHT>
    <FONT FACE="Verdana, Arial, Helvetica, sans-serif" SIZE=1 CLASS="size1">
      1850.43
    </FONT>
  </TD>
  <TD BGCOLOR=#FFFFFF WIDTH="33%" ALIGN=RIGHT>
    <FONT FACE="Verdana, Arial, Helvetica, sans-serif" SIZE=1 CLASS="size1">
      <SCRIPT TYPE="text/javascript" LANGUAGE="JavaScript">
      setFontColor(-5.10);</SCRIPT>
        -5.10
      </FONT>
    </FONT>
  </TD>
</TR>
<TR VALIGN=TOP>
  <TD BGCOLOR=#FFFFFF WIDTH="33%" ALIGN=LEFT>
    <FONT FACE="Verdana, Arial, Helvetica, sans-serif" SIZE=1 CLASS="s1cB">
      <A HREF="http://example.com">
        <NOBR>
          <B>S&amp;P 500</B>
        </NOBR>
      </A>
    </FONT>
  </TD>
  <TD BGCOLOR=#FFFFFF WIDTH="33%" ALIGN=RIGHT>
    <FONT FACE="Verdana, Arial, Helvetica, sans-serif" SIZE=1 CLASS="size1">
      1092.50
    </FONT>
  </TD>
  <TD BGCOLOR=#FFFFFF WIDTH="33%" ALIGN=RIGHT>
    <FONT FACE="Verdana, Arial, Helvetica, sans-serif" SIZE=1 CLASS="size1">
      <SCRIPT TYPE="text/javascript" LANGUAGE="JavaScript">
      setFontColor(-1.94);</SCRIPT>
        -1.94
      </FONT>
    </FONT>
  </TD>
</TR>
<TR VALIGN=BOTTOM>
  <TD COLSPAN=3 ALIGN=CENTER>
    <FONT FACE="Verdana, Arial, Helvetica, sans-serif" SIZE=1
    COLOR=#003366 CLASS="s1cB">
      Quotes delayed by 20 minutes.
    </FONT>
  </TD>
</TR>
```

```
</TABLE>
```

Notice that a total of 2454 characters are used to display a grand total of less than 60 characters worth of actual content. Such is the state of modern markup without CSS.

Simple Table
File
Edit
View
Favorites
Tools
Hel
Local intranet

Dow	9698.30	11.21
Nasdaq	1850.43	-5.10
S&P 500	1092.50	-1.94

Quotes delayed by 20 minutes.

In addition to using non-standard tags like the `<font>` element and abusing tables for page layout purposes, web authors have attempted to overcome the shortcomings of HTML by placing text in images that are then loaded into the page via the `<img>` element, or building whole sites in proprietary technologies such as Flash, a plugin application that loads in a browser window. Both of these techniques afford the designer much greater control over presentation than HTML does – especially typographically speaking, basically giving free reign on typeface, color, and layout. When compared to the meager presentation control HTML affords, even when using `<font>` and `<table>`, a web site built with images instead of text is indeed very attractive.

However, such practices have negative consequences. They destroy the structural validity of a web page's markup. This results in the following problems:

(1) Inaccessibility

(2) Degraded performance

(3) Increased production work

Inaccessibility

Something not at all immediately apparent to most web professionals, even experienced ones, is that the Web's audience is not limited to users of Internet Explorer and Netscape Navigator. In addition to these premier visual browsers, there are a plethora of other visual browsers that have smaller but not insignificant groups of users. The Opera browser, Konqueror, Icab, Omniweb, and countless other browsers are used by many web surfers, chosen because they are typically faster at rendering pages than the big two, have a smaller disk footprint, or are less prone to security hole exploits.

In addition, the Web has already spread to the TV with the Webtv browser, and web browsers are now a standard feature on digital phones. Browsers are currently being built into appliances, so you can shop for groceries online from your refrigerator, or call up a recipe from an online recipe archive right in your kitchen. Perhaps most importantly, special software, such as a screen reader, helps the blind to access web content. With good solid structural XHTML markup, each of these various Internet devices can have equal access to your site's content.

In addition, the US federal government has even taken steps to ensure the accessibility of all federally run web sites. The site `http://www.section508.gov` details these federal requirements, and many states are currently enacting similar legislation to ensure these are fulfilled on their state run sites. Such guidelines, though unfortunately smacking of bureaucratic red-tape and regulations, are forward-looking and actually quite in keeping with the spirit of the Web.

Degraded Performance

Bad HTML practices used to achieve your layout and page design goals can actually make your pages load more slowly in the browser. Using `<table>` and `<font>` elements or inserting site copy into images adds bulk to each web page. Not only does that bulk require more time to download, it slows the browser's rendering engine down when it tries to display the page. It's a double whammy. Nested tables, which were almost a necessity when trying to achieve complicated table layouts, increase rendering time logarithmically in many common browsers as tables are added to the markup of a page.

Increased Production Work

Web site maintenance is an often overlooked consideration in the world of web development and design. All too often, client pressure to quickly produce a site that looks the same in IE and NN results in negligence on the part of the web professional, who pushes to complete the work quickly and easily, often testing the site only in browsers likely to be used by the client. It is often a difficult task to educate the client on the importance of any factors other than how the page looks in IE, although the lesson is sometimes learned later when site maintenance costs accumulate.

The fact is that reliance on HTML presentation hacks can seriously affect the maintainability of a site; not only does the site risk future obsolescence as newer browsers are introduced, but simple changes to a large site can become a nightmare of "search and replace", with fingers crossed.

Inserting presentation rules directly into HTML documents with `<font>` and `<table>` tags creates a maintenance headache, as any changes to the site presentation must be made on each document. Even before the site launches, implementing client-requested changes to a site under development can be a headache if a hundred HTML documents need to be changed for simple layout tweaks.

Introduction to Cascading Style Sheets

The full adoption of Cascading Style Sheets for web page layout and typographical design is the next step in the evolution of the Web. Tired of abusing HTML by using it to control the presentation of web pages, web professionals are turning en masse to a technology nearly seven years old in the hopes of rescuing the Web from fracture, and the Web's content from unnecessary obsolescence.

CSS has finally garnered enough support from browser makers, and generated enough excitement from web professionals to start making a difference on the Web. With the helpful nudging of advocacy groups like the Web Standards Project (the WaSP), browser makers like Microsoft and Netscape have recently released versions of their Internet Explorer and Navigator browsers with CSS support improvements in the order of magnitudes over previous releases. And Opera, the other main browser maker, has of its own initiative put forth arguably the most complete CSS implementation in its flagship browser, owing in no small part to the fact that Håkon Lie, the company's founder chief engineer, was a member of the group which issued the first CSS recommendation.

Even with great strides in CSS browser support, the adoption of CSS by the developer is no simple task, especially for those that have earned their bread and butter relying on the ubiquitous `<table>` hack and "single pixel gif" tricks (which use invisible images inserted in a page's markup to stretch page elements to the desired dimensions) to force browsers to present their page designs consistently in a varied and inconsistent field of browsers. For such a group of wizened developers, deciding to use CSS is more than a decision to change methods of defining page presentation. To be successful and rewarding, the use of CSS must be motivated by a thorough understanding of the deficiencies of the Web as we know it, as well as the promise that CSS and new design methodologies hold as we try to push the world's largest and most important media revolution forward into the 21st century.

For young developers, the generation of people who are the first to have grown up with the Web as a household word, we must find ways to teach proper development practices, lest they continue the unfortunate trend of the early Web towards the use of proprietary HTML extensions and invalid markup. The view-source school of web design, once a great boon as web professionals learned from, shared, and expanded upon the work of their peers, has become a dangerous teacher. Its classes are filled with bad examples and sites destined for obsolesce and irrelevance as the Web pushes forward; creaky old markup and questionable development techniques hinder progress.

That is why this book has been written: to train and educate the builders of the Web to use the appropriate technologies for the task at hand, in order that the Web in ten years will be the Web that Tim Berners-Lee intended when he invented it, and not an ever increasing morass of unstructured information.

The Birth of CSS

It may seem to you at this point that stylesheets are an afterthought, a change in plans for the Web. But the world's first web browser called "The WorldWideWeb browser" and built by Tim Berners-Lee, included an internal style language used by the browser when rendering HTML pages. In fact, many of the first generation of web browsers had their own style languages, some of which were even considered when the CSS recommendation was first under development. A style language is a natural, even necessary, partner for a markup language, for as we know, a markup language is not intended to define presentation.

However, these early HTML style languages were internal, used by the browser and not available to the document author. It quickly became apparent to the Web's early architects that control of presentation must in some way be wrested from a browser's internal presentation rules and handed to the web author. In 1994, Håkon Lie published the first draft of *Cascading HTML Style Sheets.*

As Håkon envisioned it, the style language for the Web must somehow combine author and user preferences. His proposal accomplished this with a "cascade" which allowed for multiple sets of style rules and a well-defined system for determining the weight of competing rules. It was the cascade that set his style language apart from other style languages of the day, and made it the natural choice for a presentation language to accompany HTML.

The World Wide Web Consortium (W3C) was formed in 1994 in order to establish technical standards for the growth and development of the Web, and it published the first CSS recommendation in December of 1996, known as CSS1. In May of 1998, the W3C released CSS2, which improved and expanded upon the first recommendation. CSS3 is currently under development.

These recommendations, while not actually "standards", provide browser makers with the necessary information to implement CSS in a uniform manner. Internet Explorer version 3 was the first browser to implement CSS, in August of 1996, before CSS was even an official recommendation. Netscape followed suit, and since then nearly all web browsers have implemented it.

As you'll learn, browser implementations of CSS vary widely, a problem that causes many web professionals to run screaming away from stylesheets with their hair afire. We hope in this book to keep you from that fate by presenting CSS as it currently works in modern browsers, advising you where older browsers may fail, and suggesting where future browsers may improve on CSS support. In the next section we'll take a look at CSS as it exists in its natural environment, the web page.

What is CSS?

CSS at its very core is extremely simple and powerful. It allows you to attach style rules to HTML markup elements, such as `<p>` or `<a>` elements. These rules define the presentational aspects of the HTML elements to which they apply, such as color or typeface.

Take a look at the following sample page, `YeOldeCheeseShop.htm`, which includes style rules embedded in the page markup:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<title>Ye Olde Cheese Shop</title>
<style type="text/css">
body {
 font-family: Verdana, Arial, sans-serif;
 }
a {
 color: red;
 text-decoration: none;
 font-weight: bold;
 }
#Header {
 position: absolute;
 left: 25px;
 top: 10px;
 }
#MainText {
 position: absolute;
 left: 225px;
 top: 100px;
 margin-right: 25px;
 }
#SiteNav {
 position: absolute;
 left: 25px;
 top: 100px;
 width: 175px;
 }
</style>
</head>
<body>
<div id="Header">
 <h1>Ye Olde Cheese Shop</h1>
</div>
<div id="SiteNav">
 <h3>Choose a Cheese</h3>
 <ul>
  <li><a href="">Beaufort</a></li>
  <li><a href="">Bleu d'Auvergne</a></li>
  <li><a href="">Brie de Meaux</a></li>
  <li><a href="">Brillat Saverin</a></li>
  <li><a href="">St Maure de Touraine</a></li>
  <li><a href="">Chabichou de Poitou</a></li>
  <li><a href="">Camembert</a></li>
  <li><a href="">Cantal Entre Deux</a></li>
  <li><a href="">Chaource</a></li>
  <li><a href="">Comte</a></li>
  <li><a href="">Crottin de Chavignol</a></li>
  <li><a href="">Emmenthal</a></li>
  <li><a href="">Epoisses</a></li>
  <li><a href="">Langres</a></li>
  <li><a href="">Mimolette</a></li>
  <li><a href="">Morbier</a></li>
  <li><a href="">Munster</a></li>
  <li><a href="">Picodon</a></li>
  <li><a href="">Pont l'Eveque</a></li>
  <li><a href="">Reblochon</a></li>
  <li><a href="">Rocamadour</a></li>
  <li><a href="">Roquefort</a></li>
  <li><a href="">St. Marcellin</a></li>
  <li><a href="">St Nectaire</a></li>
  <li><a href="">Tomme de Chevre</a></li>
 </ul>
</div>
<div id="MainText">
 <h2>Cheese: it's not just for the French anymore</h2>
 <p>Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod
tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud
exercitation ulliam corper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem veleum
iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel willum lunombro dolore eu
feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum
zzril delenit augue duis dolore te feugait nulla facilisi.</p>
 <p>Li Europan lingues es membres del sam familie. Lor separat existentie es un myth. Por scientie,
musica, sport etc., li tot Europa usa li sam vocabularium. Li lingues differe solmen in li grammatica, li
pronunciation e li plu commun vocabules. Omnicos directe al desirabilità de un nov lingua franca: on
refusa continuar payar custosi traductores. It solmen va esser necessi far uniform grammatica,
pronunciation e plu sommun paroles.</p>
```

```
</div>
</body>
</html>
```

This page displays as follows:

Ye Olde Cheese Shop

Choose a Cheese

- Beaufort
- Bleu d'Auvergne
- Brie de Meaux
- Brillat Savarin
- St Maure de Touraine
- Chabichou de Poitou
- Camembert
- Cantal Entre Deux
- Chaource
- Comte
- Crottin de Chavignol
- Emmenthal
- Epoisses
- Langres
- Mimolette
- Morbier
- Munster
- Picodon
- Pont l'Eveque
- Reblochon
- Rocamadour
- Roquefort
- St. Marcellin

Cheese: it's not just for the French anymore

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exercitation ullam corper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem veleum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel willum lunombro dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi.

Li Europan lingues es membres del sam familie. Lor separat existentie es un myth. Por scientie, musica, sport etc., li tot Europa usa li sam vocabularium. Li lingues differe solmen in li grammatica, li pronunciation e li plu commun vocabules. Omnicos directe al desirabilita de un nov lingua franca: on refusa continuar payar custosi traductores. It solmen va esser necessi far uniform grammatica, pronunciation e plu sommun paroles.

Now, let's take a closer look at the markup and style rules. We'll be going into much greater detail in future chapters, so don't worry if not everything makes sense. It is enough now to get a general sense of how stylesheets interact with XHTML markup.

The first thing to notice is the `<style>` element itself:

```
<style type="text/css">
...
</style>
```

The `<style>` element appears in the `<head>` element of an XHTML document. Its `type` attribute declares that the style language is CSS, and overrides the default stylesheet language used by the browser when rendering stylesheets. Actually, there are no other style languages in use by browsers today, except for Netscape Navigator 4.x's proprietary "JavaScript Stylesheets", which use the `type` attribute value `"text/javascript"`. However, as with many things in CSS, the `type` attribute looks forward to a time when browsers provide support for multiple style languages.

Contained within the `<style>` element are the style rules that define certain presentational aspects of the page. Each rule contains two main parts: a *selector* followed by a list of *declarations*. The selector defines which XHTML page element(s) the rule applies to, and the declarations define the presentational aspects that are to be applied to those elements.

The first rule in our sample page (seen below) selects the `<body>` element and declares that text within it should be presented with the `Verdana` typeface. If that font is not installed in the system, then `Arial` should be used; if this typeface is not available either, a `sans-serif` typeface is to be used.

```
body {
  font-family: Verdana, Arial, sans-serif;
  }
```

The next rule in our stylesheet declares that all `<a>` elements are to be displayed with bold, red text with no text decoration (underlines, overlines, etc.).

```
a {
  color: red;
  font-weight: bold;
  text-decoration: none;
  }
```

The final three rules in our stylesheet are quite different from the first two:

```
#Header {
  position: absolute;
```

```
 left: 25px;
 top: 10px;
 }
#MainText {
 position: absolute;
 left: 225px;
 top: 100px;
 margin-right: 25px;
 }
#SiteNav {
 position: absolute;
 left: 25px;
 top: 100px;
 width: 175px;
 }
```

Each of these three rules do not apply to all elements of any one type, such as all links in the preceding example, but instead apply to elements with a specific `id` attribute value. The `#` character is used to indicate this type of rule, followed by the `id` attribute value itself. So, the following rule:

```
#Header {
 position: absolute;
 left: 25px;
 top: 10px;
 }
```

applies to the following element:

```
<div id="Header">
 <h1>Ye Olde Cheese Shop</h1>
</div>
```

and instructs the browser on the exact location that the `<div>` element should appear on screen.

The example above is of course quite simple, and does not even really scratch the surface of what CSS is capable of. In subsequent chapters we'll explore how CSS gives you powerful typographic control over your pages, allowing you to specify not only the font, but the relative size, the line height, and numerous other presentational aspects of your text. You'll also learn how to select broad areas or certain specific elements of your document with a given rule, along with how to use CSS to define complex page layouts.

The Separation of Structure and Presentation

In this chapter I've given you a short history of the Web, told you how using HTML as a presentation language is injurious to your sites and the Web as a whole, and introduced you to the basics of using CSS for web page presentation. I want to leave you with perhaps the most important information so far: the reasons you as a web professional should want CSS. What will you get out of it?

An important principle that underlies all the arguments in favor of CSS is referred to as "The Separation of Structure and Presentation" or sometimes "The Separation of Content and Presentation".

This separation of markup (structure and content) and style rules (presentation) is valuable to the web professional in many ways, as you'll soon see.

Earlier I told you how HTML used as a presentation language results in several negative consequences, including decreased accessibility, degraded performance, and increased production work. Now I'll detail how "The Separation of Structure and Presentation", using sound structural HTML markup with CSS for presentation, results in the following benefits:

(1) Increased accessibility

(2) Improved performance

(3) Decreased production work

Accessibility

Accessibility is all about making your web page available to the maximum number of users and Internet devices. With sound structural markup, your HTML pages are accessible and understandable to the widest possible audience, including site visitors with older browsers, next year's visitors using new browsers that are yet to be released, blind visitors who rely on screen readers to access your site, and last but not least, indexing agents.

"What is sound structural markup?" you ask. Well, let's take a look at an example of *bad* markup:

```
<font size="5" face="Arial" color="green">My Page Title</font><br /><br />
```

In the above example, the `<font>` element has been used to give a page header a certain typeface, color, and size. Two `<br />` elements follow to give the text the proper bottom margin. This will look as desired in most major browsers today, which gives the false impression that all is well. In fact, by using the `<font>` element, which communicates no information about the text "My Page Title" other than presentational directions, you've rendered the text less intelligible to both old browsers, screen readers, and indexing agents.

On the other hand, the following markup communicates a great deal of information:

```
<h2>My Page Title</h2>
```

By using the `<h2>` element, you've instructed all devices that parse the HTML that "My Page Title" is a header. Screen readers can give special emphasis to the text; old, current, and future browsers can render it appropriately on screen (with or without further style rules); and indexing agents, such as the spider for search engine Google that crawls the Web to add pages to the Google database, can give extra weight to the header text in their search result algorithms, which leads to your pages appearing higher in the search results for the most relevant search terms.

"But you've removed the presentational cues, and now the text is no longer green, or displayed with the Arial typeface", you say. Adding the following style rule to the document solves this problem:

```
h2 {
  font-family: Arial;
  color: green;
  font-size: 1.4em;
  }
```

In addition, now that the rule has been declared, all `<h2>` elements will share the same presentation without the need to surround each one with extraneous markup. This leads us to another benefit of the "The Separation of Structure and Presentation".

Improved Performance

By providing one level of indirection, or abstraction, CSS embedded in the head of a document streamlines document markup, improving download times and speeding up page rendering. Instead of relying on markup to instruct browsers on how to display each separate instance of an element, CSS allows us to declare a style rule once and have that presentational cue apply to all such elements. Let's take the bloated HTML example from early in this chapter and see how much space we can save by applying CSS and the principle of the separation of presentation and structure:

```
<style type="text/css">
td {
  background: #FFF;
  font-family: Verdana, Arial, Helvetica, sans-serif;
  font-size: .6em;
  text-align: right;
  }
td.left {
  text-align: left;
  }
a {
  font-weight: bold;
  }
</style>

<table  border="0" cellpadding="2" cellspacing="2">
  <tr valign="top">
    <td width="33%" class="left">
      <a href="http://example.com">
        <nobr>
          Dow
        </nobr>
      </a>
    </td>
    <td width="33%">
      9698.30
    </td>
    <td width="33%">
      11.21
    </td>
  </tr>
  <tr valign="top">
```

```
      <td width="33%" class="left">
        <a href="http://example.com"><nobr>Nasdaq</nobr></a>
      </td>
      <td width="33%">
        1850.43
      </td>
      <td width="33%">
        -5.10
      </td>
    </tr>
    <tr valign="top">
      <td width="33%" class="left">
        <a href="http://example.com">
          <nobr>
            S&amp;P 500
          </nobr>
        </a>
      </td>
      <td width="33%">
        1092.50
      </td>
      <td width="33%">
        -1.94
      </td>
    </tr>
    <tr valign="bottom">
      <td colspan=3 align="center">
        Quotes delayed by 20 minutes.
      </td>
    </tr>
  </table>
```

I've removed all the `<font>` elements and `bgcolor` attributes from the table cells, and replaced those presentation directions with three style rules. In so doing, I've cut the size of the HTML markup down from 2456 characters to 954 characters, and that's even after adding in missing quotation marks around attribute values, which were missing in the original markup. Even after including the style rules in with the markup, I've still cut the size of the file by more than half to 1169 characters, and the look of the table remains virtually identical in all major browsers.

In more complex situations, even more file size savings can be achieved. For instance, advanced CSS rules allow us to group selectors, so that one rule can apply to multiple elements, like so:

```
h1, h2, h3, h4, h5, h6 {
  font-family: Arial;
  color: green;
  }
```

Furthermore, another level of indirection can be added by using *external stylesheets*, creating even greater download time reductions. The examples you've seen above have used *embedded stylesheets*, which are contained within the `<head>` element of the page to which they apply. Using external stylesheets allows you to link a stylesheet to multiple XHTML pages. This can significantly improve performance on a site, since the stylesheet needs only to be downloaded once per visitor. It is then stored in the visitor's browser cache, and subsequent page loads from the site by that visitor require only the download of the XHTML markup.

Smaller file sizes and cached external stylesheets not only mean a speedier site, which makes your visitors happy, but can also result in lowered hosting costs for you, as your site takes less bandwidth to serve.

In addition to bandwidth savings and the speed increases your site visitors will enjoy when you use well-structured markup and CSS, you as a web professional will have at your disposal a powerful style language that allows much greater control over the appearance of your pages than `<font>` and `<table>` elements could ever provide.

As if that wasn't enough, CSS and solid markup are the foundation for DHTML, with which you can add dynamic behaviors to your web documents. With DHTML, JavaScript is used to manipulate page elements and their style properties to create dynamic pages that can react to user input, animate page elements, and provide new and innovative interfaces to your site visitors. We won't be talking much about DHTML in this book, but the skills you'll learn here will set you well on the path to understanding how to build dynamic sites with DHTML.

Decreased Production Work

It may be hard to believe, but not only does the use of CSS and sound structural markup improve the experience of your site visitors and provide you with cost savings and a powerful style language, it actually makes your job easier as a web professional. By separating presentational directions from your HTML, especially when using external stylesheets, you make it easier to build and maintain sites. Your clean markup will be easier to develop initially, since the job of marking up the information in your HTML pages can be a discreet task, unfettered with concerns about color and typeface. Maintaining pages with clean HTML becomes a simple task also, saving you from the headache of searching through lines of bloated HTML for that one simple link you want to change.

Redesigning a site also becomes a much simpler task. When using an external stylesheet for a whole site, redesigning involves changing only that one document instead of editing each individual HTML page.

All of these improvements, which you gain with the use of CSS, result in cost savings that make your clients happier, and your pocketbook fatter.

Summary

CSS is an important part of the future of the Web. It is unfortunate that a style language was not available to the Web's early document authors, as it might have helped change the problematic route that HTML took, driven by author desire to control page presentation and fueled by short-sighted browser vendors eager to attract developers to their platform. But CSS is ready for the masses now, and provides a great improvement to the web professional in many areas.

In coming chapters, you'll get a detailed look at the ins and outs of developing pages with Cascading Style Sheets. You'll learn good markup practices, how to control typography, and how to use CSS to layout pages. When you've finished this book, you'll be prepared to develop the Web as it was intended to be developed, not only making your job easier and your clients happier, but also making the Web a better and more useful place.

Internet Scrapbook: Automating Web Browsing Tasks by Demonstration

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ABSTRACT

This paper describes a programming-by-demonstration system, called Internet Scrapbook, which allows users with little programming skill to automate repetitive browsing tasks. With the system, the user can create a personal page by clipping only the necessary portions from multiple Web pages. Once the personal page is created, the system updates it on behalf of the user by extracting the specified parts from the latest Web pages. The data extraction method in Scrapbook is based on the regularity in modifications of Web pages, i.e. that headings and positions of articles are rarely changed even though the articles themselves are modified. In the experiments to examine the accuracy of the data extraction algorithm, 96 percent of user-specified portions were correctly extracted.

KEYWORDS: World Wide Web, Web browsing, programming by demonstration, programming by example, end-user programming.

INTRODUCTION

WWW (World Wide Web) browsers, such as Netscape Navigator and Microsoft Internet Explorer, allow users to easily access Internet information sources. While the operation of these browsers is simple, users need to spend much time and care in the daily access to the Web information they desire, for the following reasons:

- The information that users need is usually distributed across several different pages. In cases where users need to obtain a weather forecast, cyber news and sports results from different pages, for example, they have to access all the necessary pages by repeatedly specifying URLs (Uniform Resource Locators) or by selecting them from bookmarks.

- Users often need to browse only a portion of a Web page. On a nationwide weather forecast page, for example, users probably want the forecast only for the area they are living in. Consequently, they are often required to search the page for the desired information either by eyes or by using the string search capability provided by the browser.

If users' target pages are frequently modified, it is a heavy burden for the users to keep up with the latest information by repeating these Web browsing operations.

To reduce the operational cost of the browsing tasks, we have developed a programming by demonstration (PBD) [3] system, called Internet Scrapbook (referred to simply as "Scrapbook" in this paper), that allows users with little programming skill to automate their daily browsing tasks. In Scrapbook, a user can demonstrate which portions of Web pages he/she is interested in by creating an example personal page, that is, by copying only the necessary data from multiple pages and pasting them onto a single personal page. Once the personal page is created, the system automatically updates it by extracting the user-specified portions from the latest Web pages. The user can thus browse only the necessary information on a single page and avoid repetitive access to multiple Web pages.

A major challenge here is how Scrapbook can extract specific portions from frequently modified Web pages in the demonstration-based (example-based) framework. The system has to find the correct portions on many types of Web pages, using only a small number of given examples (a single example, if possible). The data extraction method in Scrapbook is based on certain regularity observed in frequently modified Web pages, i.e. that article headings and positions in the Web pages are rarely changed. So, by using the heading and the position of an article specified in a user demonstration, the system finds the target portion in the latest Web page.

In the following sections, we first give an overview of Scrapbook. Next, we explain the basic idea for extracting specific portions from frequently modified Web pages and describe details of the PBD process in Scrapbook. Finally, we show experimental results and discuss related work.

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Web browser
Copy button
Update button
Internet Scrapbook
User selects and copies Web data
System updates

(a) User selection in Web browsers.
(b) Scrapbook page created by the user.
(c) Page updated by the system.

Figure 1: Overview of System usage.

INTERNET SCRAPBOOK

Overview

Internet Scrapbook is a programming-by-demonstration system to automate daily Web browsing tasks. One characteristic of Scrapbook is its ease of use due to its programming-by-demonstration facility.

The user's main task in Scrapbook is to demonstrate his/her desired information by using actual Web pages. Specifically, the user creates a personal Scrapbook page[1] by repeatedly selecting data in a Web browser (Figure 1a) and copying it to the Scrapbook page (Figure 1b). The selected data can be copied simply by clicking the Scrapbook's "Copy" button. Once the personal Scrapbook page is created, the user has only to click the "Update" button to browse the latest Web information. The system updates the Scrapbook page reflecting the modifications of the source Web pages (Figure 1c).

Figure 2 shows the programming-by-demonstration architecture in Scrapbook. Given a single example of a user selection in the Web browser, Scrapbook infers a matching pattern to identify the selected region in the source Web page. Unlike PBD systems for text editing and graphical editing tasks that allow users various operations, Scrapbook permits only two user operations performed in turn: the selection of Web data and the copying of the selected data. Therefore, it is not required to infer a program, which is a sequence of generalized user operation, by considering relationships among the operations. Scrapbook simply infers a matching pattern for each selected portion.

Using the generated patterns, the system updates the user's Scrapbook page. That is, it extracts portions that match the patterns from newly downloaded Web pages and reconstructs the Scrapbook page with the extracted data. However, a portion that *completely* matches the pattern cannot necessarily be found in the modified version of the Web page. In the case of no complete match, the system performs partial matching to find possible candidates for extraction and selects the most plausible one by applying heuristics.

User
User's choice
Web Browser
Extracted portion
All candidates of extraction
Extraction Engine
User selection in Web page
Heuristic-based Selector
Correct selection method
Interactive Learning Module
Matching Pattern Generator
Pattern
Candidate Generator
Scrapbook
Latest Web page
Web Site

Figure 2: System architecture.

Although the heuristics for selecting the user-desired portion are sophisticated enough, it is impossible to always select correct one in various types of Web pages. To recover from the failure, Scrapbook has an interactive learning framework that allows a user to revise the system's heuristics by choosing the correct extraction result from a candidate list provided by the system.

In addition to the PBD framework, another important design issue in Scrapbook is the data copy mechanism used when creating Scrapbook pages. Scrapbook is designed so that Web data can be copied directly from the most commonly used Web browsers, Netscape Navigator 3.0, Microsoft Internet Explorer 3.0 and their newer versions for Windows95/NT3.51, rather than forcing users to use a special browser only for Scrapbook. Since, however, this mechanism is not the main issue in this paper, we explain it in the appendix.

---

[1] Multiple Scrapbook pages can be created in Scrapbook.

Basic Idea for Extracting Specific Portions of Web Pages

The key to success for Scrapbook is to be able to correctly extract user's target portions from the latest versions of source Web pages. One of difficulties is in predicting the future modifications that will be done to the pages.

As we mentioned, Scrapbook generates a matching pattern at demonstration time and uses it to extract the user-desired portion from the future versions of the page. Therefore, it is required that patterns should be described using information that is expected to remain constant even after the page has been modified.

According to our observations, there is certain regularity in modifications to Web pages, and two kinds of information persist over these modifications: *a heading of an article* and *a position of an article*. In practice, we found four major types of information provided on Web pages. No matter which type is used, either the headings or the positions are preserved among updated versions of the page.

Type 1: Categorized articles.

Articles are often categorized by information providers into predefined clusters, and they are provided together with headings that explain categories and contents of these articles. In such cases, the headings are rarely changed. Figure 3a shows an example of this type of information provision. In the Web page of Figure 3a, the headings, "Football", "Soccer", and "Basketball", are preserved while the articles (indices) following these headings keep changing. This is not only true for news articles, columns and periodical reports also have headings to make it easy for readers to find their target information. In a sense, even company names in stock quote pages and city names in weather pages can be regarded as unchanged headings.

Type 2: Top-news articles.

In some pages, important articles are treated as top news, regardless of their categories. Although the heading of the top news is replaced every day, its position remains unchanged. As shown in Figure 3a, the heading of the top news, "Tiger in Japan", will be changed, but the position will always be the same. Also, when the article category is obvious in a Web browsing context, it is likely to be provided without using permanent headings. However, positions are kept in many cases.

Type 3: Chronological ordering (1).

Articles are sometimes chronologically ordered, and the newest one appears together with the older ones on a single page. The newest articles are usually added to the top as shown in Figure 3b. In this case, the position of the newest one is always the same. In addition, in some cases, there is an unchanged heading in the previous line of the newest information, e.g. "Article History" in Figure 3b.

Type 4: Chronological ordering (2).

In a few cases, the newest articles are added to the bottom as shown in Figure 3c. In this type of Web page, neither the heading of the target (newest) article nor its position relevant to the top of the document remains constant. Even in this case, however, the position relative to the end of the document is still preserved. In Figure 3c, the newest information is always located just before the last horizontal rule.

Sports News
Nov. 9, 1997
Football
Soccer
Basketball
Tiger in Japan
Great Tiger!
He completely fascinated Japanese fans.
image1
Full Story
Type2
Top Stories
Nov. 9, 1997
Tiger in Japan
Atsushi get 4 goals
Nov. 8, 1997
World cup final
NBA play-off
Nov. 7, 1997
John moves to Texas
Football
MU won 30-15
Soccer
Atsushi got 4 goals
image2
SF lost important game
Basketball
Chicago qualifies for play-off
Email to Web Master
Type1
Sports News
Nov. 10, 1997
Soccer
Basketball
Football
Kicks drops from top
Kicks draws and drops to 3rd place
image
Full Story
Top Stories
Nov. 10, 1997
Kicks drops from top
Nov. 9, 1997
Tiger in Japan
Atsushi get 4 goals
Nov. 8, 1997
World cup final
NBA play-off
Soccer
Milan 2-2 PSG
Toyota cup on Dec. 2
Basketball
Scoreboard of Sunday night game
Football
Tom will retire?
image
Superball jinx
Email to Web Master

(a) Type 1 and 2.

Article History
98.4.14
....
Newest information
98.4.13
....
98.4.12
....
Back to Home
Article History
98.4.15
....
Newest information
98.4.14
....
98.4.13
....
Back to Home

(b) Type 3

Article History
98.4.13
....
Newest information
98.4.14
....
Back to Home
Article History
98.4.13
....
98.4.14
....
Newest information
98.4.15
....
Back to Home

(c) Type 4

Figure 3: Four ways of providing information on Web pages.

User selection
Sports News
Nov. 9, 1997
Tiger in Japan
Great Tiger! He completely fascinated Japanese fans.
image1
Full Story
Football
Soccer
Basketball
Top Stories
Nov. 9, 1997
Tiger in Japan
Atsushi got 4 goals
Nov. 8, 1997
World cup final
NBA play-off
Nov. 7, 1997
John moves to Texas
Football
MU won 30-15
Soccer
Atsushi got 4 goals
SF lost important game
image2
Basketball
Chicago qualifies for play-off
Email to Web Master
<BODY>
<TABLE><TR>
<TD > Nov. 9, 1997
</TABLE >
<HR>
<TABLE><TR>
<TD> <H2>Top Stories</H2>
<TD>
<H3>Football</H3>
<UL>
<LI><A ...>MU won 30-15 </A>
</UL>
<H3>Soccer</H3>
<IMG SRC="image2.gif" ALIGN="right">
<UL>
<LI><A ...>Atsushi got 4 goals</A>
<LI><A ...>SF lost important game</A>
</UL>
<H3>Basketball</H3>
</TABLE>
</BODY>
Starting position of user selection
End position of user selection
Tag pattern
Heading pattern (PrevLineHeading)
Heading pattern (FirstLineHeading)
Heading pattern (NextLineHeading)
<TABLE nth=2 nthFromEnd=1>
<TR nth=1 nthFromEnd=1>
<TD nth=2 nthFromEnd=1>
MU won 30-15
<H3 nth=2 nthFromEnd=2>
Soccer
Start
User selection
End
<H3 nth=3 nthFromEnd=1 nthFromSelStart=1>
Basketball
</TABLE nth=2 nthFromEnd=1>
Demonstration Phase
Update Phase
Sports News
Nov. 10, 1997
P1
P2
P3
P4
P5
Kicks drops from top
Kicks draws and drops to 3rd place
image
Full Story
Soccer
Basketball
Football
Top Stories
Nov. 10, 1997
Kicks drops from top
Nov. 9, 1997
Tiger in Japan
Atsushi got 4 goals
Nov. 8, 1997
World cup final
NBA play-off
Soccer
Milan 2-2 PSG
Toyota cup on Dec. 2
Basketball
Scoreboard of Sunday night game
Football
Tom will retire?
Superball jinx
image
Email to Web Master
P1-P5
P1-P4
P1-P2
P3-P5
P3-P4
P4-P5
Soccer
Milan 2-2 PSG
Toyota cup on Dec. 2
Scoreboard of Sunday night game
Basketball
Scoreboard of Sunday night game
P3-P4
Soccer
Milan 2-2 PSG
Toyota cup on Dec. 2

(a) Original Web page and its source HTML.

(b) Matching pattern.

(c) Modified Web page.

(d) Candidate portions.

(e) Extracted portion.

Figure 4: Data extraction from a Web page.

Based on such regularity, the system generates a matching pattern that consists of *both* the heading and the position of the user-specified article, although only one of them might be preserved in future revisions of the Web page. The system does not try to anticipate the type of information on a Web page and infer a precise description for explaining a user-intended region at demonstration time. This anticipation is difficult before the page has been actually modified.

The user intended portion is inferred when updating the Scrapbook page. In order to extract a user's target from the latest page, the system first tries to find a portion that completely matches the pattern. Since, however, such a portion cannot necessarily be found, the system determines the extraction result by applying heuristics. Specifically, it creates a list of possible candidates for extraction by partial matches and chooses the most plausible one by considering the type of information on the Web page.

Figure 4 shows the process for extracting Web data. In the following sections, we explain it in detail.

Generating Matching Patterns

Every time the user selects and copies Web data from a Web browser, the system generates a matching pattern used for identifying the selected region in a source Web page. As we mentioned in the previous subsection, the pattern contains descriptions of both the article headings and positions. These descriptions are called *a heading pattern* and *a tag pattern*, respectively.

Heading Pattern: The heading pattern consists of text that the system regards as the heading of the user-selected article (data). Actually, Scrapbook simply infers that headings are likely to be in the lines *previous* to, *first* in and *following* the user selection. For example, if the user selects the data as shown in Figure 4a, the system generates the heading pattern shown by the bold text in Figure 4b. This heading pattern gives an abstract interpretation that a user selects the region from “Soccer” (the first line of the selection), whose previous line is “MU won 30-15”, to just before “Basketball” (the text following the selection).

This inference is based on some characteristic of the regions selected by users. Users usually select the whole article from the beginning to the end. They do not start in the middle of the article. Since, as we mentioned above, many articles in Web pages are preceded by headings that explain the contents or the category of each article, there is a high probability that the first line of the user selection is a heading[2].

The line previous to the selection may become a heading because of slight variations in the selected region. Since users sometimes select articles without including the heading, the previous line of the user-selected region is also included in a matching pattern to identify the starting position.

In many cases, the heading of the next article appears in the next line after the user-selected article. Since it would be useful for determining the end position, the system includes the text in that line.

For the sake of simplicity, we call the parts of the heading pattern that are derived from the previous, first and next lines of the user-selected region, *PrevLineHeading*, *FirstLineHeading* and *NextLineHeading*, respectively.

Tag Pattern: The tag pattern represents a position of selected data in a Web page. It consists of HTML elements each of which has an *nth* parameter and an *nthFromEnd* parameter. The *nth* parameter represents the appearance order of the HTML element counted from the document top, and the *nthFromEnd* parameter is the order from the document end. The *nthFromEnd* parameter is useful for extracting data from pages of Type 4 (the newest information is added to the bottom). Figure 4b shows an example of a tag pattern. The *nth* parameters of this tag pattern indicates a region from the second H3 to the third H3 embodied in the second cell (the second TD in the first TR) of the second TABLE.

To identify the starting position, the tag pattern contains all the HTML elements that mark up the text at the starting position of the user selection. Only layout elements that affect the page layout, such as TABLE, TR, TD, UL, LI, H1-H6, P and HR, are included in the pattern, while font style elements, such as FONT and B, are not considered. Since the tag pattern has the nested structure of the HTML elements, the *nth* and the *nthFromEnd* parameters are hierarchically counted from their parent elements.

To identify the ending position, Scrapbook uses HTML elements that affect the NextLineHeading (the heading of the next article after the user-selected article). In addition to the *nth* and the *nthFromEnd* parameters, these elements have the *nthFromSelStart* parameters that represent the position relative to the starting position of the user selection, such as the first appearance of an H3 element after the starting position. It is set to the number of elements counted from the starting position.

Note that the system ignores the markup structure within a selected region. This is because the structure, e.g. the number of list items and line breaks, is likely to be changed within the region and might cause undesired data extraction during an update phase.

Data Extraction from Web Pages

Scrapbook extracts the user’s target portions from the latest Web pages by using a matching pattern described by the headings and positions of a user-specified article. However, there is no guarantee that both the headings and the positions remain unchanged, and the pattern might not completely match any portion of the page. For example, if the Web page in Figure 4a is modified to Figure 4c, the pattern in Figure 4b does not completely match any portion of the page because the position of the “Soccer” section moved up.

To deal with various modifications of Web pages, the data extraction process consists of two steps: (1) finding candidate portions of the extraction result by partial matching, and (2) choosing the correct one among a number of possible candidates by applying heuristics.

Generating Candidate Portions by Partial Matching: Scrapbook finds starting positions and ending positions of candidates separately and generates the candidate regions from all combinations of the starting positions and the ending positions found.

The starting positions of the candidates are listed by matching any of the following parts of the pattern:

- *FirstLineHeading* (heading pattern).
- *PrevLineHeading* (heading pattern).
- HTML elements with *nth* parameters (tag pattern).
- HTML elements with *nthFromEnd* parameters (tag pattern).

The end positions are found by matching with one of the following:

- *NextLineHeading* (heading pattern).
- HTML elements with *nth* parameters (tag pattern).
- HTML elements with *nthFromEnd* parameters (tag pattern).
- HTML elements with *nthFromSelStart* parameters (tag pattern).

---

[2] The system might be able to find headings more precisely if it relied on H1-H6 elements. Since, however, headings are not necessarily tagged by H1-H6 elements (instead FONT and B are often used), we currently employ the simple method of relying on the selected region.

For example, by applying the matching pattern in Figure 4b to the modified Web page in Figure 4c, three starting positions, *P1*, *P3* and *P4,* are listed. *P1* and *P3* are found by matching with the FirstLineHeading "Soccer". *P4* where the soccer indices were originally located is found from the *nth* parameter of the tag pattern. *P4* also matches the *nthFromEnd* parameter.

Also, three ending positions, *P2*, *P4* and *P5,* are found. *P2* is listed by the *nthFromSelStart* parameter because it is in the position where the first H3 element exists (counted from the starting position *P1*). *P4* matches the NextLineHeading "Basketball" and the *nthFromSelStart* parameter, and *P5* matches the *nth* and the *nthFromEnd* parameters.

By using all possible combinations of the starting positions and ending positions, the system generates a total of six candidate portions, as shown in Figure 4d, *P1-P2*, *P1-P4*, *P1-P5*, *P3-P4*, *P3-P5* and *P4-P5*.

If no candidate pair can be found, the system displays a message to tell the user that the extraction failed. In this case, as shown in Figure 5, a hyperlink to the source Web page is inserted so that users can immediately access it.

Update Failed

Scrapbook couldn't find the portion,
you had specified, in the latest
http://www.SportsToday.com/index.html

ホームページスクラップブック(Ver1.0)
ファイル(F) 編集(E) 表示(V) 設定(O) スクラップ(S) ブラウザビュー(B) ヘルプ(H)
ご利用にあたって
基本操作について
ページトレイ
ピースフォルダ
わしのスクラップブック
天気
Cyber Weather
Cyber Weather
(6701)N E C
Watch
その他
BUZZER BEAT
サーチエンジン
Yahoo! JAPAN
Yahoo!
AltaVista Sear
WWWサーバ検
Tech
High-Tech Sh
PC WEEK ONL
ナイバーニュー
産業・流通
TechWire Tec
TechWeb
新しいページ
Weather Forec
News
前に戻る
次へ進む
表示中止
最新表示
Weather Forecast
City
Weather
Pos.
Temp.
Tokyo
50
12
Sports Today
Lottery Results
NUMBERS
Type
STRAIGHT
ページが表示されました。
Hyperlink to a source Web page

Figure 5: Message for failure of data extraction.

Choosing One Candidate using Heuristics:

Scrapbook chooses one portion from the generated candidates, using a set of sophisticated heuristics. Basically, the system prefers portions identified by a heading pattern to those found by a tag pattern. This is because the headings are expected to reflect the user intent in the selection and explain the contents of articles more clearly than the article position. In a sense, Scrapbook assumes information is provided as categorized articles (type 1) by default.

In the example in Figure 4, the system chooses the region *P3-P4*, where both the starting position and the end position were found by the heading patterns "Soccer" and "Basketball". Although the region *P1-P4* is also identified by the heading pattern, *P3-P4* is consequently chosen because the structure of HTML elements that markup *P3* also match that of the tag pattern.

In the case of top-news articles (type 2), a portion found by tag patterns is naturally chosen as the extraction result because headings of top news articles keep changing and no portion is found by a heading pattern.

However, when the system sees Web pages providing information of types 3 and 4, portions found by a tag pattern are preferred even if some other portions are found using a heading pattern. The types of information are inferred based on the difference between the data extracted by the heading pattern and the data before the update.

Let us consider the type 3 case where the newest information is added to the top. If a user selects the data intending to obtain the news with the latest date as shown in Figure 6a, the generated heading pattern contains a FirstLineHeading "98.4.14" and a NextLineHeading "98.4.13". Since these headings remain in the page even after the news on "98.4.15" has been added, the same data will be extracted using the heading pattern (Figure 6b). Whenever the heading pattern extracts exactly the same data as before the update, the system infers that the page type is of type 3 and it selects the region found by the *nth* parameters of a tag pattern as the update result. Thus, the target portion (the latest news for "98.4.15") can be extracted.

Next, consider the type 4 case where the newest information is added to the tail. If a user selects the data as shown in Figure 7a, the heading pattern contains a FirstLineHeading "98.4.14" and a NextLineHeading "Back to Home". This heading pattern produces the candidate portion containing both the old news on "98.4.14" and the latest news on "98.4.15" (Figure 7b). If the heading pattern extracts both the old information and the new information following the old one, the system infers that the page is of type 4. To extract only the newest data, the system gives priority to a candidate found by the *nthFromEnd* parameters of a tag pattern.

Article History
98.4.14
....
User selection
98.4.13
....
98.4.12
....
Back to Home
Article History
98.4.15
....
Portion by *nth* of tag pattern
98.4.14
....
Portion by heading pattern
98.4.13
....
Back to Home

(a) (b)

Figure 6: Data extraction from a type 3 page.

Article History
98.4.13
....
User selection
98.4.14
....
Back to Home
Article History
98.4.13
....
98.4.14
....
Portion by heading pattern
98.4.15
....
Portion by *nthFromEnd* of tag pattern
Back to Home

(a) (b)

Figure 7: Data extraction from a type 4 page.

Interactive Learning

The heuristics in Scrapbook are sophisticated enough to extract appropriate portions from various types of Web pages. However, the system cannot always update the scrapbook page as the user desired. Consider a case where the page in Figure 4c is modified to that in Figure 8, that is, a "Golf" section is inserted between "Soccer" and "Basketball". Using the matching pattern in Figure 4b, the system extracts the region from "Soccer" (FirstLineHeading) to "Basketball" (NextLineHeading), which contains both the soccer and golf sections. This would be inappropriate if the user wanted only the "Soccer" section.

To recover from such failures, Scrapbook has an interactive learning framework. When the result of an update is incorrect, a user can request the system to show a list of all extraction candidates and then select the correct one manually (Figure 9). Selecting one candidate in the dialog means giving a second example of his/her desired portion of the Web page. The candidates, shown to the user, are the ones generated by the partial matching described in the previous subsection.

Through this interaction, the system learns the correct priority in choosing candidates for extraction. Consider the case where the user chooses the candidate containing only the soccer indices, as shown in Figure 9, whose end position is identified by the tag pattern "the first H3 after the starting position". In the next update, the system will consequently prefer the region whose end position is determined by using the tag pattern, instead of the usually favored heading pattern.

Sports News
Nov. 11, 1997
NZ rugby won 4 in a row
image
NZ qualifies for final round
Full Story
Soccer
Golf
Basketball
Football
Other Sports
Top Stories
Nov. 11, 1997
NZ rugby won 4 in a row
Nov. 10, 1997
Kicks drops from top
Nov. 9, 1997
Tiger in Japan
Atsushi get 4 goals
Soccer
Canu recovers from heart disease
Golf
Nick -5, Ted -3
Basketball
Seattle still has a chance
image
Portion extracted by system's default infernce
Email to Web Master

Figure 8: Modifications to Web page that cause inference problems.

Revision Dialog
Select one correct update result
Current result
Candidate 1
Candidate 2
Soccer
Canu regains from heart disease
OK
Cancel
Help

Figure 9: Dialog to revise update results.

EXPERIMENTS

We conducted two experiments in order to evaluate the accuracy of the data extraction method in Scrapbook. In these experiments, however, we excluded Web sites where the newest information is provided on a newly created Web page with a new URL (Figure 10). Since the system knows only the original URL at demonstration time, it is unable to access the newest information if the URL changes.

Click date for which you wish to see information.
98.11.14
98.11.13
98.11.12
98.11.11
98.11.10
......
981114.html
981113.html
981112.html
A page where a user selected data in a demonstration

Figure 10: A Web site where a URL for the latest page changes is not handled by our system.

Experiment on Pages from Yahoo! Categories

We first created a Scrapbook page by selecting 430 portions from 193 Web pages and updated it seven days later. The 193 pages were randomly chosen from categories in Yahoo! [17] and Yahoo! Japan [18], which includes news, sports, magazines, stocks, weather, etc. We selected all sections of these pages, which might be selected by users.

Table 1 shows the results. The system was able to properly update 88.4% of the selected portions without using interactive learning. With learning, another 8.1% could be properly updated. However, the system could not extract correct portions for the remaining 3.5%.

Table 1: Experimental result on pages selected from Yahoo! and Yahoo! Japan.

	Without interactive learning	With interactive learning
Accuracy	88.4% (380/430)	96.5% (415/430) *8.1% revised*

Experiment with Subjects

In a second experiment, we had 18 subjects create their own Scrapbook pages by selecting portions of their favorite Web pages, update the Scrapbook pages for two weeks, and revise the update results whenever the results were inappropriate.

In this experiment, 155 portions were selected and copied to Scrapbook pages by all subjects. They were selected mainly from news sites (any kinds of news, such as general, weather, sports, technical news, etc.), and some of them were selected from company home pages, a music CD sales ranking page, novels written in a personal home page. None of the subjects selected the portions starting in the middle of sections.

During the experimental period, a total of 887 updates were made. As shown in Table 2, 92.1% of the updates were made as the subjects desired without the need for interactive learning, while another 3.3% were made by using the learning in the revision phase. 132 out of the 155 selected portions did not need any revisions at all. In six portions, no correct results were obtained.

According to our observation and the subjects' own views, most of the subjects could easily determine whether the update results were appropriate without displaying the whole source of the Web pages for comparison.

Table 2: Table 2: Experimental result with 18 subjects.

	Without interactive learning	With interactive learning
Accuracy	92.1% (817/887)	95.4% (846/887) *3.3% revised*

DISCUSSION

The experimental results show that the headings and positions of articles are very useful for finding the specific portions of Web pages. Although the system could not properly update 4% of the selected portions, many of them were trivial failures, such as extracting one line more than expected. We believe that our data extraction method can be of practical use.

We speculate that there are two reasons that the article headings and positions are preserved. First, changing the structure of Web pages is a heavy burden for information providers and, furthermore, this is costly. Second, Web sites must ensure the readability of their Web pages. If the document structure is changed often, readers cannot easily find their target information.

The robustness of the data extraction method against the various ways of modifying Web pages is supported mainly by the partial matching process for generating candidates of the extraction. The partial matching allows the system to generate a matching pattern without precisely predicting the future modifications of a Web page, and to find some candidates for extraction as long as the Web page keeps either the same heading or position of the user-specified article. Even when the system is unable to select the right one from the candidates, the user can correct the extraction result by using the interactive learning mechanism.

Scrapbook fails to extract user's target portion, if partial matching cannot find any candidate portions in the latest Web page, or the candidate list generated by the partial matching does not contain the user-desired portion.

Finding no candidate portions means that neither headings nor positions of the article, selected in the user demonstration, are preserved. Typically, such cases occur when Web pages are totally rewritten.

A typical case of no user-desired portion is observed in schedule-result pages where the schedules are replaced with the results one by one (Figure 11). Since both the heading and the position of the newest result (target information) keep changing, the system can never extract the portion that the user needs.

Schedule & Result
97.11.29
Schedule: Iwata - Nagoya
97.11.22
Schedule: Kashima - Osaka
97.11.15
Result: Iwata 3-0 Kawasaki
User selection
Back to Home
Schedule & Result
97.11.29
Schedule: Iwata - Nagoya
User's next target
97.11.22
Result: Kashima 1-2 Osaka
97.11.15
Result: Iwata 3-0 Kawasaki
System extraction
Back to Home

(a) (b)

Figure 11: Schedule-Result page.

The interactive learning framework of Scrapbook allows a user to revise the system's inference for extracting Web data by giving the second example of his/her desired portion. However, the choices for the second example are limited to the ones generated by the system. Another possibility is to allow users to freely select the second example in the latest Web page. In this method, however, it is not guaranteed that the given new example can indicate the proper way for inference. The appropriate Web data might still not be extracted in the next update of the Scrapbook page. In order to avoid this problem, Scrapbook permits limited choices. A candidate list generated by the system shows the data extraction capability of Scrapbook. Since the candidate portions in the list could surely be extracted after the system learns the correct heuristics, the user never gives useless examples.

A critical issue remaining concerns the copyrights of source Web pages. To protect copyrights, personal pages created using Scrapbook should never be republished. Currently, Scrapbook relies only on the user's sense of responsibility. This problem might be settled by related research, such as Transcopyright [13], which provides a framework for making legal arrangements for reusing portions of network resources.

RELATED WORK

Many attempts have been made to reduce the operational costs for Web access. One of them is an auto-pilot system, such as WebClip [16], which automatically downloads Web pages whose URLs have been specified by users. Although the users do not have to repeatedly specify the URLs, they are still required to search the downloaded page for their necessary information, because the auto-pilot systems do not extract portions of Web pages. Although Nabbit [9] allows users to create pages by clipping portions of Web pages, it does not have the capability of updating the created pages.

My Yahoo! [11], Pointcast Network [14], and SIFT [19] are news clipping services which provide information filtered by topics and keywords that the user has specified in advance. The notable difference among the clipping services and Scrapbook is their information sources. While the clipping services limit the users' choice of topics and information providers, Scrapbook can gather the user-desired information from the whole World Wide Web.

Crayon [2] is also a personalized news service. Unlike other personalized services, it allows users to specify free news Web pages as the information sources and it clips news indices from the specified pages. Crayon is similar to Scrapbook in terms of clipping the parts of Web pages and using Web pages as information sources. However, the pages the users can specify are still limited to the ones where Crayon has defined the clipping rule.

Scrapbook is a programming-by-demonstration (PBD) system, and many PBD systems, such as Eager [4], SmallStar [5], Chimera [7], Peridot [12] and DemoOffice [15], have been developed because of the advantage of easy-to-use interfaces. Among these PBD systems, Turquoise [10] is the most similar to Scrapbook. It is a PBD system that allows users to create dynamic Web pages by demonstration. In Turquoise, however, users are required to directly revise scripts and matching patterns by themselves when the system's inference is incorrect. In contrast, Scrapbook users can correct the inference simply by choosing a correct candidate from a list of candidates generated by the system.

There have been many software agents that offer different types of assistance from Scrapbook. While Scrapbook is given explicit demonstrations from the users, these agents are always observing user's actions in Web browsers and making inferences from the observations. WBI [1] is an agent that watches user actions and personalizes global Web pages by inserting personal information, such as shortcut links for common paths, into them. WebWatcher [6] and Letizia [8] suggest appropriate hyperlinks to explore next, based on the past selection of hyperlinks by the users.

CONCLUSION AND FUTURE DIRECTIONS

This paper describes a Web browsing system with a demonstrational user interface, called Internet Scrapbook, which enables users with little programming skill to automate their daily Web accesses. One of the main characteristics of Scrapbook is its ease of use. Users have only to perform data selection and copy operations to create their personal pages and click an "Update" button to update the pages. Experimental results showed that our heuristic-based method to extract specific portions of Web pages can operate well for many pages on the Web and that it is of practical use.

In the future, we will improve the data extraction methods. As mentioned in the Discussion section, our current method cannot extract the newest information from schedule-result pages (Figure 11). We believe that this problem could be solved by finding the differences between old pages and new pages. Also, Scrapbook has a problem when the URL for the latest information changes (Figure 10). However, it would be possible to find the newly created page if URLs are named by using date information and if some regularity in the naming exists. We are planning to investigate this issue further.

Scrapbook currently uses at most two examples of user selection to update a Scrapbook page: one is given at the demonstration phase to first create a personal page and the other is given at the revision phase, if necessary, to learn the correct update method. Using more than two examples might also enhance the capability of the data extraction.

For PBD systems that infer user intent, it is important to give users immediate feedback in terms of the system interpretations for user demonstrations. Scrapbook should provide abstract explanations of the system interpretation.

Another research direction is to incorporate push technology into Scrapbook so that information extracted by Scrapbook could be sent to a push-style viewer, such as the Pointcast screen saver. This configuration would enable users to browse arbitrary information on the Web with minimum operational cost. We are currently developing the functionality necessary for push-style information browsing.

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INTERNET ARCHIVE
WaybackMachine BETA
http://www.lycos.com/money/
Go
144 captures
10 Dec 97 - 26 Mar 08
Nov
Dec
JAN
11
1996
1997
1999
Close
Help
LYCOS
TOP 5%
CityGuide
PeopleFind
StockFind
RoadMaps
Yellow Pages
Shopping
Free Real Time Stock Quotes
Click here to visit site
Lycos Home
Autos
Business
Careers
Computers
Education
Entertainment
Fashion
Games
Government
Health
Home/Garden
Internet
Kids
Money
News
People
Real Estate
Shopping
Space/Sci-Fi
Sports
Tech Toys
Travel
Investments
Resources
DLJdirect Online Investing
Bet on Stocks & Win$$! Click Now

Thursday, December 11, 1997

Money

FEATURED COMMUNITY GUIDE

- Make a List, Check it Twice

You made the list, but is the shopping done? The jolly, fat man is no help here. Christmas is closing in. Get to work!

COMMUNITY GUIDES

- On the Market

Selling a house is as big a step as buying

- The Many Forms of Taxes

There's a form for every taxable occasion

- Working in the Black

Do accountants make the world turn?

- Before You Give Them Your Money

Shop for the right bank

- Give Yourself Some Credit

Credit services can help you out of a bind

RESOURCES

MONEY NEWS

The latest headlines from our news service

LYCOS PICKS

Guide to Investing on the Web

Learning to Cope with College Costs

Browse the Top 10 Investment Sites

Your Stocks, Warm 'N' Fresh When You Get Personalized

Search

Help

Feedback

Search For Missing Kids

- TOP 5% Money Sites

Find it all from investing to taxes

- Investor's Resource Guide

Thousands of links to financial advice and more

Search the Web for:

Go Get It

Money Talks:
Chat About Investing

Stock Research Tips

SERVICES

Save Big! Free Shipping from Barnes and Noble for the Holidays

StockFind Free Quotes

Companies Online Listings

Buy Books About Money

New Search . TopNews . TOP 5% . City Guide . StockFind

PeopleFind . Companies Online . Road Maps . Software . About Lycos . Help

Add Your Site to Lycos . Advertise with Lycos . Jobs4You . GTE Yellow Pages . New2Net

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4 Apr 97 - 29 Apr 99

OCT Dec FEB
11
1996 1997 1998

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Mutual Funds	Mkt at a Glance	News by Industry
IPO Corner	My Portfolio	News Search
Global Stock Games	$20 Trades	Zacks

Trades as of: **Dec 10, 1997**

As of: **Dec 11, 1997** 04:48 AM

DJIA	7978.79	☐
NYSE	507.70	☐
NASDAQ	1596.61	☐
Russell 2000	432.81	☐
S&P 500	969 25/32	☐
AMEX MMI	836.57	☐

Enter ○ **Stock Symbols** (eg. IBM, T, GM) or ○ **Company Name**

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Stock Markets and Latest Corporate Earnings Announcements:

PRN 12/10 19:46 NYSE CLOSING, WEDNESDAY, DECEMBER 10

PRN 12/10 18:19 Photronics Reports Record Fourth Quarter Results; Record Fiscal 1997 Sales Increase 23% and Earnings Grow 22% O

PRN 12/10 18:00 Admor Memory Reports Unaudited Results for the Year Ended June 30, 1997 and the Quarter Ended September 30, 199

PRN 12/10 17:58 CPTV Announces Fiscal Year-End Results; Company Sets Record Date for Initial Distribution

PRN 12/10 17:47 GST Telecommunications Reports Record Revenues of $31.0 Million for the Quarter and $106.0 Million for the Year

PRN 12/10 17:30 Secom General Reports Higher Fiscal Fourth Quarter and Year-End Sales And Profits; Expects Operating Loss for C

PRN 12/10 17:16 American Stock Exchange Daily Report

PRN 12/10 17:14 CFM Technologies Announces Fiscal 1997 Results Fiscal 1997 Earnings Per Share Increase 31%

PRN 12/10 16:45 First Investors Reports Second Quarter Results

PRN 12/10 16:44 E.W. Scripps Co. November Revenues Up 7.5 Percent

more headlines

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Quotes and News

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</HEAD>
<!--start header-->
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 ></script>
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var lastDate = 1325375999999;
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var wbCurrentUrl = "http://www.stockfind.newsalert.com/";

var curYear = -1;
var curMonth = -1;
var yearCount = 16;
var firstYear = 1996;
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var yearImgWidth = 25;
var monthImgWidth = 2;
var trackerVal = "none";
var displayDay = "11";
var displayMonth = "Dec";
var displayYear = "1997";
var prettyMonths =
 ["Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"];

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        if(val == trackerVal) {
                return;
        }
        if(val == "inline") {
                document.getElementById("displayYearEl").style.color = "#ec008c";
                document.getElementById("displayMonthEl").style.color = "#ec008c";
                document.getElementById("displayDayEl").style.color = "#ec008c";
        } else {
                document.getElementById("displayYearEl").innerHTML = displayYear;
                document.getElementById("displayYearEl").style.color = "#ff0";
                document.getElementById("displayMonthEl").innerHTML = displayMonth;
                document.getElementById("displayMonthEl").style.color = "#ff0";
                document.getElementById("displayDayEl").innerHTML = displayDay;
                document.getElementById("displayDayEl").style.color = "#ff0";
        }
   document.getElementById("wbMouseTrackYearImg").style.display = val;
   document.getElementById("wbMouseTrackMonthImg").style.display = val;
   trackerVal = val;
}
function getElementX2(obj) {
        var thing = jQuery(obj);
        if((thing == undefined)
                        || (typeof thing == "undefined")
                        || (typeof thing.offset == "undefined")) {
                return getElementX(obj);
        }
        return Math.round(thing.offset().left);
}
function trackMouseMove(event,element) {

   var eventX = getEventX(event);
   var elementX = getElementX2(element);
   var xOff = eventX - elementX;
        if(xOff < 0) {
                xOff = 0;
        } else if(xOff > imgWidth) {
                xOff = imgWidth;
        }
   var monthOff = xOff % yearImgWidth;

   var year = Math.floor(xOff / yearImgWidth);
        var yearStart = year * yearImgWidth;
   var monthOfYear = Math.floor(monthOff / monthImgWidth);
   if(monthOfYear > 11) {
       monthOfYear = 11;
   }
   // 1 extra border pixel at the left edge of the year:
   var month = (year * 12) + monthOfYear;
   var day = 1;
        if(monthOff % 2 == 1) {
                day = 15;
        }
        var dateString =
                zeroPad(year + firstYear) +
                zeroPad(monthOfYear+1,2) +
                zeroPad(day,2) + "000000";

        var monthString = prettyMonths[monthOfYear];
        document.getElementById("displayYearEl").innerHTML = year + 1996;
        document.getElementById("displayMonthEl").innerHTML = monthString;
        // looks too jarring when it changes..
        //document.getElementById("displayDayEl").innerHTML = zeroPad(day,2);

        var url = wbPrefix + dateString + '/' +  wbCurrentUrl;
        document.getElementById('wm-graph-anchor').href = url;

   //document.getElementById("wmtbURL").value="evX("+eventX+") elX("+elementX+") xO("+xOff+") y("+year+") m("+month+") monthOff("+monthOff+") DS("+dateString+") Moy("+monthOfYear+") ms("+monthString+")";
   if(curYear != year) {
       var yrOff = year * yearImgWidth;
       document.getElementById("wbMouseTrackYearImg").style.left = yrOff + "px";
       curYear = year;
   }
   if(curMonth != month) {
       var mtOff = year + (month * monthImgWidth) + 1;
       document.getElementById("wbMouseTrackMonthImg").style.left = mtOff + "px";
       curMonth = month;
   }
}
//]]>
</script>

<style type="text/css">body{margin-top:0!important;padding-top:0!important;min-width:800px!important;}#wm-ipp a:hover{text-decoration:underline!important;}</style>
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<div id="wm-ipp-inside" style="position:fixed;padding:0!important;margin:0!important;width:97%;min-width:780px;border:5px solid #000;border-top:none;background-image:url(http://staticweb.archive.org/images/toolbar/wm_tb_bk_trns.png);text-align:center;-moz-box-shadow:1px 1px 3px #333;-webkit-box-shadow:1px 1px 3px #333;box-shadow:1px 1px 3px #333;font-size:11px!important;font-family:'Lucida Grande','Arial',sans-serif!important;">
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style="background-color:transparent;border:none;"><img
src="http://staticweb.archive.org/images/toolbar/wayback-toolbar-logo.png"
alt="Wayback Machine" width="110" height="39" border="0"/></a>
  </td>
  <td style="padding:0!important;text-align:center;vertical-align:top;width:100%;">

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auto;padding:0;width:570px;"><tbody><tr>
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important;"><input type="text" name="url" id="wmtbURL"
value="http://www.stockfind.newsalert.com/" style="width:400px;font-size:11px;font-
family:'Lucida Grande','Arial',sans-serif;" onfocus="javascript:this.focus
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type="hidden" name="date" value="19971211094712" /><input type="submit" value="Go"
style="font-size:11px;font-family:'Lucida Grande','Arial',sans-serif;margin-
left:5px;" /><span id="wm_tb_options" style="display:block;"></span></form>
      </td>
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family:'Helvetica','Lucida Grande','Arial',sans-serif;"><tbody>

          <!-- NEXT/PREV MONTH NAV AND MONTH INDICATOR -->
          <tr style="width:110px;height:16px;font-size:10px!important;">
               <td style="padding-right:9px;font-size:11px!important;font-
weight:bold;text-transform:uppercase;text-align:right;white-
space:nowrap;overflow:visible;" nowrap="nowrap">

                               <a
href="http://web.archive.org/web/19971010145422/http://www.stockfind.newsalert.com/"
style="text-decoration:none;color:#33f;font-weight:bold;background-
color:transparent;border:none;" title="10 Oct 1997"><strong>OCT</strong></a>

              </td>
              <td id="displayMonthEl" style="background:#000;color:#ff0;font-size:11px!
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top:1px;text-align:center;" title="You are here: 9:47:12 Dec 11, 1997">DEC</td>
                               <td style="padding-left:9px;font-size:11px!
important;font-weight:bold;text-transform:uppercase;white-
space:nowrap;overflow:visible;" nowrap="nowrap">

                               <a
href="http://web.archive.org/web/19980214141204/http://www.stockfind.newsalert.com/"
style="text-decoration:none;color:#33f;font-weight:bold;background-
color:transparent;border:none;" title="14 Feb 1998"><strong>FEB</strong></a>

              </td>
          </tr>

          <!-- NEXT/PREV CAPTURE NAV AND DAY OF MONTH INDICATOR -->
          <tr>
              <td style="padding-right:9px;white-space:nowrap;overflow:visible;text-
align:right!important;vertical-align:middle!important;" nowrap="nowrap">

                               <a
href="http://web.archive.org/web/19971211093744/http://www.stockfind.newsalert.com/"
title="9:37:44 Dec 11, 1997" style="background-color:transparent;border:none;"><img
src="http://staticweb.archive.org/images/toolbar/wm_tb_prv_on.png" alt="Previous
capture" width="14" height="16" border="0" /></a>

              </td>
              <td id="displayDayEl" style="background:#000;color:#ff0;width:34px;height:24px;padding:2px 0 0 0;text-align:center;font-size:24px;font-weight: bold;" title="You are here: 9:47:12 Dec 11, 1997">11</td>
                               <td style="padding-left:9px;white-space:nowrap;overflow:visible;text-align:left!important;vertical-align:middle!important;" nowrap="nowrap">

                               <a href="http://web.archive.org/web/19980214141204/http://www.stockfind.newsalert.com/" title="14:12:04 Feb 14, 1998" style="background-color:transparent;border:none;"><img src="http://staticweb.archive.org/images/toolbar/wm_tb_nxt_on.png" alt="Next capture" width="14" height="16" border="0"/></a>

                           </td>
          </tr>

          <!-- NEXT/PREV YEAR NAV AND YEAR INDICATOR -->
          <tr style="width:110px;height:13px;font-size:9px!important;">
                               <td style="padding-right:9px;font-size:11px!important;font-weight: bold;text-align:right;white-space:nowrap;overflow:visible;" nowrap="nowrap">

                      1996

              </td>
              <td id="displayYearEl" style="background:#000;color:#ff0;font-size:11px!important;font-weight: bold;padding-top:1px;width:34px;height:13px;text-align:center;" title="You are here: 9:47:12 Dec 11, 1997">1997</td>
                               <td style="padding-left:9px;font-size:11px!important;font-weight: bold;white-space:nowrap;overflow:visible;" nowrap="nowrap">

                               <a href="http://web.archive.org/web/19981212033053/http://www.stockfind.newsalert.com/" style="text-decoration:none;color:#33f;font-weight:bold;background-color:transparent;border:none;" title="12 Dec 1998"><strong>1998</strong></a>

                               </td>
          </tr>
          </tbody></table>
      </td>

      </tr>
      <tr>
      <td style="vertical-align:middle;padding:0!important;">
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          <div style="margin:0!important;padding:0!important;color:#666;font-size:9px;padding-top:2px!important;white-space:nowrap;" title="Timespan for captures of this URL">4 Apr 97 - 29 Apr 99</div>
      </td>
      <td style="padding:0!important;">
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      <div id="wm-ipp-sparkline" style="position:relative; white-space:nowrap; width:400px;height:27px;background-color:#fff;cursor:pointer;border-right:1px solid #ccc;" title="Explore captures for this URL">
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1:000000000000_2008:-1:000000000000_2009:-1:000000000000_2010:-1:000000000000_2011:-
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                                src="http://staticweb.archive.org/images/toolbar/transp-
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      </div>
               </a>

      </td>
      </tr></tbody></table>
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bottom:23px;background-color:transparent;border:none;" title="Close the
toolbar">Close</a>
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right:18px;background:url(http://staticweb.archive.org/images/toolbar/wm_tb_help.png)
no-repeat 100% 0;color:#33f;font-family:'Lucida Grande','Arial',sans-serif;background-
color:transparent;border:none;" title="Get some help using the Wayback
Machine">Help</a>
  </td>
  </tr></tbody></table>

</div>
</div>
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 var wmDisclaimBanner = document.getElementById("wm-ipp");
 if(wmDisclaimBanner != null) {
   disclaimElement(wmDisclaimBanner);
 }
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</td>
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<td><font size=-1>7978.79</font> </td>
<td><img src=http://web.archive.org/web/19971211094712im_/http://www.stockfind.newsalert.com/gifs/cleardot.gif height=14 width=14><font  size=-1> </font></td>
</tr>
<tr bgcolor="#ffffcc" >
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<td><font size=-1>507.70</font> </td>
<td><img src=http://web.archive.org/web/19971211094712im_/http://www.stockfind.newsalert.com/gifs/cleardot.gif height=14 width=14><font  size=-1> </font></td>
</tr>
<tr>
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<td><img src=http://web.archive.org/web/19971211094712im_/http://www.stockfind.newsalert.com/gifs/cleardot.gif height=14 width=14><font  size=-1> </font></td>
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<tr>
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<td><font size=-1>969 25/32</font> </td>
<td><img src=http://web.archive.org/web/19971211094712im_/http://www.stockfind.newsalert.com/gifs/cleardot.gif height=14 width=14><font  size=-1> </font></td>
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 VALUE="CompanyName"><b>Company Name</b>.</FONT><BR>
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 <OPTION  VALUE="StockChart">Stock Charts
 <OPTION  VALUE="Earnings">Earnings/Forecasts
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 <OPTION  VALUE="Zacks">Zacks Reports

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 tory?StoryId=Cni4H0bWbtLLxu0u&FQ=c%25%25earnings+indu+c%25%25ern+%
 22American+Stock+Exchange+Daily+Report%22+c%25%25annrept+c%25%25qtrrept">NYSE CLOSING,
 WEDNESDAY, DECEMBER 10</A></TD></TR><TR VALIGN=top ALIGN=center>
                        <TD NOWRAP><TT>PRN&nbsp;</TT></TD>
                        <TD NOWRAP><TT>12/10 18:19</TT></TD>
                <TD ALIGN="left"> <A
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 tory?StoryId=Cni4H0bWbtLLxmtyX&FQ=c%25%25earnings+indu+c%25%25ern+%
 22American+Stock+Exchange+Daily+Report%22+c%25%25annrept+c%25%25qtrrept">Photronics
 Reports Record Fourth Quarter Results; Record Fiscal 1997 Sales Increase 23% and
 Earnings Grow 22% O</A></TD></TR><TR VALIGN=top ALIGN=center>
                        <TD NOWRAP><TT>PRN&nbsp;</TT></TD>
                        <TD NOWRAP><TT>12/10 18:00</TT></TD>
                <TD ALIGN="left"> <A
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 tory?StoryId=Cni4H0bWbtefxmdKX&FQ=c%25%25earnings+indu+c%25%25ern+%
 22American+Stock+Exchange+Daily+Report%22+c%25%25annrept+c%25%25qtrrept">Admor Memory
 Reports Unaudited Results for the Year Ended June 30, 1997 and the Quarter Ended
 September 30, 199</A></TD></TR><TR VALIGN=top ALIGN=center>
                        <TD NOWRAP><TT>PRN&nbsp;</TT></TD>
                        <TD NOWRAP><TT>12/10 17:58</TT></TD>
                <TD ALIGN="left"> <A
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 tory?StoryId=Cni4H0bWbq0DxmdqY&FQ=c%25%25earnings+indu+c%25%25ern+%
 22American+Stock+Exchange+Daily+Report%22+c%25%25annrept+c%25%25qtrrept">CPTV Announces
 Fiscal Year-End Results; Company Sets Record Date for Initial
 Distribution</A></TD></TR><TR VALIGN=top ALIGN=center>
                        <TD NOWRAP><TT>PRN&nbsp;</TT></TD>
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                                <TD NOWRAP><TT>12/10 17:47</TT></TD>
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22American+Stock+Exchange+Daily+Report%22+c%25%25annrept+c%25%25qtrrept">GST
Telecommunications Reports Record Revenues of $31.0 Million for the Quarter and $106.0
Million for the Year</A></TD></TR><TR VALIGN=top ALIGN=center>
                                <TD NOWRAP><TT>PRN&nbsp;</TT></TD>
                                <TD NOWRAP><TT>12/10 17:30</TT></TD>
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22American+Stock+Exchange+Daily+Report%22+c%25%25annrept+c%25%25qtrrept">Secom General
Reports Higher Fiscal Fourth Quarter and Year-End Sales And Profits; Expects Operating
Loss for C</A></TD></TR><TR VALIGN=top ALIGN=center>
                                <TD NOWRAP><TT>PRN&nbsp;</TT></TD>
                                <TD NOWRAP><TT>12/10 17:16</TT></TD>
                        <TD ALIGN="left"> <A
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22American+Stock+Exchange+Daily+Report%22+c%25%25annrept+c%25%25qtrrept">American
Stock Exchange Daily Report</A></TD></TR></TABLE>
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         <TR VALIGN=top ALIGN=center>
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22American+Stock+Exchange+Daily+Report%22+c%25%25annrept+c%25%25qtrrept">CFM
Technologies Announces Fiscal 1997 Results Fiscal 1997 Earnings Per Share Increase 31%
</A></TD></TR><TR VALIGN=top ALIGN=center>
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                                <TD NOWRAP><TT>12/10 16:45</TT></TD>
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22American+Stock+Exchange+Daily+Report%22+c%25%25annrept+c%25%25qtrrept">First
Investors Reports Second Quarter Results</A></TD></TR><TR VALIGN=top ALIGN=center>
                                <TD NOWRAP><TT>PRN&nbsp;</TT></TD>
                                <TD NOWRAP><TT>12/10 16:44</TT></TD>
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22American+Stock+Exchange+Daily+Report%22+c%25%25annrept+c%25%25qtrrept">E.W. Scripps
Co. November Revenues Up 7.5 Percent</A></TD></TR></TABLE>
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HREF="http://web.archive.org/web/19971211094712/http://www.stockfind.newsalert.com/bin/
headlines?
Command=next&Title=Stock+Markets+and+Latest+Corporate+Earnings+Announcements&FQ=c%25%
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Symbols</b> (eg: IBM, T, GM) or <INPUT TYPE="radio" NAME="SymType"
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VALUE="CompanyName"><b>Company Name</b>.</FONT><BR>
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</SELECT>
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 getit.gif" HEIGHT=22 WIDTH=68 BORDER=0 ALIGN=ABSMIDDLE ALIGN=MIDDLE>
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Delayed quotes <i>powered</i> by PC Quote Inc.
                All stock quotes are 20 minute
                delayed and are believed accurate but are not warranted or guaranteed
                by News Alert Inc.

All times Eastern U.S.<p></font></CENTER>

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 ge."><img
 src="http://web.archive.org/web/19971211094712im_/http://ads.lycos.com/ads/dlj22.gif"
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 ge.">Serious online investors     trade up    DLJ direct    click here</a>
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 ">Copyright</A>&copy; 1997 Lycos,Inc. All Rights Reserved.<BR>
Lycos<font size="-3"><sup>&#174;</sup></font> is a registered trademark of Carnegie
 Mellon University<BR>
<A
 HREF="http://web.archive.org/web/19971211094712/http://www.lycos.com/contact.html">Quest
 ions &amp; Comments</A>  <A
 HREF="http://web.archive.org/web/19971211094712/http://www.lycos.com/lycosinc/legal.html
 ">Terms and conditions</A>
</CENTER>
</FONT>
</td>
</tr>
</table>
</TD></TR></TABLE>
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</BODY>
</html>
<!--end footer-->






<!--
     FILE ARCHIVED ON 9:47:12 Dec 11, 1997 AND RETRIEVED FROM THE
     INTERNET ARCHIVE ON 22:01:52 May 26, 2011.
     JAVASCRIPT APPENDED BY WAYBACK MACHINE, COPYRIGHT INTERNET ARCHIVE.

     ALL OTHER CONTENT MAY ALSO BE PROTECTED BY COPYRIGHT (17 U.S.C.
     SECTION 108(a)(3)).
-->

```

```

<HTML>
<HEAD>
        <TITLE>Lycos Money Guide</TITLE>
        <meta http-equiv="pragma" content="no-cache">
</HEAD>


<BODY BGCOLOR="#FFFFFF">
<!-- BEGIN WAYBACK TOOLBAR INSERT -->

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<script type="text/javascript" src="http://staticweb.archive.org/js/graph-calc.js" ></script>
<script type="text/javascript" src="http://staticweb.archive.org/jflot/jquery.min.js" ></script>
<script type="text/javascript">
//<![CDATA[
var firstDate = 820454400000;
var lastDate = 1325375999999;
var wbPrefix = "http://web.archive.org/web/";
var wbCurrentUrl = "http://www.lycos.com/money/";

var curYear = -1;
var curMonth = -1;
var yearCount = 16;
var firstYear = 1996;
var imgWidth=400;
var yearImgWidth = 25;
var monthImgWidth = 2;
var trackerVal = "none";
var displayDay = "11";
var displayMonth = "Dec";
var displayYear = "1997";
var prettyMonths = ["Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"];

function showTrackers(val) {
        if(val == trackerVal) {
                return;
        }
        if(val == "inline") {
                document.getElementById("displayYearEl").style.color = "#ec008c";
                document.getElementById("displayMonthEl").style.color = "#ec008c";
                document.getElementById("displayDayEl").style.color = "#ec008c";
        } else {
                document.getElementById("displayYearEl").innerHTML = displayYear;
                document.getElementById("displayYearEl").style.color = "#ff0";
                document.getElementById("displayMonthEl").innerHTML = displayMonth;
                document.getElementById("displayMonthEl").style.color = "#ff0";
                document.getElementById("displayDayEl").innerHTML = displayDay;
                document.getElementById("displayDayEl").style.color = "#ff0";
        }
   document.getElementById("wbMouseTrackYearImg").style.display = val;
   document.getElementById("wbMouseTrackMonthImg").style.display = val;
   trackerVal = val;
}
function getElementX2(obj) {
        var thing = jQuery(obj);
        if((thing == undefined)
                        || (typeof thing == "undefined")
                        || (typeof thing.offset == "undefined")) {
                return getElementX(obj);
        }
        return Math.round(thing.offset().left);
}
function trackMouseMove(event,element) {

   var eventX = getEventX(event);
   var elementX = getElementX2(element);
   var xOff = eventX - elementX;
        if(xOff < 0) {
                xOff = 0;
        } else if(xOff > imgWidth) {
                xOff = imgWidth;
        }
   var monthOff = xOff % yearImgWidth;

   var year = Math.floor(xOff / yearImgWidth);
        var yearStart = year * yearImgWidth;
   var monthOfYear = Math.floor(monthOff / monthImgWidth);
   if(monthOfYear > 11) {
       monthOfYear = 11;
   }
   // 1 extra border pixel at the left edge of the year:
   var month = (year * 12) + monthOfYear;
   var day = 1;
        if(monthOff % 2 == 1) {
                day = 15;
        }
        var dateString =
                zeroPad(year + firstYear) +
                zeroPad(monthOfYear+1,2) +
                zeroPad(day,2) + "000000";

        var monthString = prettyMonths[monthOfYear];
        document.getElementById("displayYearEl").innerHTML = year + 1996;
        document.getElementById("displayMonthEl").innerHTML = monthString;
        // looks too jarring when it changes..
        //document.getElementById("displayDayEl").innerHTML = zeroPad(day,2);

        var url = wbPrefix + dateString + '/' +  wbCurrentUrl;
        document.getElementById('wm-graph-anchor').href = url;

   //document.getElementById("wmtbURL").value="evX("+eventX+") elX("+elementX+") xO("+xOff+") y("+year+") m("+month+") monthOff("+monthOff+") DS("+dateString+") Moy("+monthOfYear+") ms("+monthString+")";
   if(curYear != year) {
       var yrOff = year * yearImgWidth;
       document.getElementById("wbMouseTrackYearImg").style.left = yrOff + "px";
       curYear = year;
   }
   if(curMonth != month) {
       var mtOff = year + (month * monthImgWidth) + 1;
       document.getElementById("wbMouseTrackMonthImg").style.left = mtOff + "px";
       curMonth = month;
   }
}
//]]>
</script>

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<div id="wm-ipp-inside" style="position:fixed;padding:0!important;margin:0!important;width:97%;min-width:780px;border:5px solid #000;border-top:none;background-
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  <td style="padding:10px;vertical-align:top;min-width:110px;">
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  </td>
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      <td style="padding:3px 0;" colspan="2">
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      </td>
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          <!-- NEXT/PREV MONTH NAV AND MONTH INDICATOR -->
          <tr style="width:110px;height:16px;font-size:10px!important;">
               <td style="padding-right:9px;font-size:11px!important;font-weight:bold;text-transform:uppercase;text-align:right;white-space:nowrap;overflow:visible;" nowrap="nowrap">

                      Nov

              </td>
              <td id="displayMonthEl" style="background:#000;color:#ff0;font-size:11px!important;font-weight:bold;text-transform:uppercase;width:34px;height:15px;padding-top:1px;text-align:center;" title="You are here: 19:12:34 Dec 11, 1997">DEC</td>
                               <td style="padding-left:9px;font-size:11px!important;font-weight:bold;text-transform:uppercase;white-space:nowrap;overflow:visible;" nowrap="nowrap">

                               <a href="http://web.archive.org/web/19980131124243/http://lycos.com/money/" style="text-decoration:none;color:#33f;font-weight:bold;background-color:transparent;border:none;" title="31 Jan 1998"><strong>JAN</strong></a>

              </td>
          </tr>

          <!-- NEXT/PREV CAPTURE NAV AND DAY OF MONTH INDICATOR -->
          <tr>
              <td style="padding-right:9px;white-space:nowrap;overflow:visible;text-align:right!important;vertical-align:middle!important;" nowrap="nowrap">

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```

```
                </td>
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1997">11</td>
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important;" nowrap="nowrap">

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                        1996

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of this URL">10 Dec 97 - 28 Mar 06</div>
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       <a href="http://faq.web.archive.org/" style="display:block;padding-right:18px;background:url(http://staticweb.archive.org/images/toolbar/wm_tb_help.png) no-repeat 100% 0;color:#33f;font-family:'Lucida Grande','Arial',sans-serif;background-color:transparent;border:none;" title="Get some help using the Wayback Machine">Help</a>
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no help here. Christmas is closing in. Get to work!


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&#149;&#160;<A HREF="http://web.archive.org/web/19971211191234/http://www.lycos.com/wguide/wire/wire_969192_58128_2_0.html"
>The Many Forms of Taxes</A>
<BR>There's a form for every taxable occasion <BR>
&#149;&#160;<A HREF="http://web.archive.org/web/19971211191234/http://www.lycos.com/wguide/wire/wire_969116_47238_2_0.html"
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<BR>Credit services can help you out of a bind<BR>

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                                                Find it all from investing to taxes
                                                <BR>
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 &nbsp;Stocks&nbsp;&amp;<BR>Win$$!&nbsp;Click&nbsp;Now<BR>
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 s/default.asp">The latest headlines from our news service</A>

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Your Stocks, Warm<BR> 'N' Fresh When You<BR> Get Personalized</A>
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 oks/bookswg2.html">Save Big! Free Shipping from Barnes and Noble for the Holidays</A>

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 ckFind Free Quotes</A>

          <P>

          <A
 HREF="http://web.archive.org/web/19971211191234/http://www.companiesonline.com/">Compani
 es Online Listings</A>

          <P>

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 /click?sourceid=4353&is_search=Y&keyword=Money&match=exact&options=and">Buy Books About
 Money</A>

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<a href="http://web.archive.org/web/19971211191234/http://www.lycos.com/lycosinc/lycosjobs.html">Jobs4You</a> <strong><font size="+1">&#46;</font></strong>
<a href="http://web.archive.org/web/19971211191234/http://www.lycos.com/cgi-bin/nph-bounce?gtefooter|http://yp.gte.net/lhome">GTE Yellow Pages</a> <strong><font size="+1">&#46;</font></strong>
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<a href="http://web.archive.org/web/19971211191234/http://www.lycos.se/">Lycos Sweden</a> <strong><font size=+2>&#46;</font></strong> <a href="http://web.archive.org/web/19971211191234/http://www-uk.lycos.com/"> Lycos UK</a></nobr>
<P><font size="-2">
<A HREF="http://web.archive.org/web/19971211191234/http://www.lycos.com/lycosinc/legal.html">Copyright</A>&copy; 1997 Lycos,Inc.<BR>
All Rights Reserved.<BR>
Lycos<font size="-3"><sup>&#174;</sup></font> is a registered trademark of<BR>
Carnegie Mellon University<BR>
<A HREF="http://web.archive.org/web/19971211191234/http://www.lycos.com/contact.html">Questions &amp; Comments</A><BR>
<A HREF="http://web.archive.org/web/19971211191234/http://www.lycos.com/lycosinc/legal.html">Terms and conditions</A>
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<!--
     FILE ARCHIVED ON 19:12:34 Dec 11, 1997 AND RETRIEVED FROM THE
     INTERNET ARCHIVE ON 22:01:36 May 26, 2011.
     JAVASCRIPT APPENDED BY WAYBACK MACHINE, COPYRIGHT INTERNET ARCHIVE.

     ALL OTHER CONTENT MAY ALSO BE PROTECTED BY COPYRIGHT (17 U.S.C.
     SECTION 108(a)(3)).
-->

```

InterNIC

Home Registrars FAQ **Whois**

Whois Search Results

Search again (.aero, .arpa, .asia, .biz, .cat, .com, .coop, .edu, .info, .int, .jobs, .mobi, .museum, .name, .net, .org, .pro, or .travel) :

☐

● Domain (ex. internic.net)
○ Registrar (ex. ABC Registrar, Inc.)
○ Nameserver (ex. ns.example.com or 192.16.0.192)

Submit

```
Whois Server Version 2.0

Domain names in the .com and .net domains can now be registered
with many different competing registrars. Go to http://www.internic.net
for detailed information.

   Domain Name: LYCOS.COM
   Registrar: MELBOURNE IT, LTD. D/B/A INTERNET NAMES WORLDWIDE
   Whois Server: whois.melbourneit.com
   Referral URL: http://www.melbourneit.com
   Name Server: NS1.LYCOS.COM
   Name Server: NS2.LYCOS.COM
   Name Server: NS3.LYCOS.COM
   Name Server: NS4.LYCOS.COM
   Status: clientTransferProhibited
   Updated Date: 13-aug-2009
   Creation Date: 13-apr-1995
   Expiration Date: 14-apr-2012

>>> Last update of whois database: Fri, 27 May 2011 21:02:30 UTC <<<

NOTICE: The expiration date displayed in this record is the date the
registrar's sponsorship of the domain name registration in the registry is
currently set to expire. This date does not necessarily reflect the expiration
date of the domain name registrant's agreement with the sponsoring
registrar.  Users may consult the sponsoring registrar's Whois database to
view the registrar's reported date of expiration for this registration.

TERMS OF USE: You are not authorized to access or query our Whois
database through the use of electronic processes that are high-volume and
automated except as reasonably necessary to register domain names or
modify existing registrations; the Data in VeriSign Global Registry
Services' ("VeriSign") Whois database is provided by VeriSign for
information purposes only, and to assist persons in obtaining information
about or related to a domain name registration record. VeriSign does not
guarantee its accuracy. By submitting a Whois query, you agree to abide
by the following terms of use: You agree that you may use this Data only
for lawful purposes and that under no circumstances will you use this Data
to: (1) allow, enable, or otherwise support the transmission of mass
unsolicited, commercial advertising or solicitations via e-mail, telephone,
or facsimile; or (2) enable high volume, automated, electronic processes
that apply to VeriSign (or its computer systems). The compilation,
repackaging, dissemination or other use of this Data is expressly
prohibited without the prior written consent of VeriSign. You agree not to
use electronic processes that are automated and high-volume to access or
```

Home

```
query the Whois database except as reasonably necessary to register
domain names or modify existing registrations. VeriSign reserves the right
to restrict your access to the Whois database in its sole discretion to ensure
operational stability.  VeriSign may restrict or terminate your access to the
Whois database for failure to abide by these terms of use. VeriSign
reserves the right to modify these terms at any time.

The Registry database contains ONLY .COM, .NET, .EDU domains and
Registrars.
```

Report Inaccurate Whois listing

This page last updated 01/24/2003

InterNIC

Home Registrars FAQ **Whois**

Whois Search Results

Search again (.aero, .arpa, .asia, .biz, .cat, .com, .coop, .edu, .info, .int, .jobs, .mobi, .museum, .name, .net, .org, .pro, or .travel) :

☐

● Domain (ex. internic.net)
○ Registrar (ex. ABC Registrar, Inc.)
○ Nameserver (ex. ns.example.com or 192.16.0.192)

Submit

```
Whois Server Version 2.0

Domain names in the .com and .net domains can now be registered
with many different competing registrars. Go to http://www.internic.net
for detailed information.

   Domain Name: NEWSALERT.COM
   Registrar: NETWORK SOLUTIONS, LLC.
   Whois Server: whois.networksolutions.com
   Referral URL: http://www.networksolutions.com
   Name Server: NY-NS1.MARKETWATCH.COM
   Name Server: NY-NS2.MARKETWATCH.COM
   Name Server: SB-NS.MARKETWATCH.COM
   Status: clientTransferProhibited
   Updated Date: 01-jul-2009
   Creation Date: 04-aug-1994
   Expiration Date: 03-aug-2011

>>> Last update of whois database: Fri, 27 May 2011 21:05:48 UTC <<<

NOTICE: The expiration date displayed in this record is the date the
registrar's sponsorship of the domain name registration in the registry is
currently set to expire. This date does not necessarily reflect the expiration
date of the domain name registrant's agreement with the sponsoring
registrar.  Users may consult the sponsoring registrar's Whois database to
view the registrar's reported date of expiration for this registration.

TERMS OF USE: You are not authorized to access or query our Whois
database through the use of electronic processes that are high-volume and
automated except as reasonably necessary to register domain names or
modify existing registrations; the Data in VeriSign Global Registry
Services' ("VeriSign") Whois database is provided by VeriSign for
information purposes only, and to assist persons in obtaining information
about or related to a domain name registration record. VeriSign does not
guarantee its accuracy. By submitting a Whois query, you agree to abide
by the following terms of use: You agree that you may use this Data only
for lawful purposes and that under no circumstances will you use this Data
to: (1) allow, enable, or otherwise support the transmission of mass
unsolicited, commercial advertising or solicitations via e-mail, telephone,
or facsimile; or (2) enable high volume, automated, electronic processes
that apply to VeriSign (or its computer systems). The compilation,
repackaging, dissemination or other use of this Data is expressly
prohibited without the prior written consent of VeriSign. You agree not to
use electronic processes that are automated and high-volume to access or
query the Whois database except as reasonably necessary to register
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Home

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domain names or modify existing registrations. VeriSign reserves the right
to restrict your access to the Whois database in its sole discretion to ensure
operational stability.  VeriSign may restrict or terminate your access to the
Whois database for failure to abide by these terms of use. VeriSign
reserves the right to modify these terms at any time.

The Registry database contains ONLY .COM, .NET, .EDU domains and
Registrars.
```

Report Inaccurate Whois listing

This page last updated 01/24/2003

INTERNET ARCHIVE

Web | Moving Images | Texts | Audio | Software | Education |
Patron Info | About IA

Universal access to human knowledge

Home Donate | Forums | FAQs | Contributions | Terms, Privacy, & Copyright | Contact | Jobs | Bios

Search: FAQs
Advanced Search

Anonymous User (login or join us)

Frequently Asked Questions

[The Wayback Machine | Texts and Books | Audio | The Internet Archive | Downloading and Playing Movies | FreeCache | DocuComp | About the Movies | About the Prelinger Movies | Contributing to the Archive | Forums | Virtual Library Cards (AKA Accounts) | SFLan]

Questions

- How can I get my site included in the Archive?
- How can I remove my site's pages from the Wayback Machine?
- What is the Internet Archive Wayback Machine?
- Can I link to old pages on the Wayback Machine?
- Why isn't the site I'm looking for in the archive?
- What does it mean when a site's archive data has been "updated"?
- Who was involved in the creation of the Internet Archive Wayback Machine?
- How was the Wayback Machine made?

The Wayback Machine

How can I get my site included in the Archive?

Alexa Internet has been crawling the web since 1996, which has resulted in a massive archive. If you have a web site, and you would like to ensure that it is saved for posterity in the Internet Archive, and you've searched wayback and found no results, you can visit the Alexa's "Webmasters" page at http://pages.alexa.com/help/webmasters/index.html#crawl_site.

Method 2: if you have the Alexa tool bar installed, just visit a site.

Method 3: while visiting a site, use the 'show related links' in Internet Explorer, which uses the Alexa service.

Sites are usually crawled within 24 hours and no more then 48. Right now there is a 6-12 month lag between the date a site is crawled and the date it appears in the Wayback Machine.

How can I remove my site's pages from the Wayback Machine?

The Internet Archive is not interested in preserving or offering access to Web sites or other Internet documents of persons who do not want their materials in the collection. By placing a simple robots.txt file on your Web server, you can exclude your site from being crawled as well as exclude any historical pages from the Wayback Machine.

Internet Archive uses the exclusion policy intended for use by both academic and non-academic digital repositories and archivists. See our exclusion policy.

You can find exclusion directions at exclude.php. If you cannot place the robots.txt file, opt not to, or have further questions, email us at info at archive dot org.

What is the Internet Archive Wayback Machine?

The Internet Archive Wayback Machine is a service that allows people to visit archived versions of Web sites. Visitors to the Wayback Machine can type in a URL, select a date range, and then begin surfing on an archived version of the Web. Imagine surfing circa 1999 and looking at all the Y2K hype, or revisiting an older version of your favorite Web site. The Internet Archive Wayback Machine can make all of this possible.

Can I link to old pages on the Wayback Machine?

Yes! The Wayback Machine is built so that it can be used and referenced. If you find an archived page that you would like to reference on your Web page or in an article, you can

How large is the Archive?

What type of machinery is used in this Internet Archive?

How do you archive dynamic pages?

Why are some sites harder to archive than others?

Some sites are not available because of robots.txt or other exclusions. What does that mean?

How can I help the Internet Archive and the Wayback Machine?

Can I search the Archive?

Why am I getting broken or gray images on a site?

How do I contact the Internet Archive?

What is the Wayback Machine's Copyright Policy?

Why is the Internet Archive collecting sites from the Internet? What makes the information useful?

copy the URL. You can even use fuzzy URL matching and date specification... but that's a bit more advanced.

Why isn't the site I'm looking for in the archive?

Some sites may not be included because the automated crawlers were unaware of their existence at the time of the crawl. It's also possible that some sites were not archived because they were password protected, blocked by robots.txt, or otherwise inaccessible to our automated systems. Siteowners might have also requested that their sites be excluded from the Wayback Machine. When this has occurred, you will see a "blocked site error" message. When a site is excluded because of robots.txt you will see a "robots.txt query exclusion error" message.

What does it mean when a site's archive data has been "updated"?

When our automated systems crawl the web every few months or so, we find that only about 50% of all pages on the web have changed from our previous visit. This means that much of the content in our archive is duplicate material. If you don't see ""*"" next to an archived document, then the content on the archived page is identical to the previously archived copy.

Who was involved in the creation of the Internet Archive Wayback Machine?

"The original idea for the Internet Archive Wayback Machine began in 1996, when the Internet Archive first began archiving the web. Now, five years later, with over 100 terabytes and a dozen web crawls completed, the Internet Archive has made the Internet Archive Wayback Machine available to the public. The Internet Archive has relied on donations of web crawls, technology, and expertise from Alexa Internet and others. The Internet Archive Wayback Machine is owned and operated by the Internet Archive."

How was the Wayback Machine made?

Alexa Internet, in cooperation with the Internet Archive, has designed a three dimensional index that allows browsing of web documents over multiple time periods, and turned this unique feature into the Wayback Machine.

How large is the Archive?

The Internet Archive Wayback Machine contains approximately 1 petabyte of data and is currently growing at a rate of 20 terabytes per month. This eclipses the amount of text contained in the world's largest libraries, including the Library of Congress. If you tried to place the entire contents of the archive onto floppy disks (we don't recommend this!) and laid them end to end, it would stretch from New York, past Los Angeles, and halfway to Hawaii.

What type of machinery is used in this Internet Archive?

Much of the Internet Archive is stored on hundreds of slightly modified x86 servers. The computers run on the Linux operating system. Each computer has 512Mb of memory and can hold just over 1 Terabyte of data on ATA disks. However we are developing a new way of storing our data on a smaller machine. Each machine will store 1 terabyte. For more information go to www.petabox.org.

How do you archive dynamic pages?

There are many different kinds of dynamic pages, some of which are easily stored in an archive and some of which fall apart completely. When a dynamic page renders standard html, the archive works beautifully. When a dynamic page contains forms, JavaScript, or other elements that require interaction with the originating host, the archive will not contain the original site's functionality.

Why are some sites harder to archive than others?

If you look at our collection of archived sites, you will find some broken pages, missing graphics, and some sites that aren't archived at all. Here are some things that make it difficult to archive a web site:

- Robots.txt -- We respect robot exclusion headers.
- Javascript -- Javascript elements are often hard to archive, but especially if they generate links without having the full name in the page. Plus, if javascript needs to contact the originating server in order to work, it will fail when archived.
- Server side image maps -- Like any functionality on the web, if it needs to contact the originating server in order to work, it will fail when archived.
- Unknown sites -- The archive contains crawls of the Web completed by Alexa Internet. If Alexa doesn't know about your site, it won't be archived. Use the Alexa Toolbar (available at www.alexa.com), and it will know about your page. Or you can visit Alexa's Archive Your Site page at http://pages.alexa.com/help/webmasters/index.html#crawl_site.
- Orphan pages -- If there are no links to your pages, the robot won't find it (the robots don't enter queries in search boxes.)

As a general rule of thumb, simple html is the easiest to archive.

Some sites are not available because of robots.txt or other exclusions. What does that mean?

The Standard for Robot Exclusion (SRE) is a means by which web site owners can instruct automated systems not to crawl their sites. Web site owners can specify files or directories that are disallowed from a crawl, and they can even create specific rules for different automated crawlers. All of this information is contained in a file called robots.txt. While robots.txt has been adopted as the universal standard for robot exclusion, compliance with robots.txt is strictly voluntary. In fact most web sites do not have a robots.txt file, and many web crawlers are not programmed to obey the instructions anyway. However, Alexa Internet, the company that crawls the web for the Internet Archive, does respect robots.txt instructions, and even does so retroactively. If a web site owner decides he / she prefers not to have a web crawler visiting his / her files and sets up robots.txt on the site, the Alexa crawlers will stop visiting those files and will make unavailable all files previously gathered from that site. This means that sometimes, while using the Internet Archive Wayback Machine, you may find a site that is unavailable due to robots.txt (you will see a "robots.txt query exclusion error" message). Sometimes a web site owner will contact us directly and ask us to stop crawling or archiving a site, and we endevor to comply with these requests. When you come accross a "blocked site error" message, that means that a siteowner has made such a request and it has been honored.

How can I help the Internet Archive and the Wayback Machine?

The Internet Archive actively seeks donations of digital materials for preservation. If you have digital materials that may be of interest to future generations, please let us know by sending an email to info at archive dot org. The Internet Archive is also seeking additional funding to continue this important mission. You can click the donate tab above or click here. Thank you for considering us in your charitable giving.

Can I search the Archive?

Using the Internet Archive Wayback Machine, it is possible to search for the names of sites contained in the Archive (URLs) and to specify date ranges for your search. We hope to implement a full text search engine at some point in the future.

Do you archive email? Chat?

Do you collect all the sites on the Web?

Is there any personal information in these collections?

Who has access to the collections? What about the public?

'How can I get a copy of the pages on my Web site? If my site got hacked or damaged, could I get a backup from the Archive?'

Can people download sites from the collections?

How do you protect my privacy if you archive my site?

What does 'failed connection' and other error messages mean?

Why are there no recent archives in the Wayback Machine?

How does the Wayback Machine behave with Javascript turned off?

How did I end up on the live

version of a site? or I clicked on X date, but now I am on Y date, how is that possible?

Why am I getting broken or gray images on a site?

Broken images (when there is a small red "x" where the image should be) occur when the images are not available on our servers. Usually this means that we did not archive them. Gray images are the result of robots.txt exclusions. The site in question may have blocked robot access to their images directory.

How do I contact the Internet Archive?

All questions about the Wayback Machine, or other Internet Archive projects, should be addressed to info at archive dot org.

What is the Wayback Machine's Copyright Policy?

The Internet Archive respects the intellectual property rights and other proprietary rights of others. The Internet Archive may, in appropriate circumstances and at its discretion, remove certain content or disable access to content that appears to infringe the copyright or other intellectual property rights of others. If you believe that your copyright has been violated by material available through the Internet Archive, please provide the Internet Archive Copyright Agent with the following information:

- Identification of the copyrighted work that you claim has been infringed;
- An exact description of where the material about which you complain is located within the Internet Archive collections;
- Your address, telephone number, and email address;
- A statement by you that you have a good-faith belief that the disputed use is not authorized by the copyright owner, its agent, or the law;
- A statement by you, made under penalty of perjury, that the above information in your notice is accurate and that you are the owner of the copyright interest involved or are authorized to act on behalf of that owner;
- Your electronic or physical signature.

Internet Archive uses the exclusion policy intended for use by both academic and non-academic digital repositories and archivists. See our full exclusion policy.

The Internet Archive Copyright Agent can be reached as follows:

Internet Archive Copyright Agent
Internet Archive
Presidio of San Francisco
P.O. Box 29244
San Francisco, CA 94129
Phone: 415-561-6767
Email: info at archive dot org

Why is the Internet Archive collecting sites from the Internet? What makes the information useful?

Most societies place importance on preserving artifacts of their culture and heritage. Without such artifacts, civilization has no memory and no mechanism to learn from its successes and failures. Our culture now produces more and more artifacts in digital form. The Archive's mission is to help preserve those artifacts and create an Internet library for researchers, historians, and scholars. The Archive collaborates with institutions including the Library of Congress and the Smithsonian.

Do you archive email? Chat?

No, we do not collect or archive chat systems or personal email messages that have not been posted to Usenet bulletin boards or publicly accessible online message boards.

Do you collect all the sites on the Web?

No, we collect only publicly accessible Web pages. We do not archive pages that require a password to access, pages tagged for "robot exclusion" by their owners, pages that are only accessible when a person types into and sends a form, or pages on secure servers. If a site owner properly requests removal of a Web site through http://www.archive.org/about/exclude.php, we will exclude that site from the Wayback Machine.

Is there any personal information in these collections?

We collect Web pages that are publicly accessible. These may include pages with personal information.

Who has access to the collections? What about the public?

Anyone can access our collections through our website archive.org. The web archive can be searched using the Wayback Machine.

The Archive makes the collections available at no cost to researchers, historians, and scholars. At present, it takes someone with a certain level of technical knowledge to access collections in a way other than our website, but there is no requirement that a user be affiliated with any particular organization.

'How can I get a copy of the pages on my Web site? If my site got hacked or damaged, could I get a backup from the Archive?'

Our terms of use do not cover backups for the general public. However, you may use the Internet Archive Wayback Machine to locate and access archived versions of your web site. We can't guarantee that your site has been or will be archived. For siteowners only we offer limited backup capabilites. Send your request to info at archive dot org for more information.

Can people download sites from the collections?

Our terms of use specify that users of the collections are not to copy data from the collections. If there are special circumstances that you think the Archive should consider, please contact info at archive dot org.

How do you protect my privacy if you archive my site?

The Archive collects Web pages that are publicly available — the same ones that you might find as you surfed around the Web. We do not archive pages that require a password to access, pages tagged for "robot exclusion" by their owners, pages that are only accessible when a person types into and sends a form, or pages on secure servers. We also provide information on removing a site from the collections. Those who use the collections must agree to certain terms of use.

Like a public library, the Archive provides free and open access to its collections to researchers, historians, and scholars. Our cultural norms have long promoted access to documents that were, but no longer are, publicly accessible.

Given the rate at which the Internet is changing — the average life of a Web page is only 77 days — if no effort is made to preserve it, it will be entirely and irretrievably lost. Rather than let this moment slip by, we are proceeding with documenting the growth and content of the Internet, using libraries as our model.

If you are interested in these issues, please join and contribute to our announcement and discussion lists.

What does 'failed connection' and other error messages mean?

Below is a list of the main error messages you will see while searching the Wayback Machine. If you see an error message that does not have the Internet Archive Wayback Machine logo in the upper left corner, you are most likely looking at an archived page or the live web.

Failed Connection: The server that the particular piece of information lives on is down. Generally these clear up within two weeks.

Robots.txt Query Exclusion: A robots.txt is something that a site owner puts on their site that keeps crawlers like our own from crawling them. The Internet Archive retroactively respects all robots.txt.

Blocked Site Error: Site owners, copyright holders and others who fit Internet Archive's exclusion policy have requested that the site be excluded from the Wayback Machine. For exclusion criteria, please see our exclusion policy (we use the same one used and developed by other digital repositories and archivists both academic and non-academic).

Path Index Error: A path index error message refers to a problem in our database wherein the information requested is not available (generally because of a machine or software issue, however each case can be different). We cannot always completely fix these errors in a timely manner.

Not in Archive: Generally this means that the site archived has a redirect on it and the site you are redirected to is not in the archive or cannot be found on the live web.

Why are there no recent archives in the Wayback Machine?

We do not add pages less than 6 months after they are collected, because of the time delayed donation from Alexa. Updates can take up to 12 months in some cases.

There is no access to files before they appear in the Wayback Machine.

How does the Wayback Machine behave with Javascript turned off?

If you have Javascript turned off, images and links will be from the live web, not from our archive of old Web files.

How did I end up on the live version of a site? or I clicked on X date, but now I am on Y date, how is that possible?

Not every date for every site archived is 100% complete. When you are surfing an incomplete archived site the Wayback Machine will grab the closest available date to the one you are in for the links that are missing. In the event that we do not have the link archived at all, the Wayback Machine will look for the link on the live web and grab it if available. Pay attention to the date code embedded in the archived url. This is the list of numbers in the middle; it translates as yyyymmddhhmmss. For example in this url http://web.archive.org/web/20000229123340/http://www.yahoo.com/ the date the site was crawled was Feb 29, 2000 at 12:33 and 40 seconds.

Questions

How do I view

Texts and Books

How do I view the DJVU books?

the DJVU books?

What is the status of the Internet Bookmobile?

How do I view the PDF books?

How do I download a book in tk3 format?

What equipment does the Bookmobile use to print and bind books?

The directory structure for the texts?

How do you remove line breaks from the Gutenberg texts?

What is the best way to link to a book?

Can I volunteer for the book project?

DJVU is a open format for scanned documents. There are free readers available at:

http://www.lizardtech.com/download/?x=2&p=1&o=1&titl=Download%20DjVu%20Browser%20Plug-in

for windows, mac, linux, mac OS-X, solaris.
Try it. We like this compact, searchable, good looking, and open format.

What is the status of the Internet Bookmobile?

Internet Archive's Internet Bookmobile is currently out of commission. However Eric Eldred it currently (May 2004) touring the U.S. with his bookmobile. You can contact him by writing to: ericeldred at usa.net. You can also post questions, stop requests, etc to the bookmobile forum as well. There is also a new organization called Anywhere Books (anywherebooks.org) that is working to put bookmobiles in struggling nations.

How do I view the PDF books?

Books that are available in PDF format require Adobe Acrobat. The software is free to download and use.

How do I download a book in tk3 format?

This is a beautiful format, and well worth trying. To download a reader for Windows and Mac (pre OSX) go to http://www.nightkitchen.com/download/reader/index.phtml

What equipment does the Bookmobile use to print and bind books?

You can find a list of all the hardware and software used in the bookmobile here: http://www.archive.org/texts/bookmobile-in_it.php

You can also see a movie of a book being made here: http://www.archive.org/details/HowToMakeABookmov

The directory structure for the texts?

In order to store all the texts that the archive has, and will eventually acquire, the directory structure is:

IDENTIFIER/IDENTIFIER.extension (tif, djvu, pdf)

IDENTIFIER: Unique in Archive's collection, alphanumeric (URL safe), this is the original name adopted by the originating collection (alphanumeric characters and _-. Best if from 5 to 80 characters). One format is [title:8-16][vol:2][author:4][library:4]

EXTENSIONS:
- If the original files are tif files, then:
- IDENTIFIER_orig.tif: All the orginal tiffs are stored in the form of multi page tiff. Demoware windows viewer Informatik Image Viewer. If it goes over 2GB, then it is stored as a tar of singlepage tifs the directory named IDENTIFIER_orig_tif/IDENTIFIER_orig_XXXX.tif resulting in a file called IDENTIFIER_orig_tif.tar
- IDENTIFIER.tif: All the cleaned up tifs (usually cropped, despeckled, deskewed) are stored in the form of multi page tiffs. If it goes over 2GB, then it is stored as a tar of a directory named ./IDENTIFIER_tif/IDENTIFIER_XXXX.tif resulting in a file called IDENTIFIER_tif.tar

- If the original files are JPEG JP2 or CR2 files, then:

- All the original jpg files are used to make a zip file named IDENTIFIER_orig_jpg.zip where the names of the pages in the zipped directory are IDENTIFIER_orig_jpg/IDENTIFIER_orig_XXXX.jpg. If the resulting file is greater than 2GB (thus breaking the zip format until zip64 is common), then the file will be in tar format named IDENTIFIER_orig_jpg.tar . If the originals are jp2 or cr2 files, then substitute these extentions above.
- Similarly all the processed jpg files (cropped and deskewed) are used to make a zip file named IDENTIFIER_jpg.zip where the names of the pages in the zipped directory are IDENTIFIER_jpg/IDENTIFIER_XXXX.jpg. If the resulting file is greater than 2GB (thus breaking the zip format until zip64 is common), then the file will be in tar format named IDENTIFIER_jpg.tar
- In the case where there is a small jpg version of the files for on-screen access then a similar naming convention is used from the _orig.jpg version above, but with _200KB resulting in a file named IDENTIFIER_200KB_jpg.zip where the names of the pages in the zipped directory are IDENTIFIER_200KB_jpg/IDENTIFIER_200KB_XXXX.jpg. An equivalent version can be done with other sizes and different formats such as jp2.
- IDENTIFIER.djvu: A nifty open scanned book format created by AT&T Labs and enhanced by LizardTech.com enabling compression and ease of reprinting. This file will also be ocr'd to make the text searchable.(/djvu/bin/documenttodjvu --filelist.txt temp.djvu, /djvu/bin --ocr aatttt.djvu)
- IDENTIFIER_djvu.xml this is an xml version of the OCR output which has the word positions (as a bounding box). this is used for building the djvu file, and is used for searching the flip books, and maybe constructing a searchable pdf in the future.
- IDENTIFIER.pdf: Adobe acrobat format that is derived from the .tif file if present.
- IDENTIFIER.txt.tar.gz or .art.tar.gz: If there are OCR'ed text files associated with each page, these are tarred and gzipped in txt format or art which is sakhr format.
- IDENTIFIER_cover.doc or .sxw:
cover of the book, some in legal and some letter. doc is Microsoft Word, and sxw is OpenOffice.
- IDENTIFIER_xxxx_bookplate.jp2 or .jpg: is the file that has a bookplate that acknowledges those behind creating the digital version. xxxx is the page that it will replace in the access formats.

- IDENTIFIER_meta.xml: This has the catalog data (title, author, publisher, copyright information) and information about the book found while scanning (size, who scanned it) stored in a dublincore-like XML format.
- IDENTIFIER_meta.mrc: This will be the MARC (Machine Readable Cataloging) records for the book which provides the mechanism by which computers exchange, use and interpret bibliographic information and its data elements make up the foundation of most library catalogs used today.
- IDENTIFIER_marc.xml: marcxml format of marc record
- IDENTIFIER_metasource.xml: where the metadata information came from (metadata about the metadata :)).

LEGACY FORMATS: This could be OTIFF | PTIFF | TXT.

- OTIFF: These are the original tiff images of the scans of the books. (to create multipage tifs we used a unix util: tiffcp OTIFF/*.tif aaattt_orig.tif)
- PTIFF: These are processed images (cropped,desqewed,depeckled) from the originaltiffs.
- TXT: These are the text files that have been created by doing Optical Character Recoginiton (OCR) on the tiff images.

* We plan to eventually remove OTIFF|PTIFF|TXT directories.

How do you remove line breaks from the Gutenberg texts?

In Word use find and replace 3 times:

Step 1. Find two paragraph markers - ^p^p

Replace with a neutral character ~ or # or @

Step 2. Find one para markers - ^p

Replace with a single space

(This might take about 10-15 minutes on large files)

Step 3. Put 2 para markers back in - find ~

Replace ^p^p

What is the best way to link to a book?

Every book in the Archive has an identifier. For example, RomeoAndJuliet. To link to the book, you should use the following URL:

http://www.archive.org/download/RomeoAndJuliet

Can I volunteer for the book project?

Volunteers are welcome to come to our San Francisco location during business hours and help make books. These books are given out as calling cards and thank you gifts to help raise awareness to the Internet Archive. Please write to info at archive dot org for more information or to make an appointment.

Questions

What is the Live Music Archive all about?

I noticed a recording I uploaded and marked for 'no lossy formats' somehow had them created (mp3, ogg, m3u, etc...) and they are being hosted here. How can I remove them so only the lossless format is available?

Can I log into an FTP server to download these concerts?

What are SHN files?

What are MD5 files?

Audio

What is the Live Music Archive all about?

This audio archive is an online public library of live recordings available for royalty-free, no-cost public downloads. We only host material by trade-friendly artists: those who like the idea of noncommercial distribution of some or all of their live material. Live recordings are a part of our culture and might be lost in 100 years if they're not archived. We think music matters and want to preserve it for future generations.

The LMA draws strength from the members of etree.org and other online communities of music fans devoted to providing public access to high-quality digital recordings of tradable performances. Typically, recordings are made by the fans themselves. Recordings are preserved in "Lossless" archival compression formats such as Shorten or FLAC (MP3 is not Lossless) for highest quality preservation.

Patrons may download from the LMA with the understanding that the artists still hold their copyrights. All material is strictly noncommercial, both for access here and for any further distribution.

I noticed a recording I uploaded and marked for 'no lossy formats' somehow had them created (mp3, ogg, m3u, etc...) and they are being hosted here. How can I remove them so only the lossless format is available?

If you come across this situation and you are the uploader, click [edit] and then 'Update'. You should see the message "Format Options Updated Successfully". Within 10 minutes the system will create a "_rules.conf" file in the recording's folder. Then, the next time the system performs an automatic sweep looking for changes, it will notice the new rules file and remove the lossy files automatically. The sweep occurs approximately twice a day, so you should see the files removed within 12-24 hours.

How can I listen to SHN files?

How do I burn SHN files to CD as audio tracks?

There's no setlist for this show - OR - The setlist does not match up with the number of files. Should I submit an error report?

What are FLAC files?

What are FFP files?

How can I listen to FLAC files?

How do I burn FLAC files to CD as audio tracks?

Why are there no shows by band X?

What is the status of band X for the Archive?

I'm an artist who would like to be included in the Archive, what do I need to do?

Can I upload concert videos?

The progress of my upload says 'File metadata XML invalid. Waiting for user to correct.' How can I fix this?

How do I upload a show to the LMA?

If you are not the uploader, fill out an error report letting us know that the derivatives shouldn't be there and an admin will remove them when they get to the error report.

Can I log into an FTP server to download these concerts?

Yes, you can log into audioXX.archive.org (where XX is a number), with the username anonymous and use your email address as the password. Each recording will have a link for FTP information that will tell you which number server the show is on, and in which directory.

What are SHN files?

SHN stands for shorten. It is a lossless compression algorithm for digital music. It was developed by SoftSound and it compresses music files to 50-60% of their original size, with no loss in quality. See this FAQ.

What are MD5 files?

MD5 files contain checksums, strings of characters used to uniquely represent a file. These checksums enable users to verify that music files downloaded correctly.

How can I listen to SHN files?

Macintosh: Download and install MacAmp Lite, a multi-format audio player, and then install the Shorten Plugin for MacAmp.

Windows: Download and install WinAmp, a multi-format audio player, and then install the ShnAmp Plugin for WinAmp.

Linux or any other UNIX-based architecture: Download and install the xmms-shn plugin for the XMMS media player.

How do I burn SHN files to CD as audio tracks?

You will first need to convert the SHN files to another format that your burning program is familiar with. The following programs will convert SHN files to WAV files, which can be burned to a CD. More resources are listed in this FAQ.

Macintosh: Download and install Doug Hornig's tool, appropriately titled, Shorten for Macintosh.

Windows: Download and install Michael K. Weise's tool, mkwACT. Or, another good tool is Foobar2000 - make sure you get the "Special" version to have Shorten compatibility!

Linux or any other UNIX-based architecture: Download and install shorten.

There's no setlist for this show - OR - The setlist does not match up with the number of files. Should I submit an error report?

There has been an increasing number of shows uploaded to the Live Music collection without setlist information, or the setlist was not properly matched to the files. When you notice a recording like this, please submit an error report **only** if you have an updated setlist, or you are able to match the files up correctly.

We would prefer that you do not submit error reports letting us know that there is no setlist - tracking down setlists for every concert and matching them up to the recordings is a monumental task that has grown beyond the capabilities of the small group of Archive.org admins. We would like fans that are familiar with each artist's material to help us with this

I have more audio questions...who do I ask?

I have a different source for a show that is already in the archive, should I upload it anyway?

How can I help get bands into the Live Music Archive?

When I download concerts, I constantly get disconnected before the download completes. What can I do to fix this?

What's the deal with WAV MD5 files?

I just uploaded a directory that contained WAV MD5 checksums, is that OK?

My failure email is indicating that the text file failed. What can I do?

When I try to connect to a server via FTP, I get the error "connection timeout." How can I fix this?

Can bands place restrictions on material to be archived?

I just uploaded a

project - in your error report, please give us specific instructions on what changes to make and we will do so.

What are FLAC files?

FLAC stands for free lossless audio codec. It is an open source, lossless compression algorithm for digital music. It compresses music files to 50-60% of their original size, with no loss in quality. More FLAC information can be found on the FLAC sourceforge site and in this etree FAQ.

If you upload FLAC filesets to the LMA, please follow the naming standards to help the checking program here. Directories should be named with .flac16 or .flac24 suffix, not .flac. Otherwise, the program will report failures.

What are FFP files?

FFP files contain checksums, strings of characters used to uniquely represent a FLAC file. These checksums enable users to verify which particular source a file comes from.

How can I listen to FLAC files?

Macintosh: Download and install MacAmp Lite, a multi-format audio player, and then install the FLAC Plugin for MacAmp.

Windows: Download and install WinAmp, a multi-format audio player, and then install the FLAC Plugin for WinAmp.

Linux or any other UNIX-based architecture: Download and copy "libxmms-flac.so" to your XMMS media player input plugins folder.

How do I burn FLAC files to CD as audio tracks?

You will first need to convert the FLAC files to another format that your burning program is familiar with. Windows users can use the FLAC Frontend, to convert FLAC files to WAV files, which are suitable for burning programs. For Macintosh OS X users, Dan Greuel has created a tool called MacFLAC.

Why are there no shows by band X?

We'd like to make sure that a trade-friendly band would not mind having their shows in the Archive for public download. The best way for us to find out is by getting permission from a band representative or by the band's having an explicit policy that covers this type of site. If there are no shows by the band, either we don't have enough of this information to go forward with archiving, they have declined participation, or we are ready to accept shows but no one has uploaded anything yet. You can check on the status of bands in the Archive here (and see next FAQ question).

Trade-unfriendly bands will not be found in the Archive, nor will otherwise trade-friendly bands who have declined to have material archived here.

Bands, see other relevant FAQs here and here. Patrons, see more about how you can help here.

What is the status of band X for the Archive?

You can check on the status of a band relative to the Archive on the Trade-Friendly Band Information page. We have 3 categories:

show and all the files fail the MD5 check, what's the deal?

Where have all the Dave Matthews Band concerts gone? Will they be back?

Why is there no Phish? What about Widespread Panic?

I used to use a download manager and now it stopped working. What's the deal?

How do I help make corrections to shows?

What file formats are accepted for contributions to the Live Music collection here?

I like adding concerts. Do you have a preference on the way I put in information?

Good FTP clients for downloading music

What's the deal with magic number errors?

Do you provide an RSS feed of new updates to the LMA?

What does the "Transferred by"

May be Archived- Band sections have been activated by Archive admins. Shows can be hosted here to the extent permitted by the band. Click on the band name and then their Notes link to see what limits they may have placed on taping, trading or archiving.

Pending- When a patron adds a fresh entry for an an additional trade-friendly band, the new band section is placed in the Pending category, with default status "Not contacted" in its Notes. Admins will update the contact status based on information that people send to etree at archive dot org.

Opted Out- Some bands that may be otherwise trade-friendly may have explicitly said, "No, thanks" to our project. We respect their wishes. We still keep notes of their taping/trading policies for reference.

If there is no listing for a band here, maybe they are not trade-friendly, or no one has thought to create a pending section for them yet. In the latter case, chances are no one has tried contacting the band yet (or if a person has tried, he hasn't told us about it yet (email etree at archive dot org)).

Bands, see other relevant FAQs here and here. Patrons, see more about how you can help here.

I'm an artist who would like to be included in the Archive, what do I need to do?

We'd love to have you! Just write to us at etree at archive dot org in English giving some kind of permission for us to archive your shows for public download and noncommercial, royalty-free circulation. It does not need to be a formally worded declaration, and can come from anyone you feel has the "say-so." We just need to be clear on how you feel about the project. We will put relevant quotes in our Band Information section, along with a link to your official website.

If you happen to make your own Band Information section, it is still necessary to email us in order to activate the section. We want to be sure that the desired listing really is coming from you (more discussion here).

You can give as much or as little scope for archiving as you like. Some bands place limits on what can be hosted, and we can accomodate those. Archive Curators, volunteer fans who have proven to be in line with the spirit of this archive, will attempt to screen contributions for OK'ed material only.

At the same time you give the go-ahead, feel free to pass along any notes or policy links on your general taping/trading stance as well. You don't need to have a formal written or posted policy before inclusion, but we'd like to know how you feel about the topic.

Besides fans' sending their copies of your shows, you can also prepare and upload your own live recordings to the Archive, if you like. In fact, if you'd like to limit your material to selected contributions from you only, please just let us know.

If you have any questions about the project, please ask us anytime at etree at archive dot org.

Can I upload concert videos?

At this time, video uploads are not being accepted, namely because most of the bands archived prohibit the video taping of their shows. Moreover, unlike audio, where we actually have a shot at archiving the vast majority of any given band's live concerts (in very high quality format), video is scarce and, unless made by the artist (in which case, it's typically for commercial purposes), is not of particularly good quality.

The progress of my upload says 'File metadata XML invalid. Waiting for user to correct.' How can I fix this?

field mean?

Why don't I get an email when my uploads fail MD5 checksums?

How can I get iTunes to create a new playlist when I stream MP3s?

How to play OGG files?

What is the Laszlo Flash widget?

What are the options for downloading a full recording?

What are the options for streaming a full recording?

What are the P2P Options links?

My in-progress upload says ' No metadata describing files found. Waiting for user to enter metadata' - what do I do?

I'm having trouble with a 'blank'/corrupted ZIP file. What do I do?

When I try to import my upload, I am getting the error message 'This directory or files contained within the directory have illegal characters in the

This is typically caused by illegal symbols being used somewhere in the information that was put into one of the forms submitted with the show (either the import form or "File Options"). Double check that the only characters being used are those visible on a standard 104 key keyboard. More information and a few examples are here.

If you have trouble finding the cause, please post to the forum for help. An admin will have to resubmit the recording for another try, so please send an email including a link to the recording to etree AT archive DOT org if you believe you have cleared the issue.

How do I upload a show to the LMA?

Be sure that you are logged in as an Internet Archive member, then click here. The directories and files you upload should be named in accordance with etree.org standards, which can be found here. Additionally, to facilitate the importing of shows, name the top directory like this: bbyyyy-mm-dd.source.shnf
Each show must be in its own, named directory in order to be seen by the importing system.

[Special Admin Note for uploads containing a number in the band abbreviation prefix: In these cases only, please add a dash between the prefix and date in the directory name (foo4tet-2002-02-02.shnf) so the import software will work. Usually, directory names must not have the dash (footet2002-02-02.shnf) to be imported. Numbers in the abbreviation are special cases.]

I have more audio questions...who do I ask?

Feel free to email etree at archive dot org with any questions, and we'll do our best to post the answers here as soon as possible. Also, the message board is a great resource; with so many kind, knowledgable folks out there, you can often get a speedy answer to your question.

I have a different source for a show that is already in the archive, should I upload it anyway?

Yes! In keeping with the nature of this Archive, it is appropriate for multiple sources of the same show to be available for download. When you upload the new source, be sure to name the source in the show's top level folder to avoid confusion. Some bands do place limits on the types of sources allowed (such as soundboard recordings), so please check the policy for any given band.

How can I help get bands into the Live Music Archive?

If you know of a trade-friendly live-performing band that is a good candidate for the Archive, you can initiate contact. Some tips and letter templates can be found here. When you write, make it clear you are asking about the Live Music Archive at archive.org. Don't just ask about their general taping/trading stance. We want bands to know what's up.

Next, follow up with a message to etree at archive dot org. Mention when you tried to contact the band and what contact point you used. These are important in order to update our contact records. You can create a new "pending" section for the band on the Band Information page if one isn't listed there yet. Admins will update the contact status in that section based on the message you send us.

If you receive a reply from the band, positive **or** negative, send a complete copy of the email, complete with its sender's address, to etree at archive dot org. It's a good idea to send a copy of what you asked them as well (if not quoted in the reply), since it will give context to the answer. We need to have full info in hand in order to set up the band appropriately in the Archive, and we may need to contact them for followup questions.

name' What does this mean?

Can I upload live recordings that were broadcast on XM Radio or Sirius Satellite Radio?

The Grateful Dead is here, when will we see Jerry Garcia Band recordings?

How do I download the files? My browser just starts playing the file when I click the links. I'd like to save them for later.

Regarding removing the lossy files ... I edited my show, checked the box to remove them and clicked update. Now when I click update again, the box is still not checked. Why?

About Grateful Dead concerts on the Archive

The upload instructions require a 'FLAC Fingerprint' file with my recording - how can I create this?

I've got a great 'filler' for the recording I am about to upload to the collection - should I include it?

If you are hesitant to make contact yourself, you can mention the band to Archive admins (send email to etree at archive dot org) and they can try a contact as time permits. To help out, first add the band to the Trade-Friendly Band Information page if it is not listed already.

When I download concerts, I constantly get disconnected before the download completes. What can I do to fix this?

If you are downloading large files from the collection with your Internet Browser and experience trouble maintaining a reliable connection to our servers, we recommend that you use FTP instead (File Transfer Protocol). Almost all FTP clients will allow your download to resume if the connection get broken. In addition, many will allow you to set up a queue of files that will automatically reconnect and resume when it notices that the transfer has stopped.

For a list of recommended free FTP clients, see this FAQ.

What's the deal with WAV MD5 files?

MD5 cheksums files are not exclusive to SHN files, in fact, an MD5 checksum can be used to ensure the accuracy of any data file (e.g. .doc, .mp3, .mpeg). Some seeders produce MD5 checksums for their WAV files, as well as the SHN files. This is just an extra level of protection to ensure exact copies of the original WAV files are being burned from the SHN files. Checking a WAV file with a MD5 cheksum is no different than checking a SHN file. If you use mkwACT, you can just right click on the wav MD5 and choose "verify."

I just uploaded a directory that contained WAV MD5 checksums, is that OK?

The WAV MD5 checksums are ignored by our robot and will not cause problems for your recording.

My failure email is indicating that the text file failed. What can I do?

Unlike FLAC or SHN, text files do not translate identically from 1 platform to another. Since the archive.org servers run Unix, text files created on other Operating Systems will fail their MD5check. We recommend uploaders remove any text files from their MD5's if they are having this problem.

When I try to connect to a server via FTP, I get the error "connection timeout." How can I fix this?

This error is caused by a setting in your FTP client, that limits the amount of time your FTP client will wait for a server to respond. In order to fix this problem, increase the "server timeout" setting; a setting of 180 seconds should be enough time to connect to the archive.org servers. If you use SmartFTP, the "server timeout" setting can be found in Tools > Settings > Connections.

Can bands place restrictions on material to be archived?

Yes. Each band can tailor the extent of their permission to the Archive. We quote the band's wishes in their section of the Band Information page. Here are some examples of special restrictions bands have requested.

We have a contribution system set up to accomodate individual bands' requirements. During the upload process, contributors are urged to double check the band's policy notes at different stages. Archive Curators, volunteer fans who have proven to be in line with the spirit of this archive, will attempt to screen contributions for OK'ed material only. In addition, access to a particular item can be removed if it becomes restricted later (for

Where can I find other recordings by [trade-friendly band] that aren't in the collection?

example, a date newly chosen for commercial release must be removed under some band's policies).

Bands, please contact us at etree at archive dot org anytime to let us know how we can work with you to make things happen.

I just uploaded a show and all the files fail the MD5 check, what's the deal?

Check to make sure the FTP program you used to upload the files is set to "binary" mode. If you try to upload .shn or .flac files in "ASCII" mode the files will fail the MD5 check. ASCII is the standard format for encoding plain text files (actually a subset of binary), while binary is used to encode almost all other types of files. More information on binary vs. ASCII can be found here.

If this does not solve the problem, be sure that all the file names in the MD5 file match the .shn file names. Be aware that the UNIX system the Internet Archive runs on is case-sensitive.

If you upload FLAC filesets to the LMA, please follow the naming standards to help the checking program here. Directories should be named with .flac16 or .flac24 suffix, not .flac. Otherwise, the program will report failures.

Where have all the Dave Matthews Band concerts gone? Will they be back?

At the request of the band's management and as a result of the band's 2003 policy change, Dave Matthews Band concerts (as well as Dave Matthews solo concerts and Dave and Tim shows) have been removed from the Internet Archive. We're very sorry about this unfortunate turn of events but feel like it is important to honor the wishes of the band and its management.

For more information and discussion see this post:
http://www.archive.org/iathreads/post-view.php?id=3670

Why is there no Phish? What about Widespread Panic?

Phish has decided not to participate in the Archive at this point in time. Their official response can be viewed here.

Similarly, Widespread Panic has opted out of the project for the time being. They were last contacted on 11/9/2004. Their response can be seen here.

I used to use a download manager and now it stopped working. What's the deal?

Download managers increase your download speed by connecting to the server multiple times. Doing this does not significantly increase download speeds but dramatically hurts the performance of the server. If you wish to use queue to download from the HTTP servers, be sure you set your download program to only use one connection at a time.

How do I help make corrections to shows?

Sometimes people make typos or other mistakes on uploads, or leave gaps in info that can be filled in later. You can help supply good information for archived items. Here is the current best method to submit corrections:

If you uploaded the show, you can make the changes to the details page yourself. Make sure you are logged in as the user who uploaded the show and go to the details page of the show you are trying edit. Click on the "edit" link next to the band name at the top of the details page and you will be able to edit the show details including venue, location, source, setlist, etc. Be aware that editing these field will only change the show details of the Archive's database. If you need to make changes to the text file, please follow the steps below and contact an archive administrator.

If you did not upload the show, please click the 'Report Error' button and state concisely and precisely what the problem with that particular show is (If the problem is a missing setlist, please see this FAQ). If there are one or more missing or broken files that you can provide, please re-upload and re-import the entire show under a new directory name, and then hit 'Report Error' for the old, broken show, asking for that show to be removed.

What file formats are accepted for contributions to the Live Music collection here?

Currently, the Live Music Archive will only accept audio files in 2 formats: Shorten (.shn) and FLAC (.flac). Please Note that MKW files (.mkw) are *NOT* an acceptable file format for your contributions because they lack cross-platform compatibility (Mac users are unable to play or decode MKW files)

In addition, please do not upload the lossy files (MP3 or OGG) next to your FLAC or SHN format files - the Archive creates those files automatically, provided that the contributor agrees to having them available. This ensures that all the files here have uniform quality options selected.

Please follow Etree.org's Seeding Guidelines when preparing your contributions for addition to the collection. Pay particular attention to the Naming Standards section. If your contribution does not follow the Naming Standards they set forth, it will be frozen before becoming available to the public and you will be contacted to fix the filenames.

I like adding concerts. Do you have a preference on the way I put in information?

First of all - thank you so much for contributing to the Archive. Yes, here are some guidelines that will help us maintain good records for each concert.

- Do not include HTML in the source and lineage fields.
- Do not repeat information in the notes fields (such as source information, or number of discs). Only include information in the notes fields that is not already in any other field.
- If at all possible, keep absolutely nothing but song names in the setlist (even things like disc splits, set splits, etc. should not be in this field). If possible, putting all song names on one line, separated by commas is wonderful.
- Do not fill in unknown field with questions marks or N/A - just leave them blank. The exception to this guideline is the setlist and source fields (which are mandatory) - in the event that this information is not known, simply write "unknown".

Once again, thank you so much!

Good FTP clients for downloading music

While HTTP is more popular, some users find their downloads are much more stable with FTP. Here are a few FTP clients that users have found to work well:

For Windows Users

- Filezilla (support open source!)
- SmartFTP
- FTP Commander

For Mac Users

- Cyberduck (support open source!)

- Transmit
- Fetch
- Interarchy

What's the deal with magic number errors?

If you get a magic number error when listening to or decoding a SHN file, the SHN file is most likely corrupt. First, make sure the SHN file passes MD5 verification; if it does not, redownload the file. If the file passes MD5 verification and you are still getting the magic number error, leave am error report via the show details page noting the magic number error and which track the error occurs on. Hopefully others who have download the show will confirm or deny the error. If the error occurs for all downloaders, the seeder will be contacted to provide a new, uncorrupted track. Please note that there is nothing the Internet Archive administrators can do about a magic number error, becuase the only solution to the error is re-encoding the SHN file from the original WAV file.

Do you provide an RSS feed of new updates to the LMA?

Indeed! The URL of the feed is http://www.archive.org/services/collection-rss.php?mediatype=etree&collection=etree You can plug this into a front end like AmphetaDesk (available at: http://www.amphetadesk.com)

What does the "Transferred by" field mean?

This field indicates the person who did the original DAT/MD/Cassette to WAV conversion. Also, note that in the case of recordings made directly to laptops there is no transfer.

Why don't I get an email when my uploads fail MD5 checksums?

The system currently only sends emails when MD5 files are included. This means that, if you're uploading FLAC files, you still need to generate and include an MD5 file if you want to receive informational emails about the failures.

A recommended tool for creating these files is MD5summer. Please note that before uploading the MD5 created with this tool you should open the MD5 in a text editor and remove the top 3 lines so the first signature is now flush with the top of the file.

How can I get iTunes to create a new playlist when I stream MP3s?

As an iTunes user, you might have noticed that iTunes loads the Archive's streaming MP3s (M3U files) into your library, and subsequentially the files get shuffled and are out of order. We have come up with a solution to this problem.

Step by step instructions:

- Download this AppleScript application.
- Copy the m3uPlayer application to a permanent location
- Choose some recording in the Archive to stream. This will cause an M3U to download to your default download folder (typically your desktop).
- Click on the downloaded M3U file, hit option-I (or option-click and select Get Info). Change "open with" from ITunes to m3uPlayer (locate it wherever you saved it)
- Click change all so that all future M3U files will open this way

That's it! If you have trouble, post a message to this forum

Thanks to http://www.balnaves.com/archives/000092.php for the code, instructions, and inspiration

How to play OGG files?

On the mac, there is a free component to ogg-ify itunes. Also vlc plays it. http://www.macosxhints.com/article.php?story=20020424233612407 Other info to follow.

What is the Laszlo Flash widget?

The Laszlo Flash widget is a program which can be embedded in a web page to play MP3 files. It requires Macromedia Flash.

Currently the widget does not work in IE on the Macintosh.

What are the options for downloading a full recording?

Lossless: A ZIP file containing Shorten files or Flac files. Unlike formats like MP3, lossless formats are true to the original - there is no degradation in quality.

Hi-Fi: A ZIP file containing MP3 files encoded with a variable bit rate to deliver high quality at roughly 160kilobits per second.

Lo-Fi: A ZIP file containing MP3 files encoded at a constant bit rate of 64 kilobits per second. These files are ideal for users with slower Internet connections.

FTP: Using an FTP client you can log in to the Archive's servers and download all of the files at once.

What are the options for streaming a full recording?

Hi-Fi: An MP3 playlist, readable by most players, that has the addresses of MP3 files encoded with a variable bit rate.

Lo-Fi: An MP3 playlist, readable by most players, that has the addresses of MP3 files encoded with at a constant bit rate of 64 kilobits per second. These files are ideal for users with slower Internet connections.

What are the P2P Options links?

The P2P, or peer to peer, option takes advantage of a technology called "magnet links" which distributes the file and may speed up your download. If you have a peer to peer client (such as Shareaza, Kazaa, Gnutella, LimeWire, Morpheus, Bearshare, Xolox, etc.) installed that is configured to handle Magnet links (most do by default), clicking on one of the links under the “Download via P2P” option will automatically launch your P2P client and download the appropriate file. Internet Archive uses the power of peer to peer and magnet links to more efficiently and economically distribute files with the full approval and permission of the artists who created the files.

You generally have three options for downloading, depending on the quality you want and the speed of your connection. The higher the quality - the bigger the file - the longer the download time.

Lossless: A ZIP file containing Shorten files or Flac files. Unlike formats like MP3, lossless formats are true to the original - there is no degradation in quality.

Hi-Fi: A ZIP file containing MP3 files encoded with a variable bit rate to deliver high quality at roughly 160kilobits per second.

Lo-Fi: A ZIP file containing MP3 files encoded at a constant bit rate of 64 kilobits per second. These files are ideal for users with slower Internet connections.

My in-progress upload says ' No metadata describing files found. Waiting for user to enter metadata' - what do I do?

There are 2 XML files that get created during the import of any recording in the collection:

showfolder_meta.xml
showfolder_files.xml

The first file gets created when you submit the import form to the collection. If that file does not exist, you can create it by editing the details page and clicking Update.

The second file gets created by filling out File Options. Just click the link on the left side of the details page and fill out the form as accurately as you can.

If either of these files are missing, your Contribution may give you this message. Please note that once the files get created, it takes 5-10 minutes before the system notices them and moves on to the next stage.

I'm having trouble with a 'blank'/corrupted ZIP file. What do I do?

There are a variety of problems that may be causing this. Here are a couple of the most common. If you have a Mac running OS X, the default unzip utility (Stuffit) does not deal well with those Archive ZIP files that are 'compressed on the fly'. You may see an empty directory - if so, then try downloading Zip Tools for Mac OS X and using the drag and drop software within that to unzip your download. [Make sure you save your download to your desktop before trying things on it.] If you're having any trouble with downloads timing out or being incomplete, especially on Windows, then you may be able to use download managers such as GetRight. These will restart your download if it fails. However, some 'ZIP on the fly' downloads don't play well with download managers. If you find that to be the case, the safest thing to do is to download each track individually in a download manager, or use FTP to log in.

When I try to import my upload, I am getting the error message 'This directory or files contained within the directory have illegal characters in the name' What does this mean?

The folder or files that you sent to the upload server have characters in the name that cause problems with the system - so we have designated them "illegal". This includes the following characters in the name:

*(){}[]/\$%@#^&|<>'~`!?

In addition, files and folders may not have spaces in their names.

You will need to remove any of these illegal characters in order for the system to accept your contribution.

Can I upload live recordings that were broadcast on XM Radio or Sirius Satellite Radio?

At this point in time, Archive.org cannot host recordings that were broadcast over either of these services. Subscribers have informed us that they were required to sign a "Terms of Use" document that forbids the recording/hosting/rebroadcasting of any material received from these services. Until we hear otherwise, these recordings cannot be hosted here.

The Grateful Dead is here, when will we see Jerry Garcia Band recordings?

The taping policy of the Grateful Dead does not extend to recordings of Jerry Garcia Band. Jerry's solo work is controlled by his estate. Representatives have said No to the idea of hosting shows in the Live Music Archive.

How do I download the files? My browser just starts playing the file when I click the links, I'd like to save them for later.

To download the files on a PC, right click the link to the file, and select "Save Target As". On the Macintosh, hold the button down while the mouse is over the link, and when the menu comes up, select "Save Target As".

Regarding removing the lossy files ... I edited my show, checked the box to remove them and clicked update. Now when I click update again, the box is still not checked. Why?

It takes 2-10 minutes for your checking of that box to 'stick' ... see this discussion board post: http://www.archive.org/iathreads/post-view.php?id=22816 for an explanation of why.

About Grateful Dead concerts on the Archive

Audience-made Grateful Dead concert recordings are available as downloads while available soundboards are accessible in streaming format.

The Grateful Dead will soon be separated from the Live Music Archive into its own collection to avoid confusion about lossless availability. The metadata and reviews for shows and recordings, even those not available for regular download, will remain available for those who maintain direct links. No filesets have been deleted from the Archive; certain items are simply not public now. Prior to our completing the changes, text files are easily referenced at a separate database.

At this time, the Grateful Dead collection is not open to public uploads. The Grateful Dead Internet Archive Project (GDIAP) will continue its direct management of this collection for the time being.

As far as we know, there has been no change to standard GD fan trading. It is common for bands to have policies that differ between fan trading, versus archiving here.

The upload instructions require a 'FLAC Fingerprint' file with my recording - how can I create this?

In Windows:

1. Open FLAC Frontend
2. Drag all of the FLAC files of your recording into Flac Frontend window. (you can also use the "add" button to do this)
3. Click the "Fingerprint" button.
4. Save the fingerprint file with a name like this: bandYYYY-MM-DD.ffp

I've got a great 'filler' for the recording I am about to upload to the collection - should I include it?

A 'filler' is music from a different performance in addition to the main recording, typically used to fill up extra space on a CD. Sometimes the filler is a different artist, other times it is the same artist, but a different show and date.

While this is convenient for burning full CD's, it is not appropriate to include fillers on recordings here in the collection since they get filed under the artist and date of main performance. Please only include the performance for the artist and date you are importing. Fillers should be filed under their own entries elsewhere in the collection.

Where can I find other recordings by [trade-friendly band] that aren't in the collection?

If the artist is OK with Internet trading, you may be able to find downloadable recordings through http://bt.etree.org or http://www.furthurnet.net. Also, check http://db.etree.org to find people who have copies of shows and who may be willing to trade. Etree.org has additional trading forums at http://forums.etree.org Lastly, you can check out a band's own fan forums and mailing lists. Good luck!

In contrast, the Live Music Archive forum at the Internet Archive is *not* a good place to post about trades, or to ask for shows that are not yet archived here, whether or not the band presently has a section here. Moderators may delete these posts. More posting etiquette tips for that forum are here.

Questions

What's the significance of the Archive's collections?

What is the nonprofit status of the Internet Archive? Where does its funding come from?

Does the Archive issue grants?

How do I contact the Internet Archive?

What is the file layout for items?

The Internet Archive

What's the significance of the Archive's collections?

Societies have always placed importance on preserving their culture and heritage. But much early 20th-century media -- television and radio, for example -- was not saved. The Library of Alexandria -- an ancient center of learning containing a copy of every book in the world -- disappeared when it was burned to the ground.

What is the nonprofit status of the Internet Archive? Where does its funding come from?

The Internet Archive is a 501(c)(3) nonprofit organization. It receives in-kind and financial donations from a variety of sources, including, but not limited to: Alexa Internet, the Kahle/Austin Foundation, the Alfred P. Sloan Foundation, the William and Flora Hewlett Foundation, and you.

Does the Archive issue grants?

No; although we promote the development of other Internet libraries through colloquia, and other means, the Archive is not a grant-making organization.

How do I contact the Internet Archive?

General questions about the Internet Archive should be addressed to info at archive dot org. For technical assistance and information please see the FAQs and search the forums.

What is the file layout for items?

```
==========================================
== For web crawl files (ARC format)
Containing dir of item:
/[drive]/items/[identifier]
user.group    ==> root.root
permissions   ==> 0555 (ugo+rx, ugo-w)

File in item:
/[drive]/items/[identifier]/[file]
user.group    ==> web.web
permissions   ==> 0440 (ug+r, o-r, ugo-wx)
```

```
========================================
== For all other items and files
Containing dir of item:
/[drive]/items/[identifier]
user.group   ==> root.root
permissions  ==> 0555 (ugo+rx, ugo-w)

File in item:
/[drive]/items/[identifier]/[file]
user.group   ==> root.root
permissions  ==> ugo+r, ugo-w
```

Questions

What software can play the downloaded movies?

What other software and equipment can I use?

Why does my computer hang or give me errors when I try to download or play a movie?

Can I download movies via FTP?

Why do I get errors when I try to play a movie?

Can I use these movies in FinalCutPro -- in the Quicktime format?

Sometimes when I play a movie, the video is choppy or very pixelated. Why is that?

Why does this site only offer such high-resolution copies that can't be easily played by everyone?

How can I search for

Downloading and Playing Movies

What software can play the downloaded movies?

For Windows:
MPEG1 (VCD) most players;
MPEG2 (DVD) freeware VLC, shareware player from http://www.elecard.com, or for-pay quicktime6 plugin: http://www.apple.com/quicktime/products/mpeg2playback/ ;
MPEG4 quicktime6 from www.apple.com

For Mac OSX and 9:
MPEG1 (VCD) most players;
MPEG2 (DVD) freeware VLC (http://www.videolan.org/) the for-pay quicktime6 add-on (see http://www.apple.com/quicktime/products/mpeg2playback/).
MPEG-4 Quicktime6.

some mac users have written to us suggesting MPlayer (OS X), BBDEMUX, and MPEG2DECX -- free on www.versiontracker.com.

Please contact us at info at archive dot org if you have information about players.

What other software and equipment can I use?

You can try any of various players available for downloading. In addition, for better performance, you can add decoder board hardware to your computer.

PLAYERS: Try the evaluations of players at coolstf.com. Unfortunately, because computers can be set up in so many different ways and because different standards exist for playing video, finding a player that will work is a hit-and-miss process. If you have trouble playing the movies, try another player, post your question on our discussion list (moviearchive-subscribe@yahoogroups.com), or write to us at info at archive dot org.

Besides freeware VLC (http://www.videolan.org/) and Quicktime, see above for other Macintosh players. See http://www.apple.com/quicktime/ for the free QT6 player for MPEG4 and the for-pay quicktime6 add-on for MPEG2 (DVD). We will update this page as players become available. Please contact us at info at archive dot org if you have information about Macintosh-compatible players or decoder boards.

HARDWARE: Using a decoder board shifts all the responsibility for decoding the video into hardware and lets you watch full-screen, full-motion video on just about any PC running Windows. Most decoder boards also include a video-out jack so that you can watch the output on a TV monitor or even record a film directly to a VCR. The Archive can't take responsibility for recommending any hardware solutions, but we've been happy with the Sigma Designs RealMagic Netstream 2000 card (for Windows machines).

At present, we know of no hardware solutions for the Macintosh. Please contact us at info at archive dor org if you have information about hardware for that platform.

movies?

How did you digitize the films?

An article on re-coding Prelinger Archive films to SVCD so you can watch them on your DVD player.

Where can i find more information on how to play movies on the macOS?

Where can i find more information on how to play movies on other operating systems?

Is there a discussion list for technical issues?

How can I use the MPEG2 files to make my own movie?

What about streaming the movies?

What is an editable file?

What is the "EU" link?

How do I make DVD's from Internet Archive movies?

Why does my computer hang or give me errors when I try to download or play a movie?

1. There is heavy traffic to our site. If you experience a delay, please try again later or at a different time of day.

2. You're behind a firewall and the firewall software is attempting to modify incoming bits. Contact your network or firewall administrator (to test, try downloading from outside the firewall first).

3. Your Internet connection went down or timed out. Check with your ISP or network administrator to see if there's a special policy about keeping a connection live.

4. If your browser seems to hang after a "100% downloaded" message, check to see that you have sufficient hard-disk and TMP disk space. Rebooting the system sometimes helps.

If you still have trouble, post your question on our discussion list (moviearchive-subscribe@yahoogroups.com) or write to us at info at archive dot org.

Can I download movies via FTP?

Yes — via anonymous FTP.

On the details page for a film, look for the FTP link next to "all files" on the left side of the page. You can then FTP to the server indicated and navigate to the directory and download the files you want.

Why do I get errors when I try to play a movie?

1. You are trying to play an MPEG-2 file on a platform other than Windows or Linux. At present, you need the freeware VLC (http://www.videolan.org) or the for-pay quicktime6 add-on to play MPEG-2 files on the Macintosh. We will update this page as players become available. Please contact us at info at archive dot org if you have information about players that work on platforms other than Windows.

2. Your player tried to stream the movie. (You may get a display of odd-looking text in the browser involving "application/octet-stream.") Try downloading the file again, but right-click the link to save the file to disk so that the player won't try to stream it. Our files will not stream.

3. Some conflict exists between your computer's configuration and the player you're using. Unfortunately, because PCs can be set up in so many different ways and because different standards exist for playing video, finding a player that will work is a hit-and-miss process. Try Rod Hewitt's evaluations of a number of players.

If you still have trouble, post your question on our discussion list (moviearchive-subscribe@yahoogroups.com) or write to us at info at archive dot org.

Can I use these movies in FinalCutPro -- in the Quicktime format?

You can Re-encode Mpeg2 movies to quicktime for FinalCut Pro using Cleaner5.0.2 using the following settings. There is no de-interlacing, so you don't lose anything. The files increase in size 10 fold, so make sure you have enough HD space. This procedure gives you quicktime movies suitable for use with final cut.

Cleaner 5 -- if you don't have 5.0.2, you can download.0.2 from the terran.com site.
- output > quicktime, .mov

- tracks > process everything
- image > image size constrain to 720*480, display size normal, do not deinterlace, field dominance-SHIFT DOWN
- encode > apple DV-ntsc codec, millions of colors, spatial quality 100%, frame rate, same as source
- Audio > we're still not sure about which is best. start with mono, 48kb, experiment.

Some have had good results with their decoder cards. compare a few films done both ways on a good monitor with scopes and see which method is best.

If you still have trouble, post your question on our discussion list (moviearchive-subscribe@yahoogroups.com) or write to us at info at archive dot org.

Sometimes when I play a movie, the video is choppy or very pixelated. Why is that?

When we encode the video in MPEG-4, we first reduce its size to 320 x 240 — a quarter of the resolution of NTSC video. We then translate it at 350 kbps, which is really borderline for that resolution. You see errors occasionally because there simply isn't enough bandwidth available, so the MPEG-4 encoder either drops frames — resulting in jerky or choppy motion — or drops macro blocks — resulting in blurred or pixelated video. That is the price we pay for the small file size — 80 MB for a 1/2-hour clip is really very small in the digital video world.

Why does this site only offer such high-resolution copies that can't be easily played by everyone?

MPEG-2, a widely accepted standard for video playback, is a full-screen, full-motion compressed video format, most familiar to consumers as the format underlying the digital video disc (DVD) and digital satellite television (DBS). The image quality of MPEG-2 encoded files is far superior to files encoded in other formats, especially low-bandwidth streaming video.

The Archive's goal is to make high-quality video copies of the movies available to everyone. Unlike the thumbnail (less than full-screen, full-motion) quality offered by many sites, whose movies are usually subject to many rights restrictions, our video files can actually be downloaded, recorded to videotape, and displayed on TVs or monitors or even projected. We have sought to prove that the Internet can be a delivery medium for high-quality video without payment or restrictions. The high quality of the video files we offer makes them too large to stream, but technology marches on and this may be possible within the next few years.

How can I search for movies?

You can search from the navigation bar on any page in the Moving Images section of the site. You can also perform a more sophisticated search from the advanced search page.

How did you digitize the films?

Almost all the films in the Internet Moving Images Archive are held (by Prelinger Archives) in original film form (35mm, 16mm, 8mm, Super 8mm, and various obsolete formats like 28mm and 9.5mm). Films were first transferred to Betacam SP videotape, a widely used analog broadcast video standard, on telecine machines manufactured by Rank Cintel or Bosch. The film-to-tape transfer process is not a real-time process: It requires inspection of the film, repair of any physical damage, and supervision by a skilled operator who manipulates color, contrast, speed, and video controls.

The videotape masters created in the film-to-tape transfer suite were then digitized at Prelinger Archives in New York City using an encoding workstation built by Rod Hewitt.

The workstation is a 550 MHz PC with a FutureTel NS320 MPEG encoder card. Custom software, also written by Rod Hewitt, drove the Betacam SP playback deck and managed the encoding process. The files were uploaded to hard disk through the courtesy of Flycode, Inc.

The files were encoded at constant bitrates ranging from 2.75 Mbps to 3.5 Mbps. Most were encoded at 480 x 480 pixels (2/3 D1) or 368 x 480 (roughly 1/2 D1). The encoder drops horizontal pixels during the digitizing process, which during decoding are interpolated by the decoder to produce a 720 x 480 picture. (Rod Hewitt's site Coolstf shows examples of an image before and after this process.) Picture quality is equal to or better than most direct broadcast satellite television. Audio was encoded at MPEG-1 Level 2, generally at 112 kbps. Both the MPEG-2 and MPEG-4 movies have mono audio tracks.

To convert the MPEG-2 video to MPEG-4, we used a program called FlasK MPEG. This is an MPEG-1/2 to AVI conversion tool that reads the source MPEG-2 and outputs an AVI file containing the video in MPEG-4 format and audio in uncompressed PCM format. We then use a program called Virtual Dub that recompresses the audio using the MPEG-1 Level 3 (MP3) format. This process is automated by the software that runs the system.

An article on re-coding Prelinger Archive films to SVCD so you can watch them on your DVD player.

See http://www.moviebone.com/

Where can i find more information on how to play movies on the macOS?

See above

Where can i find more information on how to play movies on other operating systems?

For more details, troubleshooting, and how to play movies on other operating systems, see this how to page.

Is there a discussion list for technical issues?

Yes — our list is about both technical issues and movie content. You can subscribe at moviearchive-subscribe@yahoogroups.com.

How can I use the MPEG2 files to make my own movie?

This has been challenging in the past, but we are told that Final Cut Pro on Mac OS-X 10.2 (jaguar) will import the MPEG2 file with the optional MPEG2 plugin module (http://www.apple.com/quicktime/products/mpeg2playback/) Please send a note to moviearchive@yahoogroups.com if it does not.

What about streaming the movies?

You can watch the movies without downloading using RealPlayer from Real Networks (www.real.com). We support two bitrates: 32Kbps-192Kbps for modem and ISDN users plus 256Kbps-450Kbps for DSL and cable-modem users.

To stream MPEG4 files you will need to use QuickTime.

What is an editable file?

An editable file is a file which can be downloaded and used in an editing program. The MPEG-4 are the highest bitrate versions we could do with the linux mpeg-2 to mpeg-4 conversion tools we use. These files can be read directly into FinalCut-Pro from Apple, and can be converted to mov using Quicktime-pro and read directly into iMovie from Apple.

What is the "EU" link?

These are links to download files from a mirror in Europe. These are often very fast.

How do I make DVD's from Internet Archive movies?

The following was posted in the Internet Archive forums. You can view the entire thread here: http://www.archive.org/iathreads/post-view.php?id=26467. If you have further information to add, please email us.

Excellent resource websites for DVD creation and video file format conversion:

http://www.doom9.net
http://www.videohelp.com

Before we get started, you should know that some DVD players will actually play MPEG-2 files without having to go through all the hassles listed below. You just burn the MPEG-2 or MPEG-1 file to a CD-R or DVD-R and the DVD player will automatically know how to play it. I picked up such a DVD player at a local department store for less than $50. Here is link to a list of DVD players will play MPEG-2 files: http://www.videohelp.com/dvdplayers.php?DVDname=&Search=Search&mpegiso=1&dvdmpegiso=1

Also, you really shouldn't have to do lots of converting to get these files on a DVD. For example, converting the files to a Quicktime DV stream and then back to an MPEG-based VOB uses a lot of time and degrades the quality of the video. Ideally, the software you use should know how to handle an MPEG-2 file without having to recompress the file.

There are a couple of ways to make a DVD from the MPEG-2 files that are available on the Internet Archive -depending on what software you have available. Here are the basic steps:

1) Download the MPEG-2 file. This will be the best quality video file since it has the least compression and has full resolution (like 720 x 480, 704 x 480 or 352 x 480). Consequently, this file will be big - usually over a couple of gigabytes (GB) in size - and will take several hours to download. I recommend a fast internet connection (DSL, Cable or faster) and software that will resume downloading if the process is interrupted.

2) Create the accompanying DVD files. To make a DVD from MPEG-2, you'll need a program that will make the appropriate files needed by a DVD player to properly play a disc. There are a few that I have worked with before listed below. But first let me explain a bit about the DVD burning process.

If you ever looked at a DVD in a computer, you'll see a VIDEO_TS folder. In that folder, you'll see a bunch of VOB, IFO and BUP files. In general, the VOB (Video OBject) files contain the video and audio streams and menu graphics. The IFO (InFOrmational) files contain navigational and information about the streams in VOB files. BUP (BackUP) files are backups of the IFO files. So, in order to make a DVD, you'll need a program that converts the MPEG-2 file into appropriate VOB, IFO and BUP files. Almost all DVD authoring programs will do this, but some have hurdles that have to be confronted. For instance, some programs require that you demux (separate the video and audio streams into two separate files) the MPEG-2 file before you import it into the program. There are many free utilities that will do that (do a Google search for "demux MPEG-2"). Another hurdle is that some DVD authoring programs are particular about the type of audio stream encoding they will handle. We tried to pick the most universally used encoding - MPEG-1 Layer 2. Some programs might want you to use AC3 or PCM. If your software requires this, there are utilities that will do the converting. Since there are many different DVD authoring programs out there, I won't describe them in this document. I hope others will post their step-by-step instructions for using the software.

3) Burn the files to recordable DVD media. Of course, this means that your computer will have to have a DVD burner, appropriate media (DVD-R, DVD+R, etc.), and software that will burn the files to the drive. The software doesn't need to be a DVD authoring package (like MyDVD, DVDit, DVD Studio Pro, iDVD, etc.), it just needs to copy the files from your hard drive to the DVD media (software like Nero, Toast, Easy Media Creator, RecordNow, etc. does this) - often such software will be bundled for free with the DVD burning drive. Also some of the DVD authoring programs will also allow you to burn the files to a DVD burner.

Below I've listed a couple of programs that I've used and had success with. Since my studio is Windows-based, there will be a lack of Mac or Linux programs listed, but I'll try to dig up some info for those platforms. I hope others will chime in with their solutions too.

VSO DivxToDVD (freeware) http://www.vso-software.fr/divxtodvd/divxtodvd.htm This program easily creates the IFO and BUP files. It also creates the VOB files. You'll need to burn the files to a DVD with another program though. Also, this program doesn't work the 352 x 480 Prelinger Archive files for some reason.

IFOEdit (Freeware) http://www.ifoedit.com/ Before using this software, you need to rename the downloaded MPEG-2 file to 'VTS_01_1.VOB' and place it in a folder named 'VIDEO_TS'. Then IFOEdit will allow you to create IFO and BUP files. You'll need to burn the files to a DVD with another program though.

DVDLab (offers a free trial period, $99 for full version) http://www.dvdlab.net This program is a little more advanced but offers the ability to combine multiple short MPEG-2 files onto one disc with sophisticated menu options - or no menu if you prefer. DVDLab will also burn the files to a DVD-R (or DVD+R) drive.

Other Windows programs to investigate:

Roxio Easy Media Creator 7
There are a lot of DVD authoring products for this platform - too many for me to list.

Mac programs to investigate:
Apple iDVD
Sizzle
Apple DVD Studio Pro
Roxio Toast 6
ffmpegx

Linux:
dvdauthor
ffmpeg

Since I do a lot of the encoding for the Internet Archive, I'd be interested to hear from you folks about software that you use to make DVDs and if there's anything that we could do to make this process easier. I know this document isn't perfect, but I hope it's a good starting point for others to add to.

Skip
http://www.avgeeks.com

Questions

- Why not Squid or mod_proxy?
- Why FreeCache?
- Why not BitTorrent?
- What files are being served by FreeCache?
- What's a good download manager?

FreeCache

Why not Squid or mod_proxy?

Both Squid and mod_proxy are great for reducing the load on web servers, and we encourage everybody to use them. The disadvantage of these caching proxies are that they only work "vertically", i.e., they reduce the bandwidth downstream from the originating web site to the users' browsers. That web site still gets 1 download per (non-cascading) proxy. The FreeCache system works more "horizontally", i.e., FreeCaches fill themselves up from neighboring FreeCaches if at all possible. Hence, the load on the originating web site is much lower. FreeCache and caching proxies are complementary technologies. Both can be used to reduce the impact on web sites.

Why FreeCache?

FreeCache is a demand-driven, distributed caching system. Cooperating caches exchange files without burdening the original site too much.

Why not BitTorrent?

BitTorrent is good and similar to FreeCache in that it balances download "horizontally". BitTorrent uses other BitTorrent clients for this balancing; these clients often become un-available after a particular file is not popular anymore. The FreeCache system utilizes permanent FreeCaches that don't go away (although particular files get flushed out after a while). Unlike BitTorrent, the FreeCache system is transparent to the end-user. No new client or server software is required, and the files do not need to be converted. To offer a file via the FreeCache system, all you need to do is prefix the URL with http://freecache.org/

What files are being served by FreeCache?

FreeCache can only serve files that are on a web site. If the link to a file on that web site goes away, so will the file in the FreeCaches. Also, there is a minimum size requirement. We don't bother with files smaller than 5MB, as the saved bandwidth does not outweigh the protocol overhead in those cases.

What's a good download manager?

We like wget, because you can tell it to play nice and go slow. It's highly configurable and very powerful. Wget runs on all Unix platforms (incl. Mac OS X), and it comes standard with Cygwin on Windows. If you prefer something graphical, Mozilla's built-in download manager works fine.

Questions

- What is DocuComp?
- What do I need I to know to use DocuComp in the WayBack Machine?

DocuComp

What is DocuComp?

DocuComp is a sophisticated technology that compares inserted, deleted, replaced and moved text and content in Web pages. It's patented algorithm has been specially designed and licensed for use in the Wayback Machine.

What do I need I to know to use DocuComp in the WayBack Machine?

What Archive Pages are comparable?

Why should I compare results of past Web pages?

Where can I find out more about DocuComp?

Some images are missing in my comparison?

Certain links or actions are not working in the comparison results?

Can I copy and use my results?

Guidelines for Press, Magazines and General Media

You only need to know the basic functions of the Wayback Machine. Begin by typing in a URL to search for into the Wayback Machine and hit the 'Take Me Back' button. Once you've found your choices on the results page, click the 'Compare Archive Pages' button in the upper right hand corner of the page. The reloaded page will have a series of check-boxes before each page date. Check any two dates and select the 'Compare two dates' button in the upper left-hand corner of the screen. The system is designed to automatically generate results for any URL's indexed by the Wayback Machine.

What Archive Pages are comparable?

You can compare any two pages from the Archive's library dating from 1996 to the present (approximately 10 billion pages).

Why should I compare results of past Web pages?

Access to the Archive's Collections is provided at no cost to you and is granted for scholarship and research purposes only. The DocuComp feature is intended to provide interesting insight into how content on pages in every field-- from the government to entertainment to business sites-- changes over time.

Where can I find out more about DocuComp?

Please visit the ww.docucomp.com site. DocuComp is a widely-used technology that is licensed by it's parent company, Advanced Software, into many of the software products and content management systems available today. Formerly a standalone application for Advanced Software, the company now focuses exclusively on licensing the DocuComp technology and patent to software vendors.

Some images are missing in my comparison?

In certain cases, images within the Web pages are not available. Not all images are archived nor are retrievable from the original site. If they no longer exist on the original site then the images will not be available and not displayed within the archived pages.

Certain links or actions are not working in the comparison results?

Links to other pages may not be live if those pages (or links) no longer exist and are not in the archive library. Also, javascript enabled links and actions are disabled in the comparison results to prevent errant scripts from being run.

Can I copy and use my results?

The results of any comparison done on the Internet Archive site are governed by the terms of use listed at: http://www.archive.org/about/terms.php. Additionally, any use of the DocuComp trademark or logo without express written permission by Advanced Software, Inc and any of it's affiliates is prohibited by law.

Guidelines for Press, Magazines and General Media

DocuComp is a registered trademark of Advanced Software, Inc. Please contact the company at (866) 329-7480 or info@docucomp.com for background information on the company's history, technology data, or to schedule executive interviews.

Questions

Who owns the rights to these movies?

About the Movies

Who owns the rights to these movies?

Is there a discussion list about the movies?

Are there other similar archives on the Web?

Why does this site contain only movies produced in the United States?

What are those animations associated with each movie and how did you make them?

How are images compared?

How can I report problems?

What is the proposed directory structure for uploading movies?

Encoding Parameters

How can I view/stream Mpeg4 encoded films?

What parameters were used when making the Real Media files on the website?

Each collection has come from some donor and may impose some restrictions on use and re-use. We are endevouring to make it easy to understand what you can do with these movies, but this is a work-in-progress. Many of the movies and collections are licensed with Creative Commons Licenses. Look for the Creative Commons logo to the left of the screen on a movie's detail page. Click on this link to find out exactley what the permissions are for the particular film. Many other films have the contact information listed for the filmmaker. If the information is provided, feel free to contact the filmaker or organization the film comes from.

Is there a discussion list about the movies?

Yes — our list is about both movie content and technical issues. You can subscribe at moviearchive-subscribe@yahoogroups.com.

Are there other similar archives on the Web?

As far as we know, this is the only site that presents high-quality downloadable movie data files practically free of use restrictions. See the Links page at Prelinger Archives for a number of sites that may be useful to researchers or those seeking specific films or footage.

Why does this site contain only movies produced in the United States?

Again, the reason is copyright law. A great many ephemeral films produced in the United States are not currently protected by copyright, either because their original copyrights have expired without renewal or because they were not properly copyrighted before publication (for example, published without copyright notice in proper form). Films produced in most other nations enjoy a greater degree of copyright protection and, for the most part, could not be placed on this site without the permission of the copyright owners and other stakeholders.

What are those animations associated with each movie and how did you make them?

The animations on the details pages and on the browse pages are animated GIF files. In most cases, still shots from each minute of the program were grabbed and saved as JPG files (these are the thumbnails which you can reach by clicking on the "See movie scenes" links). Then a tool called ImageMagick was used to create the animated GIF files from the JPGs.

How are images compared?

When compared pages contain different images, only the new (or latest) set of images is shown. Images that were either changed or removed are not displayed in the comparison results.

How can I report problems?

After comparing two pages, the upper frame on the results page includes a hyperlink to report results which return any page faults. By clicking this hyperlink, an automatic error report is generated to both the Internet Archive webmaster and DocuComp's technical team. If you wish, there is an additional help screen to describe the issue. Please keep in mind that with over two billion pages to index and compare, not all being created alike; some pages will differ greatly and not have a common frame of reference to effectively compare.

What is the proposed directory structure for uploading movies?

PROTOCOL://**HOST**/**DIR**/movies/**TITLE**/

TITLE.FORMAT
TITLE.gif - animated gif
TITLE.thumbs/**TITLE_FRAME**.jpg

PROTOCOL: rtsp | ftp | http
HOST: movies##.archive.org - The proposed upload machine is movies01.archive.org
DIR: 0 | 1 | 2 | 3 | 4
TITLE: TTTTTTTTYYYY - The first 8 letters of the title followed by the year the film was produced.
FORMAT: mpg(mpeg-1) | mpeg(mpeg-2) | mp4(mpeg-4)
FRAME: HHMMSSFF(Hour,Minute,Second,Frame Number)

If there are multiple encodings on the same format, for instance for different bitrates, then this can be appended as the last part of the base filename e.g. TITLE_256kb.rm for a 256kilobit per second encoding of a file in real media format.

Encoding Parameters

We attempt DVD, VCD, and MP4 streaming for broadband. We want these parameters to easily work with low-end video editors, but have had trouble.(pls comment on this on the movies forum if you have any ideas on what we should do differently).

MPEG-2, DVD -- 720x480 or 702x480 interlaced. With a system header on each pack to be compatible with DVD. (Prelinger movies are 1/2 D1 352x480 29.97 fps which causes some players to make them look skinny)

MPEG-1, VCD-- Video Resolution SIF (352 x 288
PAL, 352x240 NTSC)
Framerate 29.7 or 25 for PAL
Video Compression MPEG-1
Video Bitrate Up to 1151 kbps constant bitrate (CBR)
Audio 224 kbit/sec MPEG-1 Layer2
Stereo 44.1khz

MPEG-4 (big) -- 900Kbps VBR 320x240 29.97 fps progressive video with 64Kbps AAC audio. Hinted for streaming.

(We are having trouble finding a mpeg-2 to mpeg-4 converter that works. QT6 loses the audio, and mpegable does not handle 1/2 D1 correctly. Any help here would be appreciated, especially linux converters.)

MPEG-4 (small) -- 250Kbps VBR 160x120 29.97 fps progressive with 64Kbps AAC audio. Hinted for streaming.

How can I view/stream Mpeg4 encoded films?

MPEG4
Mpeg4 files can be viewed with Quicktime, Xine, VideoLan. Envivio TV provides a plugin that will enable wmp or RealOne to stream or view mpeg4 files.
Editable MPEG4
Editable mpeg4 files can be directly imported into iMovie and Final Cut Pro on the Macintosh.
These files are encoded at very high bandwidths, on the order of 2Mbps, and are comparible in quality to the mpeg2 formatted films. These files are not yet provided.

What parameters were used when making the Real Media files on the website?

Rod Hewitt posted some very useful information here

Questions
Do I need to credit the Internet Archive and Prelinger Archives when I reuse these movies?
Do I need to inform the Internet Archive and/or Prelinger Archives when I reuse these movies?
How can I get access to these movies on videotape or film?
Are there restrictions on the use of the Prelinger Films?
Can you point me to resources on the history of ephemeral films?
Why are there no post-1964 movies in the Prelinger collection?

About the Prelinger Movies

Do I need to credit the Internet Archive and Prelinger Archives when I reuse these movies?

We ask that you credit us as a source of archival material, in order to help make others aware of this site. We suggest the following forms of credit:

> Archival footage supplied by the Internet Moving Images Archive (at archive.org) in association with Prelinger Archives

or

> Archival footage supplied by the Internet Moving Images Archive (at archive.org)

or

> "Archival footage supplied by archive.org"

Do I need to inform the Internet Archive and/or Prelinger Archives when I reuse these movies?

No. However, we would very much like to know how you have used this material, and we'd be thrilled to see what you've made with it. This may well help us improve this site. Please consider sending us a copy of your production (postal mail only), and let us know whether we can call attention to it on the site. Our address is:

Rick Prelinger
c/o Internet Moving Pictures Archive
PO Box 29064
San Francisco, CA 94129
United States

How can I get access to these movies on videotape or film?

Access to the movies stored on this site in videotape or film form is available to commercial users through Archive Films, representing Prelinger Archives for stock footage sales. Please contact Archive Films directly:

Archive Films/Archive Photos
75 Varick Street
New York, NY 10013
United States
+1 (646) 613-4100 (voice)
+1 (646) 613-4140 (fax)
+1 (800) 876-5115 (toll free in the US)
sales@archivefilms.com

Please visit us at www.prelinger.com/prelarch.html for more information on access to these and similar films. Prelinger Archives regrets that it cannot generally provide access to movies stored on this Web site in other ways than through the site itself. We recognize that circumstances may arise when such access should be granted, and we welcome email requests. Please address them to Rick Prelinger.

The Internet Archive does not provide access to these films other than through this site.

Are there restrictions on the use of the Prelinger Films?

The Prelinger movies are open and available to everyone without charges or fees. You are warmly encouraged to access, download, use, and reproduce these films in whole or part, in any medium or market throughout the world, for any purpose whatsoever. We would appreciate attribution or credit whenever possible, but do not require it.

Can you point me to resources on the history of ephemeral films?

See the bibliography and links to other resources at www.prelinger.com/ephemeral.html.

Why are there no post-1964 movies in the Prelinger collection?

Because of copyright law. While a high percentage of ephemeral films were never originally copyrighted or (if initially copyrighted) never had their copyrights properly renewed, copyright laws still protect most moving image works produced in the United States from 1964 to the present. Since this site exists to supply material to users without most rights restrictions, every title has been checked for copyright status. Those titles that either are copyrighted or whose status is in question have not been made available. For information on recent changes in copyright law, see the circular Duration of Copyright (in PDF format) published by the Library of Congress

Questions

How do I add my movies or music?

I want to add LOTS of individual items to the archive, how do i do that?

How can I request a feature or report a bug for the Internet Archive?

Can you tell me a bit more about choosing a license?

I'm having trouble uploading via FTP. What tips can you give me?

Contributing to the Archive

How do I add my movies or music?

The easiest way to contribute movies or music to the archive is to use the Creative Commons Publisher application. You can also follow the directions listed on the site for movies and music uploading.

Once an item is uploaded it can take up to 24-48 hours (usually less) for your item to become live. You can track your upload's progress in our Contribution Center.

I want to add LOTS of individual items to the archive, how do i do that?

If you have a large collection of related items in single media type, like a radio show for example, please contact the Internet Archive. You can email our collections staff at info at archive.org. Be sure to include the details of your collection; we want to know how many items you have, what format they are in as well as any general information you can give us about the collection.

How can I request a feature or report a bug for the Internet Archive?

You can use the form linked to from the To Do List

Can you tell me a bit more about choosing a license?

From the Creative Commons website: "Creative Commons licenses help you share your work but while keeping your copyright. Other people can copy and distribute your work, but only on certain conditions."

You can choose a license to associate with your contribution and this license will be linked

How should I name the files for movies I upload

What kinds of formats do you want me to use for uploading?

to when users see the details page.

I'm having trouble uploading via FTP. What tips can you give me?

When uploading files that are not just text (such as sound files, movies, or images), be sure that your FTP client is in BINARY mode (or at least in automatic mode). Every FTP client is different, but usually this setting is in the connection settings.

If you cannot connect to the FTP server:
Make sure you've correctly entered the server you want to connect to (e.g. movies-uploads.archive.org, etree05.archive.org, etc.). Be certain to use your email address (the one you use to log into this website) as your username, and your website password as the password. If you still have trouble connecting, post to the forum with the error message you get, and someone will help you.

How should I name the files for movies I upload

Take for example a movie called My Home Video. The identifier (AKA base name) for this movie should be something like MyHomeVideo. The naming convention for the files depends on the encoding.

MPEG-2:
MyHomeVideo.mpeg

MPEG-1:
MyHomeVideo.mpg

DivX:
MyHomeVideo.avi

QuickTime:
MyHomeVideo.mov

Windows Media:
MyHomeVideo.wmv

Real Media:
MyHomeVideo.rm

MPEG-4:
MyHomeVideo.mp4

If you know the bitrate of the encoding (for QuickTime, Windows Media, Real Media, or MPEG-4), please include in the file name as such (using for example, 64 as the bitrate and QuickTime as the format, for example):

MyHomeVideo_64kb.mov

What kinds of formats do you want me to use for uploading?

The Internet Archive strives to archive content in open formats that are friendly to long-term storage and access. In addition to affecting long-term storage and access, giving us media in these formats will assure that they are accessible now, since many problems with long-term accessibility such as DRM and propriatary codecs also cause problems today.

However, if you have content that is not avaialable in an open/recommended format (see below), we will still happily archive it. Our systems are not tied to specific media formats and in fact are capable of archiving any type of digital data that can be represented as a file.

Format Recommendations:

We encourage users making contributions to the Archive to create as high quality versions of their media as possible. As we know access is important and not everyone has a high speed connection, we will take these archivable copies and create much smaller version for users with slow connections. Remember, a WAV file may seem big, but it won't be in 5 years. Further, you can always make lower quality files (e.g. mp3s) from higher quality files, but cannot go the othe way.

For video we typically recommend MPEG2 (DVD quality), or if you do not have MPEG2, MPEG1 or MPEG4.

For audio we recommend WAV or FLAC (preferably 24 bit).

For text we recommend plain text, xml, or pdfs.

Questions

How can I make links clickable in my posts?

How can I format text in my posts

Forums

How can I make links clickable in my posts?

You may have noticed that some posts have highlighted links in them. Internet Archive forums permit the use of HTML codes. Suppose you want to make a link to the Internet Archive home page, one that looks like this: Internet Archive home page. To do this, you would enter the following HTML code: Internet Archive home page.

How can I format text in my posts

Since the Internet Archive forum system accepts HTML codes, you can make text bold, italic, underlined, or even colored by using normal HTML codes. See WebMonkey for a list of HTML codes.

Questions

I forgot my password, what can I do?

When I attempt to log in using my username and password, I am told that the username or password is invalid. What could be wrong?

What is the difference between a virtual library card and an account?

Virtual Library Cards (AKA Accounts)

I forgot my password, what can I do?

As long as you remember the email address which you originally used when signing up for your virtual library card, you can use this form to have your password emailed to you. Bear in mind that your password will be sent in clear text, which means that anyone who views the email (or anyone with sophisticated "packet sniffing" software) can obtain your password. For this reason you should return to the Internet Archive website once you have your old password and change it to something new.

When I attempt to log in using my username and password, I am told that the username or password is invalid. What could be wrong?

There are several things to keep in mind when you encounter this error.

- Your username is your email address, not your screen name. Make sure you enter the same email address that you supplied when signing up for your virtual library card.
- Your password is case-sensitive. Check to see if the CAPS-LOCK key is engaged (typically a light would be illuminated on your keyboard).

- How do I change my password?
- How do I change my screen name?
- What happens to my forum posts and movie, software, audio, and book reviews when I change my screen name?
- What happens if my email address changes? How can I change my email address?
- How can I remove my account?

- You might have forgotten your password. If you think this is the case, you can have your password emailed to you here

What is the difference between a virtual library card and an account?

These two terms are used interchangably.

How do I change my password?

You can use this form to change your password.

How do I change my screen name?

You can use this form to change your screen name.

What happens to my forum posts and movie, software, audio, and book reviews when I change my screen name?

Your old reviews and posts will be updated with your new screen name.

What happens if my email address changes? How can I change my email address?

You can use this form to change your email address

How can I remove my account?

You can use this form to remove your account.

Questions

- How can I connect to SFLan?
- I live at 123 Main St at Crossing; do I have line of sight access to a node?
- What is the cost of a node?
- How can I get a node?
- If I get a node, can my neighbors connect also?
- What is included in the node?
- What are the power requirements of

SFLan

How can I connect to SFLan?

With a laptop: Be in the vicinity of a SFLan node. Associate with it: The SSID is sflanNN, where NN is the number of node, e.g. sflan13. No WEP. You'll get an IP number assigned via DHCP. With a house: Contact us at info at archive dot org. (Please include your address and a phone number.) Find out if you have line of sight to another SFLan node, buy a node, and we'll put it on your roof.

I live at 123 Main St at Crossing; do I have line of sight access to a node?

Go to our map at: http://woody.archive.org/nagios/cgi-bin/statusmap.cgi and see how close you are to an existing node. Also you can try something like netstumbler or kismet to look for a SFLan ssid.

What is the cost of a node?

The nodes cost $1100, which includes the price of parts and installation. Discounts are potentially available depending on the location.

How can I get a node?

Send an email with your name, exact address and phone number to info at archive dot org. Be sure to write "SFLan node" (or something similar) in the subject line. The information will be passed on to our fantastic installation team who will contact you.

If I get a node, can my neighbors connect also?

a node?

What are the connection characteristics of the network?

What is the percentage of uptime?

What about IP addresses?

I still have more questions, what should I do?

Yes, a SFLan node can connect your neighbors and co-condo association members.

What is included in the node?

Most of our nodes are composed of two radios, but some have three. The components are in a weather tight box with a four foot coax cable and two antennas attached. The whole unit is mounted on your roof (generally) on a pole. There is a picture of our lovely 5'3" spokesmodel holding one here: http://www.archive.org/iathreads/uploaded-files/AstridB-PICT0017.JPG

What are the power requirements of a node?

A node takes on average 5 watts.

What are the connection characteristics of the network?

There are no average characteristics, but 2MBs shared among 20 or so people would be an example.

What is the percentage of uptime?

SFLan is an experimental network, so the uptime varies. Right now uptime averages around 90% or more.

What about IP addresses?

SFLan uses real, routable IP addresses. These are usally given out dynically via DHCP. The nodes themselves use static addresses. We can also assign static addresses for servers. For the techies: We use tunneling, layer 2 and layer 3 bridging in parts on the network to make it all appear as a "flat" LAN. There are pros and cons about this approach. It has worked best for us so far. However, it is a moving target, and might change in the future.

I still have more questions, what should I do?

SFLan is a work in progress. If you have more questions, try the SFLan forum. If you still need help, write to info at archive dot org.

FAQ Forum ✉ RSS — New Post

Subject	Poster	Replies	Views	Date
SHN files couldn't be opened	Plooker	1	29	February 07, 2006 03:07:10pm
Re: SHN files couldn't be opened	rsadler	0	20	February 07, 2006 04:34:22pm
Need Education on FLAC	alablues	1	39	February 07, 2006 12:05:33pm
Re: Need Education on FLAC	pattiepie	1	23	February 07, 2006 04:36:13pm
Re: Need Education on FLAC	alablues	1	19	February 07, 2006 05:42:16pm
Re: Need Education on FLAC	Diana Hamilton	1	20	February 08,

				2006 04:58:00am
Re: Need Education on FLAC	DEADBUCK	1	19	February 08, 2006 07:32:19am
Re: Need Education on FLAC	Diana Hamilton	0	11	February 08, 2006 09:27:14am
How can I update information	Manager	1	100	February 05, 2006 09:30:34am
Re: How can I update LMA information	Diana Hamilton	0	89	February 05, 2006 04:59:25pm
buddies and sharing files	icsn2202	1	129	February 04, 2006 04:32:10pm
Re: buddies and sharing files	Diana Hamilton	0	94	February 05, 2006 08:32:48am
vidoes not found	icsn2202	0	120	February 04, 2006 04:26:24pm
No Sound :(	virtualwhispers	0	170	February 01, 2006 09:56:03am
Damn!	John Krautner	0	186	February 01, 2006 06:17:44am
Commercial Online Video Hosting/Formatting Service Providers?	Kahncious	0	242	January 26, 2006 01:51:45pm
Filename error	Captain Mikee	1	247	January 26, 2006 12:39:31pm
Re: Filename error	DIENSTbar	2	222	January 29, 2006 04:25:19am
Re: Filename error	simon c	1	200	January 29, 2006 08:24:26am
Re: Filename error	Captain Mikee	0	177	January 30, 2006 08:59:32am
Re: Filename error	Captain Mikee	0	178	January 30, 2006 02:11:47pm
need help	singergirl	0	328	January 22, 2006 12:33:43pm
Flac (Mac OS X)	Atz	0	395	January 16, 2006 03:32:20pm
How do I allow Web Archive in my robots.txt?	boyboy	0	405	January 16, 2006 05:46:52am
Will updating my robots.txt remove gray images?	Syd Lexia	0	380	January 15, 2006 08:26:27pm
ASARIM history post	ASARIM	1	419	January 14, 2006 11:27:34am
Re: about forums	Diana Hamilton	1	387	January 14, 2006 11:30:06am
Re: about forums	ASARIM	0	407	January 14, 2006 12:07:57pm
Fitting shows on to CDs	Stevo4	1	427	January 12, 2006 08:06:28am
Re: Fitting shows on to CDs	Atz	0	220	January 29, 2006

				05:50:24am
organizing faves	psychedellic wallflower	0	412	January 10, 2006 11:20:31am
audio derivations	earshelter	1	444	January 09, 2006 11:49:51am
Re: audio derivations	tracey pooh	2	424	January 10, 2006 09:25:28am
Re: audio derivations	earshelter	1	406	January 10, 2006 12:06:10pm
Re: audio derivations	tracey pooh	0	396	January 10, 2006 01:55:25pm
Re: audio derivations	earshelter	0	409	January 10, 2006 12:08:35pm
Downloads Cut Off	jadin	1	646	December 30, 2005 10:56:19pm
Re: Downloads Cut Off	icsn2202	0	125	February 04, 2006 04:28:54pm
downloads	gratefuljohn	2	860	December 22, 2005 08:59:46am
Re: downloads	Diana Hamilton	3	646	December 22, 2005 09:49:07am
Re: downloads	gratefuljohn	1	606	December 23, 2005 07:52:42am
Re: downloads	Diana Hamilton	0	581	December 23, 2005 09:31:09am
Re: downloads	&apos;Candy-Lady&apos;	1	586	December 28, 2005 04:34:23am
Re: GD FAQ	Diana Hamilton	0	573	December 28, 2005 07:42:47am
Why my contributions "returnofthecrusaders" and "shifa-us-sudoor" were removed?	great498	1	750	December 18, 2005 11:35:25pm
Re: Why my contributions 'returnofthecrusaders' and 'shifa-us-sudoor' were removed?	Diana Hamilton	1	694	December 19, 2005 06:01:02am
Re: Why my contributions 'returnofthecrusaders' and 'shifa-us-sudoor' were removed?	great498	1	639	December 19, 2005 11:11:13am
Re: Why my contributions 'returnofthecrusaders' and 'shifa-us-sudoor' were removed?	great498	1	599	December 21, 2005 11:13:40am
Re: Why my contributions 'returnofthecrusaders' and 'shifa-us-sudoor' were removed?	billmoyer	1	616	December 21, 2005 05:07:35pm
Re: Why my contributions 'returnofthecrusaders' and 'shifa-us-sudoor' were removed?	great498	1	543	December 27, 2005 10:23:50am
Re: Why my contributions 'returnofthecrusaders' and 'shifa-us-sudoor' were removed?	ARossi	0	424	January 10, 2006 11:38:35am

md5 failure but no e-mail	woj	0	666	December 14, 2005 04:31:19pm
Update site info	Nick1MS	1	736	December 12, 2005 08:42:02am
Re: Update site info	Diana Hamilton	0	665	December 12, 2005 08:41:35am
Automatic Podcast Archiving	salimfadhley	0	742	December 09, 2005 01:52:49pm
adding thumbnails	orly yadin	0	747	December 08, 2005 12:58:50am
Item not yet public..	Brian Chiappa	0	805	December 05, 2005 07:12:19am
Mac user can't download mpg files - befuddled	yme	1	893	December 04, 2005 10:40:37am
Re: Mac user can't download mpg files - befuddled	tracey pooh	0	771	December 05, 2005 09:52:49am
Removing movies from the Archive	friscolex	0	925	November 30, 2005 11:17:44pm
countdown leaders	Dman	1	847	November 30, 2005 03:18:49pm
Re: countdown leaders	Diana Hamilton	0	858	November 30, 2005 04:40:06pm
FTP Imports	raindog	0	906	November 25, 2005 03:15:55pm
the grateful dead	lurch68	5	1384	November 24, 2005 06:36:10am
Re: the grateful dead	xdork	0	889	November 24, 2005 07:48:29am
Re: the grateful dead	5.10	0	916	November 24, 2005 08:10:47am
Re: the grateful dead- no FAQ update yet	Diana Hamilton	1	964	November 24, 2005 08:24:00am
Re: the grateful dead- here's the FAQ update	Diana Hamilton	0	950	November 27, 2005 04:06:20pm
Re: the grateful dead	moscow	0	877	November 24, 2005 04:14:39pm
Re: the grateful dead	maxlm2	0	842	November 30, 2005 05:41:07pm
wilco	dead reckoning	2	987	November 19, 2005 06:01:11pm
Re: wilco	Diana Hamilton	0	874	November 19, 2005 07:12:11pm
Re: wilco	moxley	0	846	November 24, 2005 08:28:30am
Error when submitting new movies or Editing Details	ultragreat	0	875	November 19, 2005 05:49:52am
Re-encoding using Cleaner 6.0.1	Robert Penn	0	911	November 13, 2005 06:56:33am

recreate account	Russ Sargent	1	929	November 12, 2005 07:15:54pm
Re: recreate account	tracey pooh	1	933	November 13, 2005 10:53:04am
Re: recreate account	Russ Sargent	0	919	November 13, 2005 04:15:05pm
flicker/strobe when I convert mpeg2 to dvd	boutitboutit	0	1113	November 03, 2005 11:33:01am
Only Downoads part of Movie	mikesim	0	1146	November 01, 2005 06:56:43am
Add CD Covers...	ErocNet	1	1243	October 27, 2005 01:57:34pm
Re: Add CD Covers...	Diana Hamilton	0	1155	October 27, 2005 03:04:11pm
newer versions	vanesa	0	1155	October 26, 2005 12:37:41pm
I am having trouble burning	RHMAMA	0	1257	October 24, 2005 09:57:05am
Quick time - screen size?	bellaluna	0	1256	October 23, 2005 12:34:36pm
mp3 vs m4a	sockcrotch	1	2027	October 23, 2005 11:26:35am
Re: mp3 vs m4a	kennyd	0	1348	October 23, 2005 07:07:52pm
Carnatic Section	ninjathegreat	0	1182	October 22, 2005 04:41:45am
uploaded 8 archives and can only see 6	fernansu	0	1193	October 21, 2005 03:58:24am
FTP from work	bhsermons	0	1273	October 19, 2005 08:04:53am
Statistics Question	maka	0	1252	October 17, 2005 03:26:14pm
Filename Problem on Uploaded Show	raindog	0	1300	October 15, 2005 07:32:47pm
HELP PLEASE!! September 11 archives	ragesoss	0	1372	October 15, 2005 05:30:45pm
help with downloading movie	captainpant	1	1478	October 14, 2005 06:42:32pm
Re: help with downloading movie	captainpant	1	1278	October 14, 2005 07:52:38pm
Re: help with downloading movie	kennyd	1	1281	October 14, 2005 08:24:19pm
Re: help with downloading movie	captainpant	0	1306	October 14, 2005 08:58:46pm
Newbie here.... question.	bbackusp	1	1627	October 12, 2005 09:56:44am
Re: Newbie here.... question.	Diana Hamilton	1	1336	October 12, 2005 03:10:37pm

Re: Newbie here.... question.	bbackusp	2	1299	October 13, 2005 04:53:10am
Re: Newbie here.... question.	tracey pooh	1	1277	October 13, 2005 10:12:08am
Re: Newbie here.... question.	bbackusp	0	1273	October 13, 2005 11:22:48am
Re: Newbie here.... question.	tracey pooh	1	1269	October 13, 2005 10:25:02am
Re: Newbie here.... question.	bbackusp	1	1239	October 13, 2005 11:18:32am
Re: Newbie here.... question.	tracey pooh	1	1260	October 13, 2005 11:22:23am
Re: Newbie here.... question.	Dick Flowsdorf	1	49	February 06, 2006 12:05:43pm
Re: Newbie here.... question.	tracey pooh	1	53	February 06, 2006 12:13:36pm
Re: Newbie here.... question.	Dick Flowsdorf	0	50	February 06, 2006 12:24:02pm
Movies Posted using new contribution sustem not shown in Completed Contributions	great498	1	1309	October 10, 2005 01:26:11pm
Re: Movies Posted using new contribution sustem not shown in Completed Contributions	tracey pooh	1	1289	October 11, 2005 09:24:25am
Re: Movies Posted using new contribution sustem not shown in Completed Contributions	great498	1	1289	October 11, 2005 12:32:15pm
Re: Movies Posted using new contribution sustem not shown in Completed Contributions	tracey pooh	1	1280	October 11, 2005 01:02:15pm
Re: Movies Posted using new contribution sustem not shown in Completed Contributions	tracey pooh	2	1270	October 11, 2005 02:09:45pm
Re: Movies Posted using new contribution sustem not shown in Completed Contributions	great498	0	1117	October 27, 2005 01:09:34pm
Re: Movies Posted using new contribution sustem not shown in Completed Contributions	Tio BOB	1	863	November 16, 2005 08:16:21am
Re: Movies Posted using new contribution sustem not shown in Completed Contributions	tracey pooh	0	887	November 16, 2005 10:43:18am
Need clarification in terms of uploading movies	olivestreetprods	1	1332	October 10, 2005 06:18:09am
Re: Need clarification in terms of uploading movies	tracey pooh	0	1264	October 10, 2005 09:28:49am
deleting old movies	olivierphilippe	0	1378	October 10, 2005 12:42:23am
No Import your Movies Form	great498	1	1346	October 08, 2005 06:05:55pm

Re: No Import your Movies Form	tracey pooh	1	1292	October 09, 2005 11:05:00am
Re: No Import your Movies Form	great498	1	1269	October 10, 2005 11:51:16am
Re: No Import your Movies Form	tracey pooh	0	1294	October 10, 2005 12:37:52pm
My Live Show Posted, but the date is wrong	soulfunkgroove	1	1319	October 07, 2005 11:18:04am
Re: My Live Show Posted, but the date is wrong	Diana Hamilton	1	1352	October 07, 2005 04:57:26pm
Re: My Live Show Posted, but the date is wrong	soulfunkgroove	1	1265	October 11, 2005 11:55:08am
Re: My Live Show Posted, but the date is wrong	Diana Hamilton	0	1321	October 11, 2005 12:05:03pm
Dedicate to Public Domain Form Down?	great498	1	1366	October 07, 2005 05:35:32am
Re: Dedicate to Public Domain Form Down?	Diana Hamilton	1	1351	October 07, 2005 08:30:33am
Re: Dedicate to Public Domain Form Down?	tracey pooh	1	1319	October 07, 2005 09:03:57am
Re: Dedicate to Public Domain Form Down?	tracey pooh	0	1268	October 08, 2005 12:24:04pm
.3GP Mobile video files supported?	great498	1	1741	October 02, 2005 12:36:48am
Re: .3GP Mobile video files supported?	theNinthWeb	1	1401	October 04, 2005 09:25:11am
Re: .3GP Mobile video files supported?	simon c	1	1366	October 04, 2005 01:42:07pm
Re: .3GP Mobile video files supported?	Diana Hamilton	2	1381	October 05, 2005 12:22:57pm
Re: .3GP Mobile video files supported?	theNinthWeb	0	1291	October 05, 2005 02:32:48pm
Re: .3GP Mobile video files supported?	tracey pooh	0	1299	October 06, 2005 09:31:45am
delete	taduoka	1	1532	September 29, 2005 01:24:21am
Re: delete	Diana Hamilton	1	1485	September 29, 2005 04:44:11am
Thanks to responce.	taduoka	1	1341	September 30, 2005 12:22:48pm
Re: Removal from web archive	Diana Hamilton	1	1495	September 30, 2005 12:37:46pm
Re: Removal from web archive	taduoka	0	1196	October 17, 2005 08:24:19pm
MD5/Checksum Error Issue	raindog	1	1470	September 27, 2005 02:01:17pm
Re: MD5/Checksum Error Issue	Diana Hamilton	1	1488	September 27, 2005 04:55:14pm

Re: MD5/Checksum Error Issue	raindog	1	1433	September 27, 2005 05:35:41pm
Re: MD5/Checksum Error Issue	Diana Hamilton	1	1448	September 27, 2005 07:06:43pm
Re: MD5/Checksum Error Issue	raindog	1	1405	September 27, 2005 07:27:20pm
Re: Directory Mislabel Issue	Diana Hamilton	1	1424	September 28, 2005 05:59:25am
Re: Directory Mislabel Issue	raindog	0	1372	September 28, 2005 03:40:37pm
How can I move files into existing directory?	malaysia.podcaster	1	1457	September 24, 2005 06:56:16pm
Re: How can I move files into existing directory?	Diana Hamilton	0	1453	September 24, 2005 07:17:12pm
Broken Thumbnails Page	great498	0	1409	September 24, 2005 11:17:16am
I posted an audio show that I need to remove	soulfunkgroove	0	1521	September 22, 2005 03:25:16pm
flash websites	sheraroma	1	1506	September 21, 2005 08:16:57am
Re: flash websites	Diana Hamilton	0	1462	September 21, 2005 08:33:36am
File deletion	Jazzbro21	1	1527	September 21, 2005 07:06:23am
Re: File deletion	Diana Hamilton	0	1477	September 21, 2005 07:52:38am
eBay Feedback Pages	dr_dave	0	1450	September 18, 2005 05:56:22pm
autoload won't recognize file that is there	SpacinMason	1	1481	September 16, 2005 08:30:41pm
Re: autoload won't recognize file that is there	Diana Hamilton	1	1513	September 17, 2005 07:25:27am
Re: autoload won't recognize file that is there	SpacinMason	0	1432	September 19, 2005 06:47:21pm

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Terms of Use (10 Mar 2001)

Page 1 of 2

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WW472021

Mammut Flex Nondry Rope

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Price - $ 145.00

A real workhorse of a rope--great for guiding, big walls and working a route. Large 11mm diameter provides excellent abrasion resistance, and is lighter weight than 2 double rope--a real plus on long routes. Kernmantle design combines durable braided sheath and shock-absorbing core. No "dry" treatment makes it best for dry climates. Imported

Specification	Description
Impact force	9.4 kN
Working elongation	5.8
Weight per foot	23.16 g

Select Item TOPAZ 11MMX50M $145.00 ▾ Sizing and Ordering Information

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InterNIC

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● Domain (ex. internic.net)
○ Registrar (ex. ABC Registrar, Inc.)
○ Nameserver (ex. ns.example.com or 192.16.0.192)

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Whois Server Version 2.0

Domain names in the .com and .net domains can now be registered
with many different competing registrars. Go to http://www.internic.net
for detailed information.

   Domain Name: REI.COM
   Registrar: DSTR ACQUISITION PA I, LLC DBA DOMAINBANK.COM
   Whois Server: whois.dotster.com
   Referral URL: http://www.dotster.com
   Name Server: AUTHNS1.MPLS.QWEST.NET
   Name Server: AUTHNS2.DNVR.QWEST.NET
   Name Server: AUTHNS3.STTL.QWEST.NET
   Status: clientDeleteProhibited
   Status: clientTransferProhibited
   Status: clientUpdateProhibited
   Updated Date: 14-jan-2011
   Creation Date: 13-mar-1996
   Expiration Date: 14-mar-2016

>>> Last update of whois database: Mon, 16 May 2011 16:21:21 UTC <<<

NOTICE: The expiration date displayed in this record is the date the
registrar's sponsorship of the domain name registration in the registry is
currently set to expire. This date does not necessarily reflect the expiration
date of the domain name registrant's agreement with the sponsoring
registrar.  Users may consult the sponsoring registrar's Whois database to
view the registrar's reported date of expiration for this registration.

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database through the use of electronic processes that are high-volume and
automated except as reasonably necessary to register domain names or
modify existing registrations; the Data in VeriSign Global Registry
Services' ("VeriSign") Whois database is provided by VeriSign for
information purposes only, and to assist persons in obtaining information
about or related to a domain name registration record. VeriSign does not
guarantee its accuracy. By submitting a Whois query, you agree to abide
by the following terms of use: You agree that you may use this Data only
for lawful purposes and that under no circumstances will you use this Data
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use electronic processes that are automated and high-volume to access or query the Whois database except as reasonably necessary to register domain names or modify existing registrations. VeriSign reserves the right to restrict your access to the Whois database in its sole discretion to ensure operational stability. VeriSign may restrict or terminate your access to the Whois database for failure to abide by these terms of use. VeriSign reserves the right to modify these terms at any time.

The Registry database contains ONLY .COM, .NET, .EDU domains and Registrars.

Report Inaccurate Whois listing

This page last updated 01/24/2003

FLEX:

(click on image to enlarge)

Colors
fire, green, orange

Features:

- UIAA falls (1 strand 80kg): 14
- Weight per m: 77g
- Sheath slippage: 0mm
- Impact Force: 9.3kN
- Elongation at 80kg: 6%
- Superdry
- Duodess
- Duodess Superdry

For climbing schools, club tours, big walls, mountain rescue, training: very robust, hard-wearing, high safety reserves, low impact force, longevity, excellent handling.

Rope ends

The core of a rope tends to loosen during use and poke out of its sheath at the rope ends. The ends of the MAMMUT ropes are therefore subjected to ultrasonic treatment. The core and sheath fuse to form a perfect connection at each e end for the entire life ofthe rope.

```
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Price - $     145.00

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</td>
<br>
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<br>
Please read this important information about <a href="/pricing.html">REI prices</a>
<br><br>
<a href="/index.html">Home</a>  |
<a href="/bin/review_cart.cgi">Shopping Basket</a>  |
<a href="/help.html">Help</a>  |
<a href="/bin/psearch">Product Search</a>  |
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<a href="../bud/472011.html">
New England Maxim 11mm Non-Dry Rope  </a><font size=4>

 Sale $ 89.99</font><br>

<font size=3><ul><li>Good for sport climbing and top-roping, the Maxim is a general workhorse of a rope</ul></font>


<a href="../bud/472021.html">
Mammut Flex Nondry Rope  </a><font size=4>

$     145.00</font><br>

<font size=3><ul><li>A workhorse of a rope--excellent for most climbs</ul></font>


<a href="../bud/472033.html">
New England Maxim 10.5mm Dry Rope  </a><font size=4>

$     129.00</font><br>

```

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<font size=3><ul><li>10.5mm diameter makes this rope ideal for leading, mountaineering and sport climbing</ul></font>


<a href="../bud/472067.html">
Mammut Flash Duodess 10.5mm Dry Rope  </a><font size=4>

$     185.00</font><br>

<font size=3><ul><li>Use the lightweight Duodess for all single-rope applications including gym, lead and sport climbing</ul></font>


<a href="../bud/472024.html">
Mammut Flex 11mm Dry Rope  </a><font size=4>

$     109.99</font><br>

<font size=3><ul><li>A workhorse of a rope that's perfect for leading, big walls and working a route--in wet or dry conditions</ul></font>


<a href="../bud/472037.html">
New England Maxim 10.5mm Non-Dry Rope  </a><font size=4>

$     119.00</font><br>

<font size=3><ul><li>This general-purpose rope is ideal for leading, mountaineering and sport climbing</ul></font>


<a href="../bud/472061.html">
Mammut Flash 10.5mm Non-Dry Rope  </a><font size=4>

$     135.00</font><br>

<font size=3><ul><li>A good general-purpose rope that works well for sport climbing, leading and working routes</ul></font>


<a href="../bud/472063.html">
Mammut Flash 10.5mm Dry Rope  </a><font size=4>

$     195.00</font><br>

<font size=3><ul><li>Dry treatment gives this general-purpose rope added versatility while leading, on big walls and working routes--in wet or dry conditions</ul></font>


<a href="../bud/607693.html">
New England Maxim Bi-Color 10.5mm Dry Rope  </a><font size=4>

$     167.00</font><br>

<font size=3><ul><li>Use this lightweight all-purpose rope for all single-rope applications, including gym, lead and sport climbing</ul></font>


<a href="../bud/614750.html">
New England Escalade 10.5mm Non-Dry Rope  </a><font size=4>

$      99.95</font><br>

<font size=3><ul><li>A fantastic value in a basic climbing rope!</ul></font>

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// SECTION 108(a)(3)).

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          if (url.indexOf("mailto:") == -1 &&
             url.indexOf("javascript:") == -1
             && url.length > 0) {
            if(url.indexOf("http") != 0) {
                url = xResolveUrl(url);
            }
            url = url.replace('.wstub.archive.org','');
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       for (j = 0; j < forms.length; j++) {
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Net.Commerce for OS/390

Rich Conway, Simon Armiger, Nils Bergquist,
Kevin Curley, Jarmo Lempinen

International Technical Support Organization

http://www.redbooks.ibm.com

This book was printed at 240 dpi (dots per inch). The final production redbook with the RED cover will be printed at 1200 dpi and will provide superior graphics resolution. Please see "How to Get ITSO Redbooks" at the back of this book for ordering instructions.

SG24-5154-00

International Technical Support Organization

SG24-5154-00

Net.Commerce for OS/390

July 1998

Take Note!

Before using this information and the product it supports, be sure to read the general information in Appendix D, "Special Notices" on page 193.

First Edition (July 1998)

This edition applies to Version 3, Release 1 of IBM Net.Commerce for OS/390, Program Number 5697-D32 for use with OS/390 Version 2, Release 4

Comments may be addressed to:
IBM Corporation, International Technical Support Organization
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Preface

This redbook covers the planning and customization considerations for the IBM Net.Commerce product for OS/390. To assist novice users, it offers a brief introduction to electronic commerce and the product itself, as well as a section on the basic steps of product installation, configuration and usage. The redbook also provides examples of Net.Commerce implementations.

This redbook helps you understand advanced aspects of planning for and designing an electronic shopping mall using the IBM Net.Commerce for OS/390 product. Planning and design issues related to the Domino Go Web Server, Version 4.6.1 and DB2 V5 for OS/390 are also discussed.

The Team That Wrote This Redbook

This redbook was produced by a team of specialists from around the world working at the International Technical Support Organization Poughkeepsie Center.

Rich Conway is an Advisory Systems Engineer at the International Technical Support Organization, Poughkeepsie Center. He has 17 years of experience in MVS and OS/390 as a systems programmer. While working at the ITSO, he has lead projects and written extensively on e-business and UNIX System Services on the OS/390 platform.

Simon Armiger is a Software Services Specialist in IBM UK. He joined IBM in 1993, having graduated from the University of Birmingham with a BSc. in Physics with Honors. He has five years experience in IBM mainframe operating systems and applications, starting out in VM and VSE, then moving on to MVS and OS/390 two years later. His area of specialization is now primarily in e-business and Internet-related applications on OS/390.

Nils Bergquist is an IT specialist in Product Support and Services in IBM Sweden, since 1996. He has 11 years experience with MVS and OS/390. He has six years experience with various UNIX operating systems, including AIX and UNIX System Services. Nils holds a Master of Science degree in Physical Engineering from Chalmers University of Technology in Gothenburg. His specialization is architectures for integration between Internet applications and business applications.

Kevin Curley is a Technical Consultant in the OS/390 New Technology Center (SNTC) in IBM USA, Poughkeepsie, NY. He has twenty five years of experience in MVS and OS/390, both as a customer of IBM and within IBM including roles as a systems programmer, and MVS product designer and developer. Recently he has become involved with e-business technologies for the OS/390 platform.

Jarmo Lempinen is a Services Specialist in the e-business group in IBM Finland. He has nine years of experience in MVS and OS/390, including roles as a customer software support representative and systems programmer. Recently he has become involved with Internet-related technologies and workflow management, where he has developed skills in UNIX System Services, Computer Aided Telephony Systems (CATS), and Net.Commerce.

Thanks to the following people for their invaluable contributions to this project:

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Don Bagwell
IBM USA

Judi Bank
IBM USA

Jay Brodfuehrer
IBM USA

Andrew Coleman
IBM USA

Scott Engleman
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Tom Forties
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Janet Geddes
IBM USA

Thomas Klensk
IBM USA

Ken Morgan
IBM USA

Tony Newling
IBM Australia

David Share
IBM USA

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Net.Commerce Daemon
Net.Data
Domino Go
Web server
Net.Commerce Director
80
443
DB2
HFS
Mall/Store HTML pages, graphics,Java, etc.
RACF
HTTP
SSL
Shopper registration user IDs and passwords can be stored in DB2, RACF or a password file in the HFS.
Internet
Browser

Figure 2. Product Relationships

1.2.1.1 The Database

DB2 allows you to manage and retain the data you enter about the store and its merchandise. The DB2 data management system consists of a collection of tables that correspond to the forms in the Net.Commerce Administrator. Every time you fill in a form and save it, the information is stored and/or updated in the corresponding table in the database. This includes customer and order information as well.

1.2.1.2 The Web Server

The Domino Go Webserver is a very important part of your Net.Commerce system. It controls the flow of secure transactions using the SSL protocol in order to ensure that transactions are only performed by authorized users, which gives shoppers and merchants confidence in the transaction.

Note: Net.Commerce can also use other security systems for payments, for example, the SET protocol, which is available for even more secure transactions.

1.3 Customization

Another feature of the Net.Commerce product is its ability to give your shop or mall a unique image. You can do this easily by customizing the macros and commands that come standard as part of the Net.Commerce product.

Commands and macros are statements in each home page that allow the user's browser to interact with the Net.Commerce system. They are comprised of both HTML and SQL statements, which work with the Net.Data macro statements found in Net.Commerce itself.

1.3.1 Net.Commerce Commands

Net.Commerce commands are used to invoke the various mall and store functions for the shopping process. Each time a shopper clicks a button or hyperlink, a URL is sent to your system that has a Net.Commerce command embedded within it.

There are two types of commands:

- *UI commands* (user interaction) cause a macro to be invoked which will retrieve information from the Net.Commerce database and send a page to the shopper's browser.
- *Non-UI commands* (no user interaction) process and write information to the Net.Commerce database. (They will then branch to a URL, which might be a UI command).

1.3.2 Net.Data Macros

Net.Commerce includes the Net.Data run-time libraries (see Figure 3 on page 7). The mserverd daemon uses these to execute macros for a range of mall and store tasks. Macro execution is performed as follows:

1. The macro file is loaded.
2. Input parameters are passed from HTML forms, command parameters and other global variables (for instance SESSION_ID). These can be used in the macro to control processing.
3. Net.Data syntax controls macro flow, and one or more SQL statements are executed to retrieve data from the database.
4. The data is formatted as an HTML page and returned to the browser.

Simple Net.Data macros can be created with the Template Designer, such as those used for store home pages, category pages and product pages. More complex pages can be created by customizing the samples supplied with Net.Commerce.

NetCommerce/macro/en_US/*
Category/Product Pages
Registration & Address
Book Shopping Cart
Shipping and Orders
Error Pages
Macro Files
Input Parameters
Net.Data
HTML
SQL
MERCHANT
SHOPPER
SHOPPINGS
ORDERS
SHIPPING
PRODUCT
PRODPRCS
Net.Commerce Database

Figure 3. Net.Commerce Macro Structure

Basically, Net.Data macros can have four sections:

1. The %DEFINE section assigns variables used in the macro.
2. The %SQL section defines an SQL statement and the HTML markup used to display the results of the SQL query. Multiple %SQL sections can appear in the same macro.
3. The %HTML_INPUT section represents a full HTML page containing Net.Data statements to assign and reference variables, control the flow and execute %SQL sections.
4. The %HTML_REPORT section is similar to the %HTML_INPUT section; those sections can be used as independent entry points into the macro.

For more information on the macros and commands for Net.Commerce customization, see Net.Commerce online help.

1.3.3 Net.Commerce Application Program Interface (API)

Net.Commerce APIs, similar to Net.Data macros, are called and executed as the resulting action of a Net.Commerce command (see Figure 4 on page 8). An API is an external dynamic link library (DLL) which has been created by compiling and linking a C or C++ program.

The APIS and MACROS database tables contain information about which API function or macro has to be used by a specific command. By customizing these tables, you can specify different APIs and macros to be executed for most commands. This is necessary if you want to use your customized macros or APIs to perform certain functions, such as order processing, inventory checks, or shipping.

Net.Commerce Database
APIS
TASKS
MACROS
MERCHANT
SHOPPER
SHOPPINGS
ORDERS
SHIPPING
PRODUCT
PRODPRCS
DEFINE
SQL
HTML_INPUT
HTML_REPORT
SQL
API DLL
API Call
Net.Data
mserverd
Domino Go
Webserver
nc-director
80
443
HTTP
SSL
Browser
http://host/cgi-bin/msrvr/;register/form

Figure 4. Net.Commerce System Structure

For more information on the APIs for Net.Commerce customization, see Net.Commerce online help.

1.3.4 Net.Commerce Online Help Information

The Net.Commerce system contains online information to show you how to plan, set up and manage electronic stores using the Net.Commerce Administrator, and perform basic customization of your online store. *Net.Commerce: Configuring and Getting Started,* GC24-5862 also contains related information.

The Net.Commerce Administrator contains a help button on the left frame of all the screens you view. Clicking this button displays a separate help window with a list of topics in the left frame. You can expand this list to increasingly specific topics by clicking the triangle next to the topic. To collapse the section, click the triangle again. To view the contents of a topic, click the topic name. The information will appear in the right frame.

The first topics provide an overview of the Net.Commerce system. In the "How do I" section, you are then shown how to create, customize and manage your store. Each topic contains links to related topics and reference information. To find information about a specific topic, click the Index button in the top frame to display a detailed index.

Chapter 2. Designing Your Individual Shopping Site

This chapter discusses general topics that should be decided upon before establishing an electronic store.

2.1 Products and Their Classification

In order to set up an electronic store, the first thing you need to decide is which products you want to sell and how to classify them in categories.

There are some points to consider:

- Which products are suitable?
- Which group of shoppers do you address?
- How can you keep your product table up-to-date to gain an advantage over a paper catalog?
- Do you intend to offer specials, sales, and so on?
- Do you intend to provide cross references to related products, accessories, detailed descriptions, and alternatives if sold out?
- How can you leverage shopping information, analyze data, and react on typical behavior?
- How can you react on shoppers' demographic information (income, age, hobbies, and so on)?
- How can you make the ordering process easy, both for first-time users as well as for experienced users?
- How can you give shoppers a reason to come back?
- How can you set up your fulfillment system?
- How can you integrate a virtual storefront to your backend systems?

2.1.1 Choosing the Right Products

Some products are more suitable for selling over the Internet than others. For most products, the shopping process on the Internet is different from the traditional shopping process of going to a store, taking a product from the shelf, feeling it, reading the labels and possibly asking a salesperson for advice. Most customers want to feel, try, or get trusted advice about a new product before buying it. For example, when buying a steak at a grocery store, you want to see it before you buy it to make sure there is not much fat, that it is the right size and so on. When buying a drill, you want to determine whether it feels solid and fits your hands.

Consumers want to be sure they have chosen the right product. A product they have bought before and like will probably be purchased again, possibly through your Internet store. Generally, mass-produced pre-packaged products are more suitable for electronic purchase than others, especially the well-known brands.

Why would a potential shopper choose your product over another product? This is an essential question to the success of your online store, especially if you plan on selling rather expensive products. So you might want to include product reviews, forums or newsgroups where you respond to questions or problems from customers.

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If you are selling sports-related goods, such as sneakers, shirts, and so on you could, for instance:

- Add a page with links to sites where news about sports is presented.
- Run the highlights of the latest sports results (by yourself or in cooperation with the source of the information).
- Add a newsgroup where people can ask questions about the products.
- Add a chat-environment, where people interested in sports could meet.

This way you attract people interested in sports to your store that you can seduce with offers. You also create an environment that is more than just a company trying to sell things.

Information-intensive products are also suited for this medium. These products can be transmitted over the same channel on which they have been ordered. The problem of the customer being able to copy or even resell the information is being tackled at the moment by technology such as Cryptolope. Cryptolope uses containers that secure and guarantee payment for intellectual property.

Market research is another factor critical to the success of your online store, so it is important to find out what the customers want, what your competition is offering (probably over the Internet as well) and what your added values could be over your competitors. No one is going to buy from you if they can get the same product elsewhere (not necessarily cheaper, but in a more convenient way), unless you have something extra to offer. People want information on what to choose in order to be able to make a better choice. Therefore you might consider offering customization options for individual product packages, information on how to better use your products, or entertainment, as well.

2.1.2 Product Categories

To create a shopping environment where customers can easily feel at home, you should make sure they can find the products they need in the places they expect them. But, contrary to a real-life store, you can put products electronically in more than one place without using expensive shelf space.

Use multiple "parents" if you want to include the product in multiple categories. For example, you could include milk in the cold drinks category as well as in the dairy products category. That way, you can make sure that a product (in this case milk) will be found by customers who take different paths while browsing through your online store.

Most experienced users know what they want, and they want to get to it fast. Therefore, be sure to include a fast path for them to get to the products they have bought before, and to related products. Especially on slow connections, having to browse multiple categories is not a good idea.

Depending on the products you are selling, customers accept differing shopping and order processes.

For example, when shopping for groceries, customers do not want to browse two categories and one product page for every product they want to buy. They may just need a "grocery list" in which they can check items and specify the amount they need.

However, for more expensive products, people are willing to invest time and effort in the process of finding the right product. In these cases, offer all information the shopper needs to make a decision, and build an easy but logical navigation structure around it.

Net.Commerce provides you with great flexibility to find and implement the appropriate design for products and categories and also for multiple variations of the same product (also referred to as *attributes* or *items*). Figure 5 illustrates how such structures and relations are reflected in the Net.Commerce database:

CGRYREL
categorizes
categorized by
CATEGORY
Template
customized for
SHOPGRP
PRODSGP/CATESGP
categorizes products by
CGPRREL
categorized by
has
Price
according to
SHOPGRP
PRODPRCS
PRODUCT
tagged with
items
grouped
to products
possesses
possesses
PRODDSTATR
PRODATR

Figure 5. Data Models on Categories, Products and Items

2.2 Graphical Page Layout

It is important to convey a professional impression with your store. To achieve this, you need professional-looking pages that fit the image you want to create for your shop. Just as in the real world, where you judge a shop by the appearance of its building, staff, catalog and advertising, your Web pages should look good as well.

For selling products over the Internet, you need to find the right balance between "hip" pages that look nice but are not very functional, and boring, business-like pages that convey relevent information. Remember, you are selling products, so make it easy to order those products.

Professional graphic designers who are trained in designing interactive media and are aware of the image you want to create should create the page layout for you. Shoppers browsing the Internet are used to high quality images and well-designed pages, and a good graphical design makes them come back more often, so *do not underestimate the influence of the graphical design of your Web pages!*

In general, consider the following things before designing a Web page.

2.2.1 Use Recognizable Styles

Try to use a basic and consistent layout on *all* your pages, one that is unique for your company. This includes headers and footers, colors, fonts, location of images, and so on.

If you decide to design your site yourself, you can design most macros (dynamic HTML pages that interact with the Net.Commerce database) using the Template Designer, provided by Net.Commerce. However, for designing professional-looking HTML pages, the Template Designer contained in Net.Commerce is not very well-suited. You might be better off using dedicated HTML editors for this task.

These programs offer more control over the layout of the page and also offer the latest HTML additions. Although some editors claim WYSIWYG control over the pages they create, it is still the browser that does the final formatting, so check the appearance of your pages regularly, using popular browsers, to avoid surprises.

2.2.2 Use Graphics and Colors

Do not design your pages like lists on a 3270 screen. Take care however, to avoid overloading your pages with too many fancy pictures and with animations that take a long time to load. Keep in mind that many users still have slow connections to the Internet.

2.2.3 Use Templates

Use different layouts for different product categories. For example, you would certainly want to use a different background picture or text font for winter coats than for swimsuits.

2.2.4 Use Headers and Footers

Create headers that include your logo, colors and slogans that you also use in other media in order to let shoppers know which store they are in at all times. You can use the footer to offer links to the shopping cart, the order pages, and back to the product and category pages. You can also use the footer line to add links to sales offerings or to general product categories that might be interesting for all shoppers (for example, candles or fancy mousepads).

You could also design a more complicated setup with frames, so you can show your shopcart all the time, or show category and product pages together. Shoppers must be able to recognize you when browsing through the Internet.

Note: Not all browsers support frames, so do not forget to include a notification of some sort on your pages when using advanced HTML features. You should also include pages without frames, for the benefit of those users whose browsers cannot support them.

2.2.5 Use a Common Set of HTML Features

Try to use a subset of HTML that most browsers support. There are many HTML extensions that can be used to produce fancy graphics, animations, and so on but which can only be viewed with the latest broweers or special browser plug-ins. You might deter shoppers from visiting your site if they are forced to change to another browser or obtain and install additional code for viewing. Therefore, we suggest that you use HTML extensions only if that is the way you need to make a certain impression, or only for "nice-to-have" features, not for essential information. It is also important to be aware of your target group. Are you targeting young people that like keeping up with the latest technology, or are your customers people that look at browsers as a necessary evil?

2.2.6 Use Images and Image Formats

Perhaps the most important factor in the look of your catalog are the pictures, so it is important to produce quality images.

You should produce images (photos) of all the products you want to sell via the Internet. Do not underestimate the value of this step. These pictures must be of good quality and contain just the product. Do not use photos of the whole family of products on all product pages. Likewise, do not use badly scanned images from brochures with some text across the picture.

However, making pictures is both expensive and time-consuming, so you might want to obtain good images of the products you are selling from the manufacturer of those products. You will need these images in JPEG or GIF format, in order to include them in your shopping site. Note that these two formats are basically different.

JPEG images can contain up to 16 million colors, but they use "lossy" compression. The image degrades during compression, but the file size is just a fraction of the original. Some image-editing programs, such as PaintShop Pro (available as shareware on the Internet) or Adobe Photoshop allow you to specify the compression ratio. The higher the compression ratio, the lower the file size, but also the lower the quality of the image. Also, in some programs during the editing process, you lose quality every time you open a picture and save it as a JPEG. Depending on the number of pictures, the bandwidth, and the type of picture, you can optimize this. In color photos, even larger compression is hardly visible. You need to experiment to find the optimum solution.

For graphics using plain colors, JPEG images are less suitable because of the distortion that comes with the data compression. GIF images are better for these types of graphics. GIF images can contain only 256 colors and use only non-lossy data compression, so they can be fully reconstructed. Most programs allow reducing the number of colors to 128 or even less, in order to further decrease the file size. Here also you have to experiment to find the best solution.

GIF images allow for a "transparent color." Some editors allow you to designate one color to be transparent, so that the background (color or image) will shine through. This gives the picture a nice, integrated look. When designing your own graphics, use the anti-aliasing option that most editors have in order to get the edges more fluent. When using a transparent background, anti-alias to the color that best describes your background.

Keep in mind that, while you might be able to omit images for self-explaining items (for example, a memory extension for a PC) in general your customers prefer buying things they have seen in advance, so it advisable to provide images for all products you offer for sale.

2.2.7 Use Different Layouts for Different Customers

If your shoppers have registered and have entered personal information such as age, gender, income, address, job, etc., you can use this data to show special sales offerings to them, or to use different page layouts. You may also want to put your best customers in a special shopping group.

2.3 Preliminary Aspects of Operation

Before you get serious about implementing an electronic store, there are other issues to consider apart from Web page design and product classification. Imagine yourself as a user who wants to shop at your site and try to find answers to the following questions:

- How will users learn about the existence of your store?
- What problems might a user encounter while shopping online?
- How will users like the shopping process you offer them?
- What are the users' expectations towards order fulfillment?

The following sections provide guidance on how to approach these issues.

2.3.1 Offering a Shopping Cart Facility

The shopping cart contains products that the shopper bought before, or at least found interesting. Otherwise the shopper could use the search macro. In order to really make use of the search capabilities of Net.Commerce you may want to include additional information in the custom fields of the database or in the product attributes. A gift shop could include the target group so you can just specify buying something for your grandmother and the system will come up with ideas, or you could add some extra keywords on the use of a product, or the problems it solves.

2.3.2 Updating Your Contents

Consider adding headlines, including the latest news of your company or your products. It is very annoying to hear about a product and then not find anything about it on the Web site, or to find announcements for events that happened a month ago. Show on your pages the date of the last updates so that shoppers know that they have retrieved the latest information. They want to know what has changed since their last visit. Most shoppers like dynamic shops, as long as they still can find their way.

2.3.3 Keeping Your Links Accurate

If you remove information, don't forget to remove the dependent links to this information. Would you like it, if when you clicked on a link you got the following message?

```
Error 404
Not found - file doesn't exist or is read protected
[even tried multi]
```

You probably wouldn't. Avoid expired links! Within Net.Commerce the program only shows up-to-date links, but hardcoded pages such as the home page and additional HTML pages are static and prone to expiration. Especially be aware that pages with external links that are not under your control (links to manufacturers, user organizations, etc.) can change without notice.

2.3.4 Define an Adequate Order Process

Organize the order process so it is easy. Guide the shopper unambiguously through the steps of order preparation and ordering by using easy-to-understand symbols and avoiding unnecessary links to other pages. The user interface should accommodate first-time users, as well as experienced shoppers.

For first-time users, it is important to be able to find the products they like in an easy way. The Net.Commerce catalog, with its categories and products, is quite suitable for this approach.

If the speed of their Internet connection is appropriate, most new shoppers like to browse by images. However, offering a text-only page also can speed up shopping for shoppers who do not need images to make their selections.

2.3.5 Define an Adequate Fulfillment Process

Choose the most appropriate system to get your products to the customer. For example, people expect pizzas within 30 minutes, but a $2000 computer can be delivered some days after ordering. In some cases you can use an existing parcel service, but in other cases, you have to set up your own.

Being faster than the competition can be a selling point as well. In some situations you might even want customers to pick up the goods themselves after ordering through your system.

2.3.6 Some Words on Publicity

Let potential customers know you are there. Perhaps the most easily forgotten step is letting customers know you exist. Use part of your budget for promoting your store.

- Advertise in your existing documentation and packaging.
- Advertise on radio or TV.
- Have clickable ads on popular (among potential customers) Web sites. Consider offering the owners of these Web sites a percentage of the sales generated from links to your site.
- Consult with your suppliers regarding advertising. Quite often you will see a product supplier listing places to buy their product. Try to get your Web site added to this list.

- Look for free sources of advertising. If you have something special to offer, radio stations, TV, newspapers or magazines may be interested in writing about you. However, advertising in newsgroups and unsolicited e-mail is *not* a good idea unless you have something *really* good to offer.

2.4 The Anatomy of a Net.Commerce Shopping Trip

You have to decide on the design of the shopping trip that your shoppers will be confronted with. This can be compared to the arrangement of aisles inside a big supermarket, where you will try to guide your customers through most of the departments.

Make the shopping trip exciting, uncomplicated and straightforward for shoppers. Assume that shoppers are not used to the Internet, nor to buying goods via the World Wide Web. They need to be guided carefully, and must not be confronted with unnecessary complex tasks or technical terms.

Take into account the dynamic nature of the Internet and of Net.Commerce. Think about putting specials and sales offerings directly on your home page or in your html page footer. If you have collected shopper demographic data, you can use this to design pages individually, according to age, gender or income. You may also include cross-references to detailed product descriptions or to product evaluations. You might also offer optional add-on products or accessories, and add links to alternative products when you are out of stock for a specific item.

For small shops especially, the shopping process needs to be easy, short and clear. This is true not only for the categories, but also for the ordering process. If it is common for customers to just buy one product for themselves and then leave the store, they do not need other options such as an address book. Simply offer them a button to jump from the product page to the page where they can enter their payment information. (Remember that they must be known to the system before they can place an order, so design your process accordingly).

If most customers do not need the information you are displaying on the product page, you may even offer a shortcut button on the category page.

Even for big shops or malls, the order process should be kept simple. However, because the shop is more complex and there are more options, this may be harder to achieve. As a general rule, try to adapt the order process to the shopper's behavior and not to the shop's organizational structure.

If typical shoppers of your store buy several products during one shopping trip, or if they usually want their orders shipped to more than one address, then make this easy for them. If they buy more than one product from the same category then link the 'add to shopcart/shipto' button straight back to the category page. To do so, pass the category number into the product macro, and use it in the URL section of the HTML form around the "add" button. If a product uses accessories, then route the shopper to a page where these are offered.

To shorten the order process, critically examine the "database" structure and table relationships for the ordering process. An example structure is shown in Figure 6 on page 19.

ORDERS
paid with
ORDPAYMTHD
SHOPPINGS
contains
contains selected
ORDERPAY
records payment info for
SHIPTO
associates shipping info for
PRODUCT
MSHIPMODE
shipped via
shipped to
SHADDR

Figure 6. Data Model for the Ordering Process

When a shopper puts a product in his or her shopping cart, a record for this will be created in the SHOPPINGS table. When the shopper issues a SHIPTO command, an entry in the SHIPTO table will be made. At the moment of ordering, a shipto address (SHADDR table), a shipmode (MSHIPMODE table) and an amount must be added.

When a customer is placing an order, a row in the ORDPAYMTHD table will be made with the credit card details; a row in the ORDERPAY table will contain the tax data; and a row in the ORDERS table will be made containing the totals. The ORDERS table also contains the ORLOCK column to lock orders.

In general, a Net.Commerce shopping process consists of seven tasks:

- Looking at mall and store home pages
- Catalog browsing
- Adding products to the shopping cart
- Registration
- Filling out an address book entry
- Providing shipping information
- Ordering and payment

2.4.1 Home Page

This is the first thing a shopper sees when surfing to your shopping site. Besides using graphical elements to lure the shopper into your store, you may consider putting special sales offerings on this page.

Do not make your home page too busy and crowded. You must make it simple for your customer to get into your store.

Let the shoppers into your store without having to register in advance. A registration process might be a barrier for shoppers and might cause them to leave without even having seen your products. Place the registration process toward the end of the shopping trip. Of course, if you do not know who your shoppers are, you will not be able to present special offers to them, so give registered shoppers the opportunity to log on, right up front.

In the default shopping process, this home page is a flat HTML file. For easier maintenance, a dynamic page would be preferable for stores with frequently changing products that still want to make offers from the home page.

The URL of the dynamic home page is quite complicated. The Net.Commerce installation adds the following Service directive in the httpd.conf file to execute the Net.Data program whenever a URL has a path that matches /cgi-bin/msrvr/*

```
Service  /cgi-bin/msrvr/*    /usr/lpp/NetCommerce/cgi-bin/cmnicapi:Service/*
```

The following shows another way to create a static HTML introduction page from where you transfer shoppers to the dynamic page.

```
<html>
<META HTTP-EQUIV="Refresh" CONTENT="5;  ❶
 URL=http://www.itsoshop.com/cgi-bin/msrvr/;
     execmacro/mall_dir.d2w/report">
<head>
<title>Welcome</title>
</head>
<body bgcolor="#FFFFFF" LINK="#009C00" VLINK="#FF0000" ALINK="#FFFF00">
<p>
<center>
<a href="http://www.itsoshop.com/cgi-bin/msrvr/;
         execmacro/mall_dir.d2w/report">
<img src="/logo.gif" border=0></a>❷
</center>
</body>
</html>
```

The following is an explanation of the points highlighted in the preceding HTML example:

❶ This tells your browser to refresh this page after 5 seconds with the mall page.

❷ The clickable image gives the customer the opportunity to enter the mall earlier.

Include a nice graphic, but make it small enough so it is not annoying and slow to download.

2.4.2 Catalog Browsing

The catalog offers access to product categories, subcategories and products. It consists of two sets of pages:

- The category pages link shoppers to the groups of products or services available in the store. You can compare them to a table of contents in a paper catalog or signs in a real store. They have to include category titles and images, descriptions, and of course hyperlinks to subcategories or product pages.
- The product pages include descriptions, attributes, images and price of the products. They might also contain a link to related products or to detailed product evaluations. Additionally, the product pages should include a link for adding the product to the shopping cart.

Figure 7 shows a simple example of the hierarchical structure of category and product pages. This is one branch of the demomall that is included with Net.Commerce.

Hardware Store
Gardening Tools
Hand Tools
Watering Tools
Garden Utensilles
Hammers
Wrenches
Watering Can
Garden Hose
3 Piece Shovel Set
3 Piece Hand Tool Set
Claw Hammer
Ballpein Hammer
Regular Wrench
Socket Wrench

Figure 7. A Simple Set of Category and Product Pages

Catalog browsing works much the same way as browsing a paper catalog, but the electronic version has the significant advantage of placing hyperlinks to totally different pages.

2.4.3 Shopping Cart

The shopping cart or basket displays the items that the shopper potentially wants to order. You should regard it as a tool for shoppers to gather interesting products with, not as a necessary step in the shopping process. It should be there for the shoppers that need it, and optional for people that do not need it. It should not be in the typical order process.

Items remain in the cart until they are removed by the shopper. For registered users, the shopping basket is not only valid for the current session, but also for all subsequent sessions. Anonymous or guest shoppers lose their shopping cart information after leaving the store. However customers can select products and register later during their session without losing their products.

You also have to decide on the *scope* of the shopping cart. The shopping cart may be made valid for the whole mall, or for only one store in the mall.

2.4.4 Registration

When shoppers "register," they get a unique user ID and password, which can be used for subsequent visits to the store. This unique user ID and password can be stored in DB2, in a security access facility (such as RACF), or in a password file in the HFS.

Notes:

1. When an instance uses a security access facility such as RACF to store passwords, you cannot use the registration and administration forms to change shopper and administrator user IDs and passwords. The changes must be made by the security access facility administrator.
2. Both DB2 and RACF support sharing of this information in a sysplex; password files do not.

The merchant decides when the customer should register. As stated before, you may want to wait to ask the customer to register until he or she is close to really buying goods. Registration at this time is more natural than asking for identification when entering the shop, since the customer has to specify a shipto address anyway.

However, some functions will not be possible until a shopper is registered:

- Maintaining an address book
- Keeping items in the shopping cart
- Being a member of a shopper group (and thus getting discounts)

For merchants it can be an advantage to know who they are dealing with. Take this into account when deciding on the shopping trip anatomy. Make it attractive for customers to register, but also leave the option for shopping as an anonymous user.

The default registration page contains many fields. You may want to leave some data out, the demographic data for example, and concentrate on the necessary data for delivering the product to the customer. This way the registration form looks less overwhelming.

2.4.5 Address Book

The address book is quite a useful feature if shoppers want to order items not only for themselves but also for others, such as friends or family members. It offers the possibility to enter those friends and relatives into the database, refer to them via a short nickname, buy products for them, and have the products shipped directly to them.

It is up to you to decide (or to discuss with whoever you are planning an electronic shopping site for) whether it should be possible to ship products to addresses other than that of the person who places orders, and whether shoppers can use the address book or be required to enter shipping addresses manually.

Having the ability to maintain an address book makes the shopping process flexible, but might confuse some people.

2.4.6 Shipping Information

Shipping information consists of three parts:

- Entering the shipping address (from the address book or manually)
- Entering the items from the shopping cart to be shipped to this address
- Selecting the shipping provider

Once again, you have to decide which options would be appropriate for the type of store that you want to set up on the Internet. A small store might easily suffice without an address book and with just one shipping provider for all orders. A big department store selling products from a variety of manufacturers or a large mall hosting a number of individual stores might need the ability to choose from a range of shipping providers.

2.4.7 Ordering and Payment

The last steps after assigning shipping information to the selected products is to confirm the order and to initiate the payment process.

The shopper is presented with an order form listing the selected products, prices (including shipping costs and applicable taxes) and recipients. In addition, the payment method must be selected at this point. The standard procedure is to use a credit card payment. If you have a relationship with an eTill service provider (or a Gateway if you are going to be your own eTill) you can invoke the SET-based payment process. The SET protocol provides you with an almost certain way of identifying the shopper. The credit card payment method does not. Anyone who has access to credit card details (a waiter in a restaurant, someone at the store where the customer bought something previously, or even between a customer and an old-fashioned non-secure Internet shop) could enter these details and order merchandise. So you might want to check these before you ship the products.

Alternatively, you can choose any other payment method which can be invoked by calling user-defined functions or programs from within the Net.Commerce macros. (For example, CyberCash, DigiCash, First Virtual and others).

You will find the complete order information in the Net.Commerce database for further processing.

2.4.8 Default Shopping Trip

The shopping trip that is provided by Net.Commerce in the demonstration shopping mall is outlined in Figure 8. Depending on the store you are building, you may have to modify it.

Shopper
Store Home Page
Categories
Subcategory
Registration
Prepare an Order
Shopping Cart
Product
Place an Order
Acknowledgment

Figure 8. Net.Commerce Default Shopping Trip

Once you have designed your shopping site, including page layout and product pages, it is a good idea to perform usability tests on the site prior to making it live on the Web.

2.5 Post-Order Processes

Order fulfillment is an individual process that varies from company to company. Typically, the following tasks have to be dealt with:

- Accounting
- Tax calculation
- Shipping
- Inventory

What Net.Commerce does for you is put all necessary information into the database. It is your responsibility to use this information. At the moment there is no tool provided by Net.Commerce for viewing that data, so you have to choose another way for further processing.

Whichever way you decide to go from there is largely dependent on whether or not you already have backend systems in place to take care of the fulfillment processes, and what interfaces those systems provide to exchange information with Net.Commerce. The following list provides some examples:

- Use tie-in applications such as Taxware or Progistics Merchant.
- Save output in a flat file to be picked up by other processes or batch programs.
- Send extracted information as an e-mail.
- Send extracted information as a fax.
- Convert data to Electronic Data Interchange format (EDI), which is sometimes used for communications between existing merchant applications.
- Export information to other database systems.
- Develop your own APIs to send information online to existing backend applications (for instance CICS, IMS and ERP systems such as SAP R/3).
- Develop your own APIs to send information to backend systems using MQSeries.

Most of these options rely on the translation of the information from one format to another, even to flat files. This operation can be done online or as a batch process, depending on the fulfillment system you choose.

2.6 Possible Store Scenarios

To give you an idea in what kind of situations Net.Commerce could be used, and how it could be used, examine the following three scenarios:

1. Large single store
2. Small mall
3. Large mall

2.6.1 Large Single Store

- 1 shop
- 10 main categories
- 100 subcategories
- 10000 products
- Connection to backend fulfillment systems

A big store will typically be an existing department store or mail order company. They already have a database with specifications of the products to sell. The system will be maintained by a dedicated staff. The company will host the system itself.

Whether the store will look like a single store or like a mall is a marketing decision. Some big stores might prefer looking like many smaller, specialized companies.

The question whether the company wants to use the existing database or set up a new one depends on the security of the system. Especially for mission-critical systems, speed and reliability should not be much affected by adding an online Net.Commerce application.

For maintaining the information in the database, the merchant probably will not rely on the HTML-based customization forms provided by Net.Commerce. This system is complicated (for updating a product you may need to change up to 5 pages) and not very fast. For maintaining 10000 products, an administrator will need direct access to the database(s). He or she will want to directly manipulate columns and tables for changing prices, availability and so on. Net.Commerce currently does not provide a tool to directly manipulate the database. However, the online help documents each field in each base table to help facilitate this. Product Advisor can also be used to search through the 10000 products to aid the administrator when organizing product updates.

2.6.2 Small Mall

- 3 shops
- 15 categories
- 60 subcategories
- 300 products

This mall will be maintained by a dedicated staff, probably a small content hosting company doing this as their main business. The shops could be considered as three small shops, but they could have common parts and share a common database, server, security setup, and so on. Some shops will want their own shopping cart, navigation and ordering process, while some may not. For customizing this you can use the Task Manager to specify which macro or API to use for which task for which shop.

The merchants could use a common promotion site, where products of all companies are featured. This could be a macro that searches the database for all current specials.

A combination of shops that complement each other and have a common fulfillment system could resemble a department store. If they make an integrated look, they could compete as a high-quality shop/mall where customers can buy all they need in one stop.

2.6.3 Large Mall

- 50 shops in 5 categories
- 500 categories in 50 main categories
- 25000 products
- Some conversions of existing databases
- Connection to backend fulfillment systems

A big mall could consist of 50 shops or more. Big malls will host their own site. The hosting company will run a large single server or run a Parallel Sysplex with the following main tasks:

- Keeping the hardware running and up-to-date

- Administering the mall (site manager)
- Writing applications to run in the mall or connecting to backend fulfillment systems
- Helping merchants design their shops
- Running a help desk for merchants and/or customers

In a big mall, the possibility of merchants offering the same kind of products is very great. Using search tools across the mall is interesting to customers, possibly more than for most merchants themselves, because it encourages competition, especially on price. As a result, you may have merchants competing over whose products are located first by the Web server's search engine.

Chapter 3. Advanced Planning

This chapter discusses planning aspects for Net.Commerce and its related products. It is our intention to illustrate that, though Net.Commerce comes on a 3480 cartridge, there is a lot more to consider about this product than just installing it out of the box, connecting to the Internet, and being ready to receive orders.

3.1 Planning a Net.Commerce Project

To set up a Net.Commerce shop you need a variety of specific skills, because the quantity of required resources depends on the level of customization needed for the shop. In the simplest case, the system has already been set up for you, and all you have to do is build a small, simple store that is similar to the default or the demomall provided. In this situation, you may need only the time and skills necessary to design your static and dynamic pages and customize the shopping process a little.

3.1.1 Skills Profile for Advanced Scenarios

However, if you have more ambitious plans and would like to get started on your own, you have a greater challenge ahead since you need all of the following skills for this project:

- OS/390 UNIX System Services skills
- Web server setup, customization and tuning skills
- HTML skills for the static pages
- DB2 setup, administration and problem determination skills
- SQL and Net.Data programming skills for the macros
- Graphical design skills including photography
- User interface/interaction design skills and information design
- Java, JavaScript and multimedia application development skills
- API programming skills using the C language and compiler under UNIX System Services
- Payment system (SET) skills
- Network skills (TCP/IP, security, Internet access)
- Marketing and sales experience
- Project management experience

As you can see, unless you happen to have most of the listed skills or know someone who does, the design and development efforts for a complex Net.Commerce site should be given to a team of specialists. You might also want to add a business consultant to that team to assist in the transition process from your existing store to selling over the Internet.

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Web & Media Design
System & Network Admin
Net.Commerce System
Business Policy
DB Admin

Figure 9. Net.Commerce Implementation Team

3.1.2 Time Schedule

As with all IT projects, the time schedule involved very much depends on the knowledge available about the topics to be covered. If you have to acquire all needed skills before or while creating the shop, it will be a long and difficult process. Even if you possess (or have access to) most of the skills, hardware and software, it may be a several weeks before you can get a shop online.

Other factors to consider are:

- Connections to backend systems
- Connections to payment systems
- Amount of customization required, especially programming work to be done
- Completeness of the information
- Availability of product images, logos, and so on.

3.1.3 Who Will Be Your Service Provider?

For a Net.Commerce project and shopping site, you can certainly choose to develop and host everything at your own location. Or you may want to have a service provider, for instance IBM, do everything at their site. Or you may choose a combination of the two.

One solution would be that the merchant has the content hosted by a dedicated service company. That way, setup and maintenance of the hardware, the network, and the customization and connection of most of the software and security components are done elsewhere. This is not as easy as hosting a normal (passive) Web site, though, because a connection to the database is needed, and testing and updating macros and APIs can be difficult.

3.1.4 Marketing and Design

Graphical design, Java, and multimedia programming are highly specialized jobs that are best left to professionals. User interface and information design for the simplest shops can be done by common sense, but for larger shops professional advice might substantially improve the appearance on the Web. User interface and information designers can help decide what information to include for products and categories, as well as design a useful and attractive layout of the pages. This makes the shop more transparent and makes it easier to find the products the customer wants.

Last but not least, you need to think about marketing. Many shops are set up from the technical point of view. Much can be improved by having a good marketing vision before setting up the shop.

So while it is possible to build your own shop as a small merchant, it is just not realistic to expect a single person to establish a large shopping site without help; the range of necessary skills is just too wide.

3.2 Database Considerations

The Net.Commerce database is a relational database. It contains all the information that is used by the Net.Commerce system, from basic information needed to run the Net.Commerce server, to information that pertains to individual shoppers, items, and prices. The database also includes pointers to images, macros, API programs, and HTML files.

The Net.Commerce database consists of a collection of tables. Every time you perform a task from the forms in the Net.Commerce Administrator, such as adding a new product or entering information in the forms and then click **Save**, you are storing the information in one or more tables in the database. Every time a customer registers, selects and orders products the database tables are automatically updated with the new data. The database contains customizable merchant-reserved columns. Merchants can also customize the database by adding new tables.

Database features include:

- An index mechanism
- Database views
- Delete cascade mechanisms to preserve the referential integrity of the relationships between tables in the database.

3.3 Web Server Considerations

When planning the setup of your Net.Commerce Server, one challenge you face is determining the right "size and strength" of the hardware so that it can provide the best response time to a client's request. There are a number of things to consider.

The publication *Net.Commerce: Configuring and Getting Started*, GC24-5862 discusses the specifics and minimal considerations in hardware and software you need in order to set up and run Net.Commerce for OS/390. In this redbook, however, we will explain the more general factors that have to be considered for a Web server in the Internet environment. These include:

Hits per day: A "hit" is anything that the Web server catches whenever a home page, or element within the home page, is accessed. This includes everything from HTML code, graphics, and animations, to multimedia sources such as video or sound. The hit has become the main measure by which a Web server's accessibility and functionality are judged.

Quite often, however, the number of hits on a Web server reflects the design of the pages, rather than the actual number of people accessing your page. While such numbers may be good for the advertising department, it is recommended to reduce the number of hits per page in order to have faster access. Caching heavily accessed pages in either the Web server's cache or the Net.Commerce cache in DB2 can also help improve performance.

Sizes and types of files: It is always important to know how many resources you need in order to store all the information in your server, and to also know what kind of information and applications are going to be placed on the server, that is, whether they are *static pages* or *dynamic pages*.

Static pages are those that are going to be stored on the server without making changes to them every time someone wants to access them. Such pages include most HTML text, graphics, video, sound, and so on.

Dynamic pages are those that must be created anew whenever someone hits them (CGI, forms, macros, and so on). Dynamic pages will always require much more server resources because the server, instead of returning an existing file, will have to first create the file to be returned.

On average, a WWW transaction takes from 1 to 5KB if it is only text, 10KB for text and graphics, 100KB with multimedia, and more than 100KB for multimedia and applications.

It is important to note here that Net.Commerce most often uses dynamic pages.

Regarding your Net.Commerce Web site, there are even more factors to consider:

Number of concurrent users: It is always useful to have at least a rough idea of how the hits on your server will be distributed over a 24-hour period. This will allow you to identify, for example, your peak usage periods for concurrent users, and as a result give you a better idea of your server hardware needs.

For example, consider the difference between a server handling one million hits per day spread over 24 hours, and one that has to handle the same volume (or even 80%) over an 8-hour "peak" period. Obviously, the latter scenario would require a much more powerful machine.

Of course, concurrent use is not the only parameter you will have to consider. As noted earlier, file size and type (dynamic or static), as well as peak hit periods must all be considered, and they must be considered *together* as part of an interactive process.

For more information about capacity planning, you can visit the following URLs:

`http://www.s390.ibm.com/products/oe/dgwperf.html`
`http://www.ics.raleigh.ibm.com/capacity/howfast.htm`

Connection speed: This factor is one of the most important in the performance of an electronic-commerce Web server system, and the one where quite often good results do not depend directly on the design of the solution. Here you have to consider bandwidth, internal network speed, and the Internet Service Provider (ISP). The bandwidth recommended for any Web server with commerce applications on the Internet is at least T1.

Ultimately, the end user will receive information from your server according to the speed at which his or her ISP allocates it; thus, some factors will always be beyond your control.

Network backup and recovery: Consider using Virtual IP Address Support (VIPA), a feature of TCP/IP for network backup and recovery. VIPA allows for the definition of a virtual IP interface and a virtual IP address independent of physical interfaces (communication adapters). A virtual device will always be active and never sees a failure. VIPA provides tolerance of failures of OS/390 network attachment hardware.

The RouteD application running on the OS/390 system provides Routing Information Protocol(RIP) support to broadcast routing paths to adjacent routers so that they can reroute inbound traffic in case of physical interface failures.

Security and Integrity: A major concern of commercial and government enterprises is the security and integrity of their data. This concern is magnified when connections to the Internet, or even extended access through an intranet, are considered. OS/390 provides a very strong framework for control of data access, and for maintaining the integrity of data. Security is controlled by the System Authorization Facility (SAF), which checks all access requests to system resources, using an external security manager (such as the OS/390 Security Server, formerly known as RACF) to grant or deny access to resources.

All requests made to the Domino Go Webserver are given a user ID, and work is done in the server on behalf of that user ID. Therefore you can use the Security Server to restrict access to system resources, and be confident that a Web user cannot compromise the security of your system.

Availability: OS/390 systems are used in environments where high availability is crucial. For example, many banks run their ATM machines from OS/390 servers, with very high levels of availability. For Web applications like Net.Commerce, availability becomes very important for several reasons, including:

- The Web "culture" has caused us to become very impatient consumers of information. If a particular Web site is not available or is responding slowly, clients will tend to shift their attention to another site, perhaps that of a competitor.
- The Web extends the "hours of opening" for your enterprise to 24 hours a day, since clients can be spread across the world. In addition, even in your own time zone, clients will require connections to your site outside of your regular business hours.

OS/390 servers are already designed and configured to deliver the levels of system availability required, especially in a Parallel Sysplex environment.

3.4 Examples of Aspects of Local Legislature

In this section we briefly look at some legal implications that you may have to face when you intend to set up a Net.Commerce site.

Depending on the state or country where your store or mall is located, you are subject to local laws that regulate electronic commerce, if such laws are in place. It is your responsibility as the planner or owner of an electronic shopping site to obtain information on such regulations before you go online with your system. Places to turn to for more details on that matter would be, among others:

- City, County or District Chambers of Commerce
- The local association of lawyers
- The state legislative library, or equivalent, where all bills can be found that have either passed or otherwise been brought forward to those legislative bodies.

No matter what products you are going to sell over the Internet, it is more than likely that there are certain regulations in place and applicable to your business. The legal issue is especially important if you plan to install sites in different states or countries, or if you are operating in a multi-cultural society where several official languages are spoken and/or required. If you are uncertain if or to what extent your online store would be affected by local legislation, we strongly advise that you contact a lawyer.

We have done a little research on that matter and found some examples which we have included in the following sections. We have also tried to separate those issues that are primarily related to Internet commerce from such regulations that affect any kind of commercial interaction between merchants and customers.

3.4.1 Regulations for Electronic Commerce on the Internet

The following sections list examples of legal acts dealing specifically with electronic commerce or information exchange over the Internet.

3.4.1.1 New US Export Regulations for Encryption Keys

On October 1, 1996, the US Government announced a plan to make it easier for Americans to use stronger encryption products to protect their privacy, intellectual property and other valuable information. The plan envisions a worldwide key management infrastructure, with the use of key escrow and key recovery encryption items, to promote electronic commerce and secure communications while protecting national security and public safety.

To provide for a transition period for the development of this key management infrastructure, this rule permits the export and re-export of 56-bit key length DES or equivalent strength encryption items under the authority of a License Exception if an exporter makes satisfactory commitments to build and/or market recoverable encryption items and to help build the supporting international infrastructure. This policy applies to hardware and software.

3.4.1.2 California Assembly Bill 3320 (1996)

This bill regulates sales over the Internet, and other electronic media, in the state of California. It is the expansion of an existing bill regulating the sale, lease, or offering for sale or lease of goods or services by telephone, mail order, or catalog. The bill requires a vendor conducting business through the Internet or any other electronic means of communication to make specific disclosures to a buyer.

A merchant in California who wants to do business over the Internet would therefore have to do, among other required actions, one of the following within 30 days (or an otherwise clearly specified period of time) of payments received:

- Ship ordered goods or services.
- Mail a full refund or credit the account where payments have been transferred from if merchandise is not available or has not been shipped.
- Send a letter to the buyer advising of a delay in shipment, or offering a substitution of the goods or services ordered (which would have to be of equivalent or superior quality), or offering a full refund.

When a merchant outside the state conducts business electronically with a buyer in California, the merchant would then have to disclose to the buyer, in writing or electronically, the merchant's return and refund policy, the legal name under which the business is conducted, and under certain circumstances, the business address of the merchant.

It is likely that similar legislation will be introduced in other states and countries.

The full text of the bill can be obtained from the California Legislature Web site at the following URL:

`http://www.leginfo.ca.gov/cgi-bin/postquery?house=A&sess=PREV&bnumber=3320`

3.4.1.3 Requirements for the Use of Cryptographic Software in France

In France, cryptographic systems are regarded as weapons.

By law any product capable of enciphering/deciphering user data must obtain a license from the French administrative government service named Central Service for Information Systems Security (SCSSI) before being marketed. Then customers need to be authorized to use them on a case-by-case basis. It usually takes around six months before any such authorizations are granted.

In reality, two major and useful exceptions exist:

1. Routinely, licenses are granted that allow banks to use DES products on a global basis (no case-by-case authorization is needed).
2. Routinely, global licenses are granted that allow anybody to use weak encryption (RC2/RC4 with 40-bit keys).

You have to carefully review the issue of electronic commerce in France or with any business partners in France because the products are evolving faster than licenses can be obtained.

When you plan or have a business need to exchange ciphered data with French partners, you have to check which options you are allowed to use. Normally 56-bit DES keys are allowed for banks and 40-bit keys are allowed for other users. Currently, it is also uncertain when DES keys will be allowed for SET protocols.

3.4.1.4 Acceptance of Electronic Transactions As Court Evidence

Other issues relate to repudiation of a transaction and electronic contracts in court. To date, no one has taken anyone to court as far as we are aware, but an electronic contract was still non-binding, for instance, in South Africa, at the time this book was written. This issue has been raised by contacts from other countries as well.

3.4.2 General Regulations for Commerce

The following sections list examples of legal acts dealing more generally with business requirements for commercial enterprises.

3.4.2.1 National Language Requirements in Quebec, Canada

Canada has two official languages, French and English. The majority of French-speaking people in Canada reside in the province of Quebec, and the Quebec provincial government pays close attention to French language issues.

The laws affect merchants who wish to do business in their province. If a business has more than 35 employees in the province, they must provide the ability to do business in French. This affects merchants who have stores in the province. They may be requested by the Quebec government to provide shopping services (both the products in the store, which is the responsibility of the merchant, and the site itself, which is the responsibility of the site host, and includes the shopping basket and checkout capabilities) in French.

Although this does not prevent merchants from opening stores and going online, written requests from customers have been received in some cases to provide this service, with the expectation that this function would be available in the near future.

In such environments, the ability to select a language for checkout, driven by a table of terms such as "add to shopping basket," "name," "address," and so on would be a differentiating feature to a shopping site.

3.4.2.2 Bottle Return and Refund System in Sweden

In Sweden, according to our information, a merchant who sells bottled goods such as mineral water or juice is required by law to provide means to take back empty bottles and refund a certain amount of money to the customer who returns the bottles. Such regulations are likely to be in place in other countries as well.

In this case, and in comparable situations, you have to develop your own macros and APIs for Net.Commerce because the system does not provide you with routines to handle such return and refund situations.

3.4.2.3 Inclusion of Applicable Taxes in Product Prices

Some countries require, very much in contrast to the U.S., that the price for any item sold must include all applicable taxes and duties so that it constitutes the effective amount of money that a customer will have to pay for that item. Some countries also require merchants to explicitly specify any applied tax rates.

3.4.2.4 Monetary Control in South Africa

Monetary control has the affect that any monies leaving the country, typically via the Internet, would first have to be cleared by the Central Reserve Bank of South Africa. This method is and has been found to be cumbersome, and as such is generally ignored, but it still is a legal requirement.

Chapter 4. Net.Commerce Installation

The Net.Commerce Program Directory, GI10-4657, contains details of the requisite software and hardware for the product as well as installation instructions. This chapter serves as a supplementary guide to that document.

You can find all the Net.Commerce documentation along with sample code for CICS/ESA and IMS/ESA to help in accessing back-end databases, order entry applications, and customer-service applications at the following Web site:

`http://www.s390.ibm.com/nc/ecommerce/index.html`

Note: It is very important that you check the Net.Commerce Preventive Service Planning (PSP) bucket before starting the installation. Check the Net.Commerce Program Directory, GI10-4657 for the PSP bucket upgrade and subset names.

4.1 Product Requirements

The Net.Commerce product is made up of a number of elements, some of which are optional. Depending on whether or not you choose to install these elements, you may need to install additional requisite products. For example, eTill is an optional element that provides secure electronic transfer of money over the Internet by exploiting the SET protocol. If you wish to use this facility, you will need to install CommercePOINT eTill for OS/390. For more information on eTill, see *eTill Administrator's Guide*, SC24-5869.

4.2 Installation Steps

The Net.Commerce product distribution tapes provide sample JCL to aid with the installation of the product. After you run the SMPE RECEIVE job for the product, the sample JCL will be in the *smptlib-hlq*.IBM.H01B310.F1 data set. You should copy these pre-APPLY installation jobs to your own JCL library, where you can customize them to suit your site's requirements.

4.3 Pre-APPLY Installation Jobs

On the whole we found these jobs quite self-explanatory. However, they take into account sites that may already have installed Net.Commerce V1.1 by splitting the job into sections referring to H24G111 - the FMID for Net.Commerce V1.1, and H01B310 - the FMID for Net.Commerce V3.1.

For example, the DDDEFALC job in member CMNISDDD has two steps for defining the dddefs for the Net.Commerce product. The first step adds dddefs that existed in V1.1 of the product, and the second step adds new dddefs introduced in V3.1.

It is worth pointing out that if you already have V1.1 installed, the job would receive the following error message and a return code of 8:

```
GIM35601E - data set subentry was not added because it already exists
```

You may wish to change the ADD statements to REP to avoid this message. Note, however, that this will result in a return code 4 for the job and a warning message stating that entries were replaced instead of added.

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Table 1 on page 40 lists the sample pre-APPLY jobs

Table 1. Net.Commerce Installation Sample Pre-APPLY Jobs.

Member	JOB Name	Description
CMNISDDD	DDDEFALC	Sample JOB to define SMP/E DDDEFs
CMNISALC	DSALLOC	Allocates the Target and Distribution Libraries
CMNISHFS	HFSALLOC	Allocates HFS space and sets mount point
CMNISMKD	MKDIRS	Sample JOB to invoke CMNMKDIR
CMNMKDIR	n/a	Sample script to create directories and symbolic links.

4.3.1 CMNISDDD

- The job is split into different sections for defining dddefs for the Net.Commerce V1.1 and Net.Commerce V3.1 products, as described.
- The JCL is written to split the target data sets over two DASD volumes. If you want the data sets on a single volume, change the volsers accordingly. This is the approach we took.

  Note: A new set of guidelines on data set placement has been introduced by IBM. Data set placement recommendations are not mandatory, but provide a good foundation for many recent functional and system management enhancements (such as sharing a master catalog, indirect volume serial support, UNIX System Services, and Parallel Sysplex). For more information, see *OS/390: Planning for Installation*, GC28-1726.
- The DEFPATH step will allow you to change the dddef for the root directory HFS from / to /SERVICE/, for example. Note that this step is written to cater to a mixed environment where some directories are already under a /SERVICE/ path, but some are not. This step would change any already existing /SERVICE/ entries to /, then convert *all* / entries to /SERVICE/.

  If you do not have a mixed environment like this, then you would only want to run the first part *or* second part of this step, because running both would revert you back to the original dddef.

4.3.2 CMNISALC

- This job allocates and catalogs the target and dlib data sets. Note that, as with the previous job, the JCL is split to allocate data sets from V1.1 of the product and V3.1. The target data sets are also defined over two volumes.

4.3.3 CMNISHFS

- This job will allocate an HFS for the Net.Commerce product and mount this new filesystem at a new mountpoint. We used /usr/lpp/NetCommerce as our mountpoint, which is the default.
- If you are installing the product into the root directory, as we did, then remove the -ROOT- entry in this job.
- Remember to add the relevant entries to your BPXPRMxx member to make the mount permanent.

4.3.4 CMNISMKD

- This job runs the CMNMKDIR exec which builds symbolic links and HFS directory structures for the product. Again, we changed -ROOT- to /.

4.3.5 SMP/E APPLY and APPLY CHECK

- We found we had to increase the region size for this job; otherwise we received the message:

```
BPXF103E RETURN CODE 00000004 WAS RECEIVED DURING AN ATTEMPT TO
OBTAIN STORAGE FOR A BUFFER.
```

4.3.6 Add SCMNLMOD to LNKLSTxx or PROGxx Member of SYS1.PARMLIB

Generally it is advisable, from a performance perspective, to use the linklist rather than to steplib to a library that is required by a user under UNIX System Services. The SCMNLMOD library can either be placed in a STEPLIB in the Web server started procedure, or it can be placed in the linklist. The latter is the option we chose.

The system we used in Poughkeepsie exploits dynamic linklist, so the addition of a new library was a relatively simple task. The following describes the steps we performed to add the CMN.SCMNLMOD library to the linklist dynamically.

- Temporarily add the library to the current LNKLST set and activate the new set using the following commands:

```
SETPROG LNKLST,DEFINE,NAME=TEMP.LNKLST,COPYFROM=CURRENT
SETPROG LNKLST,ADD,NAME=TEMP.LNKLST,DSNAME=CMN.SCMNLMOD
SETPROG LNKLST,ACTIVATE,NAME=TEMP.LNKLST
```

- Add the library to the LNKLST member that is read at IPL time, either in the LNKLSTxx member or in a PROGxx member where you may keep dynamically defined libraries. On our system, dynamically defined libraries are kept in SYS1.PARMLIB(PROGC0). Authorized Program Facility libraries are kept in SYS1.PARMLIB(PROGA0), and both members are referenced in the SYS1.PARMLIB(IEASYS00) entry. The entry in PROGC0 looks like:

```
LNKLST Add Name(LNKLST00)
       Dsname(CMN.SCMNLMOD)
```

4.4 Configuring a Net.Commerce Instance

This section describes how to set up the *demomall* which is a sample mall that is supplied with the Net.Commerce product. Refer to *Net.Commerce: Configuring and Getting Started*, GC24-5862 for further information about this topic. In order to configure your Net.Commerce instance, you will need to know some information related to your system environment as shown in Table 2 on page 42.

Table 2. Information You Will Need To Have At Your Fingertips.

Description	Our installation	Your installation
High Level Qualifier (hlq) of Net.Commerce data sets	CMN	
High Level Qualifier (hlq) of DB2 data sets	DB2V510	
High Level Qualifier (hlq) of Web Server data sets	IMW	
DB2 Subsystem Name	DB51	
Name you wish to use for Net.Commerce plan	MSERVER	
Name you wish to use for Net.Commerce database(s)	ITSODB	
Name of the user ID(s) that will own the DB2 database(s)	ITSODBU	
Name of the user ID under which the Web Server will run	WEBSRV	
Name and location of the Web Server configuration file	/etc/httpd.conf.imwebsrv	
Name of the OS/390 data set that contains the TCP/IP config. information	/etc/resolv.conf	
Fully qualified TCP/IP name of the machine on which the Net.Commerce instances will run	wtsc58oe.itso.ibm.com	
Web Server Instance Host Name	www.itsoshop.com	
Naming convention you'll use for the Net.Commerce instances ('inst1','inst2')	ITSOINST	
Location of the NCS instance configuration files WWW_HTML_PATH	/usr/lpp/NetCommerce/html/en_US/itsoinst	
Name of the NCS instance config file	mserver.conf	
Name of the NCS instance environment file	mserver.envvars	
Net.Data initialization file used by the NCS instance	db2www.ini	

4.4.1 Getting Started - Demomall

The demomall is an example of a Net.Commerce instance. An *instance* is a Net.Commerce server with its associated DB2 database interacting with a Web server. The demomall provides HTML pages, CGI scripts and all the other goodies that make up an Internet shop. Net.Commerce for OS/390 also provides a second sample mall: the *business-to-business* mall. But for now we will concentrate on demomall, which is a consumer to business mall.

The sample demomall provided with Net.Commerce is based on the idea of a shopping mall, or arcade. You enter a shopping mall by the main entrance and have a selection of shops providing different goods within the mall to choose from. These shops may be hardware stores, clothing stores, shoe stores, or even department stores. Each store has its own entrance within the mall and once inside the store, it will have different sections for the different goods it sells. In the case of a department store, it will have departments and sections within departments. For example, it might having a clothing department, and within that have sections for ladies' and gentlemen's fashions.

The demomall provides an Internet version of this shopping mall scenario. The mall is called *The Metropolitan*, and its main entrance is the URL for the Web site, for example `http://www.itsoshop.com` (the *instance hostname*). Once you have entered the mall, you are presented with a number of stores you can shop in by clicking the store's name. Each store has further links to the different product sections. *6th Avenue* is one such store inside the mall.

The demomall has been designed to provide you with a wide range of possible shopping scenarios. It is probably more in line with a service provider's Web site, providing the Internet access and resources for a number of companies who want their goods available on the Internet, rather than with an individual company that just wishes to have its own products accessible by Internet shoppers. Thus, the concept of "malls" and "stores" can get confusing. In this redbook we use the following naming for the Internet shop we will build.

To allow us to provide examples of multiple Net.Commerce instances or *merchants* accessing the same Net.Commerce database later on in this book, we use the following terminology to differentiate between the Net.Commerce databases and instances:

- *ITSODB* is the name used for the mall database we will use. In our example, this will be the sample demomall provided with Net.Commerce.
- *ITSODBU* is the name used for the user ID that owns this database. This is the user ID under which all the instances or *merchants* that access the ITSODB database will run.
- *ITSOINST* is the name used for the initial instance we will define.

Firstly, you will need to have some information about your OS/390 and DB2 systems. It is worth collecting these details at this point:

- The name of the DB2 subsystem you intend to use for the Net.Commerce database. We used *DB51*.
- The HLQs used for your DB2 data sets. We used *DB2V510*.
- The HLQs used for the Domino Go Webserver. We used *IMW*.
- The TCP/IP data set naming convention. For TCP/IP for OpenEdition, some of these files may be in the HFS structure under /usr/lpp/internet or /etc.

- The fully qualified TCP/IP name of the OS/390 machine on which the Net.Commerce Server instances will run. We used *wtsc58oe.itso.ibm.com*. If you do not know the fully qualified hostname, try looking in the TCPIP.DATA data set or in the /etc directory for a hosts file.
- The HLQs for the data sets in which you installed the Net.Commerce product. We used *CMN*.
- The user ID under which the Web server runs. This is the user ID associated with the Web server started task. We used WEBSRV.

4.5 Enabling Access to Resources

After you have installed the Net.Commerce product, you need to prepare to configure the system. This section describes the following procedures:

1. Allowing PUBLIC access to your Web server.
2. Enabling Program Control.
3. Enabling Net.Commerce Database access.
4. Updating the sample Net.Commerce startup procedure.
5. Defining the started task.
6. Updating the Web server startup procedure.
7. Binding the DBRM to the Net.Commerce plan.
8. Configuring the Net.Commerce system.
9. Granting database administrator authority to the Web server.

Some of the examples and descriptions used in this book reflect assumptions that may not apply to your environment. Following are descriptions of these assumptions, along with guidance on how to use the book if they do not apply to you:

- We refer to the security product RACF, or Security Server. However, you can use any OS/390 external security manager that provides equivalent support, substituting the appropriate procedures where necessary.
- The default name /usr/lpp/NetCommerce is used for the directory in which Net.Commerce was installed. If you used a different name, it must be substituted where necessary, in particular, in the Access Control panel in the Configuration Program. See Figure 18 on page 57.

4.5.1 Allowing PUBLIC Access to Your Web Server

Ensure that the UserId directive in the httpd.conf file for your Web server is set to PUBLIC. The httpd.conf file is usually in the /etc directory.

4.5.2 Enabling Program Control

If you are using the BPX.DAEMON facility class in RACF, then you will most likely have Program Control enabled. This is an area that can cause problems when configuring the Web server. A situation known as a *dirty address space* can occur if a program without Program Control defined is called into the program-controlled Web server address space. RACF sets the "dirty bit" on and an error message of `errno2: 0be802af` is received.

This problem is usually caused when the definition for the data set that is to be program controlled is set up incompletely. It can occur particularly when two SYSRES volumes are in existence, where one is an IPL volume and the other is a maintenance volume which, once successfully tested with the new maintenance, becomes the new IPL volume. The dirty address space problem arises when the data set which was program-controlled on the original IPL volume is called from the new IPL volume, but has not been defined to RACF as program controlled on this new volume.

To answer this issue, the ability to define a data set on a non-specific volume was introduced. This enhancement has been provided in APAR OW24881 and is integrated in OS/390 Security Server R4 and above.

The commands we used to enable Program Control:

```
RALTER PROGRAM * ADDMEM('CMN.SCMNLMOD'//NOPADCHK) UACC(READ)
SETROPTS WHEN(PROGRAM) REFRESH
```

Note the lack of a specific volser between the forward slashes. Also note that if this is the first time you are using Program Control, the command would be RDEFINE as opposed to RALTER.

Refer to *OS/390 OpenEdition Planning*, SC28-1890 for more details on Program Control and the BPX.DAEMON facility class.

Note: If you get a dirty address space refer to *OS/390 OpenEdition Planning*, SC28-1890 for information on how to set up a SLIP trace to identify modules which are not program-controlled and may be causing the dirty address space.

It is worth noting that files in the HFS can also be program-controlled, and if a non-program controlled file is accessed, in much the same way as a non-program-controlled module is accessed, you may also get a dirty address space. The error message displayed is *090c02af*, which is slightly different from the non-program controlled module error.

There are informational apars which describe in detail how to trace these error conditions. At the time of writing, these APARS were II08176 and II10548 for tracing dirty address spaces in the OS/390 environment and in the OMVS environment, respectively.

4.5.3 Net.Commerce Database Access

Every Net.Commerce database you build requires access definitions to be set up to allow data to be read from and written to the database by shoppers accessing your mall, as well as by your own site administrators. This is achieved by creating unique user IDs that own each Net.Commerce database, and by granting database administrator authority to the Web server for each database.

Each Net.Commerce database owner user ID must have the following attributes:

- A UID of 0 to provide superuser authority
- Read access if you have defined the BPX.DAEMON facility class
- Update access if you have defined the BPX.SERVER facility class
- Read access to the data sets defined in the startup procedure for the Net.Commerce instance

We used the following RACF commands to define the security environment for a new Net.Commerce instance. Note that the group need only be defined once, whereas the user and permission definitions will be required for each database owner user ID.

```
ADDGROUP CMNGRP SUPGROUP(SYS1) OMVS(GID(2))
```

Note that the value for the GID here is arbitrary. The value you choose will depend on whether or not you have already used the GID of 2 for another OMVS group. The GID here should be unique. Refer to *OS/390 OpenEdition Planning*, SC28-1890 for more details.

```
ADDUSER ITSODBU DFLTGRP(CMNGRP) OMVS(UID(0) HOME('/usr/lpp/NetCommerce')
PROGRAM('/bin/sh'))
PERMIT BPX.DAEMON CLASS(FACILITY) ID(ITSODBU) ACCESS(READ)
PERMIT BPX.SERVER CLASS(FACILITY) ID(ITSODBU) ACCESS(UPDATE)
SETR RACLIST(FACILITY) REFRESH
```

RACF user ID ITSODBU must also have read access to the data sets accessed by the Net.Commerce Server (NCS) instance startup procedure. The sample procedure is discussed in 4.5.3.1, “Update the Sample Net.Commerce Startup Procedure.”

4.5.3.1 Update the Sample Net.Commerce Startup Procedure

Each NCS instance must have its own startup procedure. This procedure defines the data sets and startup parameters that the instance will use while running. A sample startup procedure is supplied in *hlq*.SCMNSAMP(CMNMSERV), where *hlq* is the HLQ you chose for the Net.Commerce target data sets.

We made the following changes to our startup proc:

- Changed all occurrences of CMNMSERV to ITSOINST.
- Changed the startup parameters on the EXEC statement so that tracing is active. This is highly recommended as even with very verbose switched on in the Web server configuration (-vv parameter in httpd.conf), little information about the NCS instance is sent to the Web server SYSLOG. We allowed the output of the trace to go to stdout. See section 4.9, “Using Traces To Debug Net.Commerce System Problems” on page 69 for more information on tracing Net.Commerce when we run the Configuration Program, CMNCONF.
- Changed -AAAAAAA- to /usr/lpp/NetCommerce/html/en_US/itsoinst.
- Changed -XXXXXXX- to CMN, the HLQ for our Net.Commerce data sets, although, since we placed CMN.SCMNLMOD in the LNKLST, we commented out the line with this data set.
- Changed -YYYYYYY- to DB2V510, the HLQ for our DB2 data sets.
- Changed -ZZZZZZZ- to IMW, the HLQ for our Domino Go Webserver data sets.
- At this stage we are not using eTill support, so we comment out those lines with -BBBBBBB- and -CCCCCCC-.

Figure 10 on page 47 shows the updated startup procedure for our instance, ITSOINST. Notice also that this sample exploits the ability to split the parameters that are passed to the procedure over multiple lines. In this particular example, a single line would have sufficed, but in many cases the

parameter string is too long to fit on one line, and the technique shown here should be used.

```
//ITSCINST  PROC P1=' / -tr',
// P2=' -i /usr/lpp/NetCommerce/html/en_US/itsoinst'
//*
//ITSCINST  EXEC PGM=MSERVERD,
//   PARM=('&P1 &P2'),
//    REGION=0M,TIME=(1440)
//*
//STEPLIB  DD DSN=DB2V510.SDSNLOAD,DISP=SHR
//         DD DSN=DB2V510.SDSNEXIT,DISP=SHR
//         DD DSN=IMW.SIMWMOD1,DISP=SHR
//*        DD DSN=CMN.SCMNLMOD,DISP=SHR
//*        DD DSN=-BBBBBBB-.SCOTLMOD,DISP=SHR
//*        DD DSN=-CCCCCCC-.SCLBDLL,DISP=SHR
//*
//SYSIN    DD DUMMY
//SYSPRINT DD SYSOUT=*
//CEEDUMP  DD SYSOUT=*
```

Figure 10. Updated Startup Procedure for Instance ITSOINST

4.5.4 Defining the Started Task

The startup procedure for each instance must run under the user ID that owns the Net.Commerce database used by the instance. The started task associates the startup procedure with the database owner.

For example, to define a started task for our startup procedure ITSOINST, and database owner ITSODBU, enter the following commands for RACF:

```
RDEFINE STARTED ITSOINST.* STDATA(USER(ITSODBU))
SETR RACLIST(STARTED) REFRESH
```

4.5.5 Web Server Startup Procedure

Since we placed the CMN.SCMNLMOD data set in the LNKLST, the data set does not need to be placed in a STEPLIB in the Web server startup procedure.

4.5.6 Binding the DBRM to the Net.Commerce Plan

This is where a little DB2 knowledge will come in handy. To allow the Net.Commerce instances to communicate with the Net.Commerce databases, you must bind your DBRM to the Net.Commerce plan. The Net.Commerce product provides two sample BIND jobs: one for the demomall and one for the business-to-business sample mall. In order to submit these jobs, you will need DB2 SYSADM authority. The following describes the steps you should take to use the demomall:

1. Start the DB2 subsystem you intend to use for the Net.Commerce database. Issue

   ```
   -dsn start db2
   ```

   where *dsn* is the DB2 subsystem name. We used *DB51*.

2. Copy the CMNBIND sample job from the *hlq*.SCMNSAMP data set to your JCL library and edit it as follows:
   - Update the JOB statement to conform to your site requirements.
   - Change the HLQs of the DB2 data set names from -XXXXXXX- to the HLQs of your DB2 data sets. We used *DB2V510*.

   - Change the HLQs of the Net.Commerce data set names from -YYYYYYY- to the HLQs of your target Net.Commerce data sets. We used *CMN*.
   - Change the DB2 subsystem name from -ZZZZ- to match your DB2 subsystem name. We used *DB51*.

3. Submit the job.
4. Check the job output to ensure the BIND completed successfully. You should get a return code 0.

Note that this job uses the default sample Dynamic SQL Program DSNTIAD, and the default plan name associated with this program, DSNTIA51 (for DB2 V5). If this plan name has been altered at your site, you will have to alter the JCL in the CMNBIND job accordingly.

Note: Each NCS instance database requires a *unique* plan name. If the same plan name is used for more than one database, it is possible to get database deadlocks. You can use any name you wish for the plan, so long as it is unique.

4.5.7 Configuring the Net.Commerce Server

The Net.Commerce system uses several configuration files at run time. Some of these are updated by the Net.Commerce configuration program, cmnconf. In this section we briefly describe these configuration files, and the configuration program which updates them.

The configuration files for each Net.Commerce instance are located in directories unique to each instance. These directories take the form:

```
/usr/lpp/NetCommerce/html/locale/instname
```

where *locale* is the language (for example, en_US) and *instname* is the name of the NCS instance (for example, itsoinst). The directories are defined in the WWW_HTML_PATH (also known as the document root) parameter in the mserver.conf file for each instance.

Each Net.Commerce Server (NCS) instance has its own NCS configuration file (mserver.conf), environment variable file (mserver.envvars), and Net.Data configuration or initialization file (db2www.ini). These are the files that exist in the directory pointed to by WWW_HTML_PATH in mserver.conf. As Net.Commerce uses the Web server, it updates the Web server's configuration files, httpd.conf and servlet.conf, as well. These files usually exist in the /etc directory.

Net.Commerce: Configuring and Getting Started, GC24-5862 discusses the creation of a *model* NCS instance configuration file. The cmnconf configuration program dynamically builds an mserver.conf file in the configuration directory for each instance you create.

The concept is to specify values that are common to all instances but for which there is no default or the default is not desired. For example, the DB2 subsystem id (MS_DBSSID) value has no default.

In order for the program to use the model file, you must specify the directory in which the file resides in the first panel in the cmnconf program. We cover the cmnconf program in section 4.5.8, “Starting the Configuration Program” on page 51.

4.5.7.1 mserver.conf

This file is the Net.Commerce Server instance configuration file. Each NCS instance has its own unique configuration file. This file contains parameters such as the name of the DB2 database used by the instance, the owner of this database, the database plan name, the instance *hostname*, and macro paths used by the instance. A complete table of the parameters can be found in *Net.Commerce: Configuring and Getting Started*, GC24-5862.

4.5.7.2 mserver.envvars

This file contains the environment variables for the NCS instance. During installation of Net.Commerce, the file *mserver.envsamp* is created in the */usr/lpp/NetCommerce/install* directory. This file is read by the cmnconf configuration program during the configuration of a NCS instance. *Net.Commerce: Configuring and Getting Started*, GC24-5862 suggests that you should copy the sample file to mserver.envvars and place it in the /etc directory or in a model NCS configuration directory before running the configuration program. When you invoke cmnconf and create a new instance, there is no envvars file yet for that instance. A problem occurs when you continue through the configuration steps. The Database Create step invokes cmndb2, which requires the NLSPATH to be set. Creating an /etc/mserver.envvars file (with an NLSPATH setting) avoids this problem.

4.5.7.3 db2www.ini

This is the Net.Data initialization file that is used by a NCS instance. It specifies the directories that contain the macros, execs and other Net.Data elements used by a NCS instance.

4.5.7.4 httpd.conf

This file is the Web server configuration file. It contains many parameters to define the environment under which a Web server will run. The cmnconf configuration program updates this file with a number of *Pass* directives. Some of these directives are specific to each instance, and some are common to all instances for a particular Web server. The configuration program copies the current httpd.conf file to httpd.confold and updates the file in two blocks delimited by comments. Figure 11 on page 50 shows a section from the httpd.conf file we used.

```
###### IBM Net.Commerce ######
Authentication  BASIC  /usr/lpp/NetCommerce/cgi-bin/cmnicapi:Authentication
Protect /msprotect/* www.itsoshop.com {
ServerId        Private_Authorization
Authtype        Basic
GetMask         All@(*)
PutMask         All@(*)
PostMask        All@(*)
Mask            All@(*)
PasswdFile      %%DB2%%
}

Pass    /te_html/*   /usr/lpp/NetCommerce/instance/itsoinst/teditor/te_html/* www.itsoshop.com
Pass    /ca_html/*   /usr/lpp/NetCommerce/instance/itsoinst/teditor/ca_html/* www.itsoshop.com

ServerInit   /usr/lpp/NetCommerce/cgi-bin/cmnicapi:ServerInit
Service  /msprotect/*        /usr/lpp/NetCommerce/cgi-bin/cmnicapi:Service/*
Service  /cgi-bin/nsrvr/*    /usr/lpp/NetCommerce/cgi-bin/cmnicapi:Service/*

Pass    /storemgr/*  /usr/lpp/NetCommerce/html/en_US/ncadmin/storemgr/*
Pass    /sitemgr/*   /usr/lpp/NetCommerce/html/en_US/ncadmin/sitemgr/*
Pass    /ncacom/*    /usr/lpp/NetCommerce/html/en_US/ncadmin/common/*
Pass    /ncsample/*  /usr/lpp/NetCommerce/html/en_US/ncsample/*
Pass    /ncagif/*    /usr/lpp/NetCommerce/html/en_US/ncadmin/gif/*
Pass    /ncbooks/*   /usr/lpp/NetCommerce/html/en_US/ncbooks/*
Pass    /demomall/*  /usr/lpp/NetCommerce/html/en_US/demomall/*
Pass    /bus2bus/*   /usr/lpp/NetCommerce/html/en_US/bus2bus/*
Pass    /hs/*        /usr/lpp/NetCommerce/html/en_US/bus2bus/*
Pass    /nextgeneration/*  /usr/lpp/NetCommerce/html/en_US/nextgeneration/*
Pass    /ca_icons/*  /usr/lpp/NetCommerce/html/en_US/ca_icons/*

AddType  .js       application/x-javascript      ebcdic  1.0 #Net.Commerce java
###### End of IBM Net.Commerce ######

 .
 .
 .

###### IBM Net.Commerce (Pass) ######
Pass    /*  /usr/lpp/NetCommerce/html/en_US/itsoinst/* www.itsoshop.com
###### End of IBM Net.Commerce (Pass) ######
```

Figure 11. Net.Commerce Sections from the httpd.conf File

4.5.7.5 servlet.conf

This file contains the directives required for Java and servlet support. JavaPath, JavaClassPath, ServletLog and Eservlet directives are all defined here. At the time of writing, the Net.Commerce product does not allow you to specify a Web server-specific servlet.conf file for updating by the cmnconf configuration program, in the way that you can with the httpd.conf file. When the configuration program is invoked, there *must* be a file called servlet.conf in the same directory as the server-specific httpd.conf file that you specify on the SYSTEM CONFIGURATION panel. If you have a Web server-specific file, for example, servlet.conf.imwebsrv, the configuration program will not be able to find it and will tell you so.

We got around this by copying our servlet.conf.imwebsrv file to servlet.conf and then manually copying any updates made to this file by the configuration program back into the servlet.conf.imwebsrv. (The updates made by the configuration program are easy to spot, as they are delimited by comments referring to Net.Commerce). Figure 12 on page 51 shows the lines added to servlet.conf by the configuration program.

```
###### IBM Net.Commerce ######
ESERVLET icmserver icmserver {
    configfile=mserver.conf
}
SERVICE icmserver /servlet/icmserver

ESERVLET icviewer icviewer {
    configfile=mserver.conf
    content=text/html
    www.itsoshop.com=/usr/lpp/NetCommerce/html/en_US/itsoinst
}
SERVICE icviewer /servlet/icviewer
###### End of IBM Net.Commerce ######
```

Figure 12. Net.Commerce Section from servlet.conf.imwebsrv

4.5.8 Starting the Configuration Program

To start the configuration program, perform the following steps:

1. Log on to a TSO user ID that has write access to the Net.Commerce and Web server directories. If you intend to perform database activities with the configuration program (as you will if you are configuring the system for the first time), this user ID must have DB2 SYSADM authority. You also need read and execute access to the HTADM utility (typically, /usr/lpp/internet/sbin/htadm) if you are going to use a Net.Commerce password file.
2. If you intend to perform database activities, ensure that DB2 is started. If it is not, start it as follows:

   `- dsn start db2`

   where *dsn* is the name of the DB2 subsystem that you are using for the Net.Commerce database.
3. Ensure that you have added the panel library (hlq.SCMNPENU) to the ISPPLIB concatenation and the message library (hlq.SCMNMENU) to the ISPMLIB concatenation, where *hlq* represents the high-level qualifiers of the data set in which you installed the Net.Commerce product.
4. If you have not added the SCMNLMOD data set to your link list concatenation, activate the data set at the READY prompt as follows:

   TSOLIB ACT DSN('*HLQ*.SCMNLMOD') where *hlq* represents the high-level qualifiers of the data set in which you installed the Net.Commerce product.
5. Start ISPF, and select the option to run TSO commands.
6. On the command line, type the following command:

   `CMNCONF {"ncdata_file"}`

   where *ncdata_file* is the fully qualified name of the Net.Commerce configuration data file. If you do not specify a name, the configuration program uses /etc/ncconfig.dat. (Note that the first time you run the configuration program, an ncconfig.dat file will be created in the /etc directory, dynamically).

The /etc/ncconfig.dat file contains the names of the existing Net.Commerce Server instances, along with the path to the mserver.conf file for each instance. This configuration data file is updated by the configuration program as you add, modify, or delete instances.

The configuration program reads the /etc/ncconfig.dat file to create a list of existing Net.Commerce Server instances and then obtains configuration information about each of the instances from that instance's mserver.conf file. The configuration program then displays a panel listing each of the existing instances and prompting for a specific instance name and action (configure a new instance, modify an existing instance configuration, or delete an existing instance configuration).

4.5.9 Creating or Modifying a Net.Commerce Server Instance Configuration

When configuring a new instance or modifying the configuration of an existing instance, the configuration program reads the values from an instance configuration file (mserver.conf), and instance environment variable file (mserver.envvars), if they exist. For a new instance the files are dynamically built, or, if model files have been built and the model configuration directory is specified in the Config and Envar File Path Field, they are read from that directory (see Figure 13 on page 53). For an existing instance, the path containing these files is specified in the Net.Commerce configuration data file.

The next few pages show the creation of our new instance, ITSOINST, and new database ITSODB. Keys in **bold** denote either parameters entered by the user, or messages returned by the system.

Note: The configuration files are not updated until the second step in the configuration program, *Access Control*, is completed. This is important to note because if you wish to modify an instance, and only wish to alter details in the first panel, you still have to enter the Access Control panel and exit it again to trigger the update of the configuration files.

Figure 13 on page 53 shows the initial panel you will see when you start the Configuration Program. Here you can define a new instance or modify or delete an existing one. The Existing Instances section will list any instances you have already defined. This information is kept in the ncconfig.dat file in the /etc directory. Select option 1 and specify the name of your new instance, for example, ITSOINST.

```
CMNTAB------------- CONFIGURING THE NET.COMMERCE SYSTEM ---------------------
COMMAND ===>
      *****************************************************************
      *    Licensed Materials - Property of IBM                       *
      *    5697-D32                                                   *
      *    (C) Copyright IBM Corp. 1997           All Rights Reserved *
      *****************************************************************

This panel allows you to configure a new instance of a Net.Commerce Server or
modify or delete the configuration of an existing instance.

Instance Operation    ===> 1  (1 = new, 2 = modify, 3 = delete)
Instance Name         ===> itsoinst
Optional Config and Envar File Path for configuring a new instance:
   ===>



-------- Existing Instances -------------------------------------------------
Name          Host Name
****************************** Bottom of data *******************************
```

Figure 13. The NCS Instance Configuration Program, CMNCONF, Initial Panel

Figure 14 shows the second panel you will see when you choose to create a new instance. It prompts you to choose option 1, **a**, for System Configuration.

```
CMNMAIN--------- NET.COMMERCE INSTANCE CONFIGURATION    New instance: choose 1 a
SELECT OPTION ===> 1

Instance Name         ===> itsoinst

To configure a new instance of a Net.Commerce Server, select choices 1 through
4 (except do not select 3 or 4 if you want to use an existing database).
These panels prompt for information that is then used to update the various
configuration files used by the Net.Commerce Server instance and to create,
load, or delete a Net.Commerce database.

    1. System Configuration - change settings of your Net.Commerce instance
    2. Access Control       - change Web server directories and password access
    3. Database Create      - create or delete a Net.Commerce database
    4. Database Load        - load a Net.Commerce database from del files

Enter END COMMAND to return to the main panel.
```

Figure 14. Configuration Program - Instance Configuration Panel

Figure 15 on page 55 shows the System Configuration panel. Here you specify a number of parameters for your new instance. Within Figure 15 on page 55:

- **b** Web Server Instance Host Name. This is the URL Web site address that Internet shoppers will use to access your mall. It does not have to be the same as your instance name. However, in order for your Web browser to be able to find the address you will have to do one of the following:

  - Place an entry in the hosts file on your Web browser workstation. On Windows 95, the hosts file is found in the Windows directory. This will allow your Web browser to find the URL, but *only* your Web browser. For others to access the URL, they too will have to update their hosts file. Following is the hosts file we used on our workstations:

```
127.0.0.1     localhost                    # localhost ip address
9.12.2.22     wtsc58oe.itso.ibm.com        # wtsc58oe TCPIPOE host
9.12.2.22     www.itsoshop.com             # itsoinst instance hostname
```

  - Update the Domain Name Server (if you are using one) for your TCPIP network.

  Ultimately you will have to register this domain name with InterNIC (the InterNetwork Information Center) at `http://www.internic.net` in order that people outside your intranet can access your mall or store.

- **c** Net.Commerce Machine Host Name. This is the fully qualified TCP/IP machine host name that is associated with the IP address that both the Web server and the Net.Commerce instance will bind to.
- **d** Port number. This is automatically allocated.
- **e** Number of Processes. This is automatically allocated.
- **f** DB2 Subsystem Name. This is the subsystem name you chose when binding the Net.Commerce plan earlier in this chapter.
- **g** DB2 Plan Name. The default is mserver. You will need to change the plan name here if you have multiple instances. It is recommended that each instance have its own plan name. In all cases, the plan name here should match the plan name specified in the bind procedure.
- **h** DB2 Database Owner. The database owner you defined to RACF earlier.
- **i** DB2 Database Name. The name you wish to give to the Net.Commerce database you will create for this instance.
- **j** Password Storage. The location of the information used to determine which users have access to restricted HTML files. When shoppers register with your store, their user ID and password need to be recorded. You can specify one of the following values for the Password Storage:
  - %%DB2%% - the passwords will be kept in a DB2 database table.
  - %%SAF%% - the passwords will be kept in an OS/390 Security facility (such as RACF). If you choose %%SAF%%, then you cannot use the Net.Commerce administration forms to update the user IDs and passwords. You will have to use the normal security interface and commands.
  - A fully-qualified name of a password file. This is the default setting when using the cmnconf program. If you specify a password file name, it cannot be '/' and the file will be created if it does not exist. The usual value is /usr/lpp/NetCommerce/instance/instname/password/netc.pwd, where /usr/lpp/NetCommerce is the install directory for Net.Commerce and instance is the instance name.

  Note: We recommend to use DB2 for password storage. Using %%DB2%% has some advantages:

  - User IDs and passwords stored in DB2 can be cached.

  - These user IDs may be associated with other data already stored in the DB2 database. So keeping everything together will prevent any out of sync conditions in cases of backup and restore.
  - A password file in the HFS may be more prone to file lockouts if many people are accessing the password file at once.
  - There is no automatic mechanism within Net.Commerce to add user IDs to a security product like RACF. You will have to manually add users.
  - Storing passwords in DB2 facilitates running in a Parallel Sysplex.

```
CMNCNF1------------- SYSTEM CONFIGURATION - PART 1 OF 2 ----------------------
COMMAND ===>

Instance Name             ===> itsoinst

b Web Server Instance Host Name
  ===> www.itsoshop.com
c Net.Commerce Machine Host Name
  ===> wtsc58oe.itso.ibm.com
d Port Number             ===> 10010
e Number of Processes     ===> 2

f DB2 Subsystem Name      ===> db51
g DB2 Plan Name           ===> mserver
h DB2 Database Owner      ===> itsodbu
i DB2 Database Name       ===> itsodb

j Password Storage    ===> %%DB2%%



Enter END COMMAND to return to the INSTANCE CONFIGURATION menu.
```

Figure 15. Configuration Program - System Configuration Panel - Part 1

Figure 16 on page 56 shows the second part of the System Configuration option. Here you specify:

- **k** The Locale Name for the language you are using on your Web server. Use the default.
- **l** Cache Control, which defines what caching, if any, should be done by the Net.Commerce database (DB2) with the HTML pages called by a customer. If caching is enabled for read (1 or 2 is specified), the next time an HTML page is requested, the cached version is used (if the page was cached). This can improve performance. If 1 is specified, you also enable caching for write as well as read operations. Net.Commerce saves a copy of each product or category HTML page that is requested by a customer. This can improve performance as well.

  For a store with a large number of products: set cache control to 1 (read/write), use a browser to view popular items (specials, sales, seasonal products, best seller list, and so on) to cache these HTMLs, then set cache control to 2 (read only). The idea is to avoid caching items that only interest a small number of shoppers.

- **m** HTML Path, which specifies where the configuration files for the new instance will reside. This path is also referred to as the HTML document root. This value must be the same as is specified in the -i option in the instance startup procedure.
- **n** Web Server Config File. This is the configuration file for your Web server. We used a file called httpd.conf.imwebsrv. This value must be the same as is specified in the -r option in the Web server startup procedure.
- **o** Log File Location. This specifies the directory where the various Net.Commerce instance logs will be written. The default path for the instance "itsoinst" is shown in the figure. If you used a different instance name, then that should go here.
- **p** SSL Control. These options define which elements of Net.Commerce will use SSL. Where SSL is active for a particular element, the user will be prompted by his or her Web browser to accept or decline the security certificate that is sent by the host site. (They will only have to do this once per session). We cover setting up a test certificate, in section 4.6, "Enabling SSL on the Web Server for Testing" on page 62. We kept the default options.

```
CMNCNF2------------- SYSTEM CONFIGURATION - PART 2 OF 2 ----------------------
COMMAND ===>

k Locale Name              ===> en_US
l Cache Control            ===> 1  (0 = disable, 1 = read/write, 2 = read only)
m HTML Path                ===> /usr/lpp/NetCommerce/html/en_US/itsoinst



n Web Server Config File   ===> /etc/httpd.conf.imwebsrv



o Log File Location        ===> /usr/lpp/NetCommerce/instance/itsoinst/logs


p SSL Control:   (0 = disable SSL, 1 = enable SSL, 2 = no SSL change)
  Address Book ===> 1   Display ===> 0      Execmacro ===> 2   Order ===>  1
     Register ===> 1    ShipTo ===> 1   Shopping Cart ===> 1

Enter END COMMAND to return to SYSTEM CONFIGURATION - PART 1 OF 2.
```

Figure 16. Configuration Program - System Configuration Panel Part 2

Figure 17 on page 57 shows the confirmation panel after completing the System Configuration option. If everything is OK you will get a Server Config Successful message. **q**. Note that the only file that has been updated at this point is the mserver.conf file. The db2www.ini, httpd.conf, and the servlet.conf files are updated when the next panel, Access Control is completed. Select option **2**.

```
CMNMAIN--------- NET.COMMERCE INSTANCE CONFIGURATION  Server Config Successful q
SELECT OPTION ===> 2

Instance Name         ===> itsoinst

To configure a new instance of a Net.Commerce Server, select choices 1 through
4 (except do not select 3 or 4 if you want to use an existing database).
These panels prompt for information that is then used to update the various
configuration files used by the Net.Commerce Server instance and to create,
load, or delete a Net.Commerce database.

    1. System Configuration - change settings of your Net.Commerce instance
    2. Access Control       - change Web server directories and password access
    3. Database Create      - create or delete a Net.Commerce database
    4. Database Load        - load a Net.Commerce database from del files

Enter END COMMAND to return to the main panel.
```

Figure 17. Configuration Program - Server Config Successful

Figure 18 shows the Access Control panel. This panel defines the paths used to access macros, the Web server administration program, cgi-bin programs and the server install path, for your new instance. We kept the defaults.

```
CMNACC1----------------------- ACCESS CONTROL -------------------------------
COMMAND ===>

Instance Name             ===> itsoinst

Macro Path                ===> /usr/lpp/NetCommerce/macro/en_US



Web Server Admin Program  ===> /usr/lpp/internet/sbin/htadm



Net.Commerce CGI-BIN Path ===> /usr/lpp/NetCommerce/cgi-bin



Server Install Path       ===> /usr/lpp/NetCommerce



Enter END COMMAND to return to the INSTANCE CONFIGURATION menu.
```

Figure 18. Configuration Program - Access Control Panel

Figure 19 on page 58 shows the panel you will see if the configuration program successfully updated the instance configuration files. Select option **3** to create a new Net.Commerce database.

```
CMNMAIN--------- NET.COMMERCE INSTANCE CONFIGURATION  Access Control Succeeded
SELECT OPTION ===> 3

Instance Name         ===> itsoinst

To configure a new instance of a Net.Commerce Server, select choices 1 through
4 (except do not select 3 or 4 if you want to use an existing database).
These panels prompt for information that is then used to update the various
configuration files used by the Net.Commerce Server instance and to create,
load, or delete a Net.Commerce database.

    1. System Configuration - change settings of your Net.Commerce instance
    2. Access Control       - change Web server directories and password access
    3. Database Create      - create or delete a Net.Commerce database
    4. Database Load        - load a Net.Commerce database from del files

Enter END COMMAND to return to the main panel.
```

Figure 19. Configuration Program - Access Control Successful Panel

Figure 20 shows the Net.Commerce database creation/deletion panel. For the creation of a demomall database, select option **1** for Database Type and option **1** for Database Operation. You should also change *hlq* to the hlq you gave the sample Net.Commerce data set. Leave the script name blank to use the default script.

This operation can take several minutes. On our system it took approximately five minutes to create a demomall database.

```
CMNDBC----------- CREATE OR DELETE A NET.COMMERCE DATABASE -------------------
COMMAND ===>

This panel allows you to create or delete a Net.Commerce database.

Instance Name       ===> itsoinst
DB2 Database Owner  ===> itsodbu
Database Name       ===> itsodb

Database Type       ===> 1  (1 = demomall, 2 = Net.Commerce base,
                             3 = business-to-business, 4 = custom)
Database Operation  ===> 1  (1 = create, 2 = delete)

For Creating or Deleting demomall, Net.Commerce base, or business-to-business:
  Data Set Name          ===> CMN.SCMNSAMP
For Creating or Deleting a Custom Database:
  Custom Script Name     ===>



Enter END COMMAND to return to the INSTANCE CONFIGURATION menu.
```

Figure 20. Configuration Program - Net.Commerce Database Creation/Deletion Panel

Figure 21 on page 59 shows the panel you will see if the database was successfully created. Next you need to populate the database. Select option **4**, Database Load.

```
CMNMAIN--------- NET.COMMERCE INSTANCE CONFIGURATION      DB Create Successful
SELECT OPTION ===> 4

Instance Name         ===> itsoinst

To configure a new instance of a Net.Commerce Server, select choices 1
through 4 (except do not select 3 or 4 if you want to use an existing
database).  These panels prompt for information that is then used to
update the various configuration files used by the Net.Commerce Server
instance and to create, load, or delete a Net.Commerce database.

    1. System Configuration - change settings of your Net.Commerce instance
    2. Access Control       - change Web server directories and password access
    3. Database Create      - create or delete a Net.Commerce database
    4. Database Load        - load a Net.Commerce database from del files

Enter END COMMAND to return to the main panel.
```

Figure 21. Configuration Panel - DB Create Successful Panel

Figure 22 shows the Net.Commerce Database Load panel. Select option **1** for Database to Load. The "Convert Del Files" option relates to whether or not your database is extracted from del files on an OS/390 database. For more information see *Net.Commerce online help*.

Note: If one or more tables do not load correctly, you should diagnose and fix the problems, then invoke database load again, specifying the names of the tables that did not load in the `Tables to Load` field. The database load took about five minutes on our system.

```
CMNDBL1----------------- LOAD A NET.COMMERCE DATABASE ------------------------
COMMAND ===>

This panel allows you to load a Net.Commerce database from del files extracted
from a database.  When loading a custom database, a second panel is displayed
to obtain additional information.

Instance Name       ===> itsoinst
DB2 Database Owner  ===> itsodbu
Database Name       ===> itsodb

Database to Load    ===> 1  (1 = demomall, 2 = Net.Commerce base,
                             3 = business-to-business, 4 = custom)
Convert Del Files   ===> 2  (1 = yes, 2 = no)

Tables to Load      ===>



Enter END COMMAND to return to the INSTANCE CONFIGURATION menu.
```

Figure 22. Configuration Panel - Net.Commerce Database Load Panel

Figure 23 on page 60 shows the panel you get if the database load completed successfully. Press PF3 to exit from this panel and you will return to the Configuration Program initial panel. You should now see an entry in the Existing Instances section of this panel with your new instance (see Figure 24 on page 60).

```
CMNMAIN--------- NET.COMMERCE INSTANCE CONFIGURATION  Database Load Successful
SELECT OPTION ===>

Instance Name         ===> itsoinst

To configure a new instance of a Net.Commerce Server, select choices 1 through
4 (except do not select 3 or 4 if you want to use an existing database).
These panels prompt for information that is then used to update the various
configuration files used by the Net.Commerce Server instance and to create,
load, or delete a Net.Commerce database.

    1. System Configuration - change settings of your Net.Commerce instance
    2. Access Control       - change Web server directories and password access
    3. Database Create      - create or delete a Net.Commerce database
    4. Database Load        - load a Net.Commerce database from del files

Enter END COMMAND to return to the main panel.
```

Figure 23. Configuration Program - Database Load Successful Panel

```
CMNTAB-------------- CONFIGURING THE NET.COMMERCE SYSTEM ----- Row 1 to 1 of 1
COMMAND ===>
      *****************************************************************
      *    Licensed Materials - Property of IBM                       *
      *    5697-D32                                                   *
      *    (C) Copyright IBM Corp. 1997            All Rights Reserved *
      *****************************************************************

This panel allows you to configure a new instance of a Net.Commerce Server or
modify or delete the configuration of an existing instance.

Instance Operation    ===> 1  (1 = new, 2 = modify, 3 = delete)
Instance Name         ===> itsoinst
Optional Config and Envar File Path for configuring a new instance:
   ===>


-------- Existing Instances ---------------------------------------------------
Name          Host Name
itsoinst        www.itsoshop.com
****************************** Bottom of data ******************************
```

Figure 24. Configuration Program - Initial Panel with New Instance

4.5.10 Granting Database Administration Authority to the Web server

The Web server you use must have database administration authority to the Net.Commerce database used by this Net.Commerce Server instance. Use SPUFI (or an equivalent utility) and enter the following command, substituting the database name for *dbname* (for example, ITSODB), and the user ID under which the Web server runs for *webid* (for example WEBSRV).

```
grant dbadm on database dbname to webid;
```

4.5.11 Testing the Net.Commerce Server Instance

Your Net.Commerce Server (NCS) instance is now defined. Next we will test the instance by accessing it from a Web browser:

1. Start (or stop and restart) your Web server.
2. Wait until the server has completed its startup procedure, then start the NCS by issuing the Start command from the MVS console or SDSF log. For our ITSOINST instance, the command on the console would be: `S ITSOINST`
3. Start your Web browser and specify `http://www.itsoshop.com` as the URL.

Depending on how your Web server configuration directives are set up, you will either now see your default welcome page for your Web server, or you may get an error 403 message stating `directory browsing failed - access forbidden`.

If you get this message, copy your welcome page to your instance HTML document root or HTML Path. This is /usr/lpp/NetCommerce/html/en_US/*instname* by default (that is, unless you altered it when defining the instance in the Configuration Program). The welcome page that is supplied with Domino Go Webserver V4.6.1 is called Frntpage.html, and exists in the /usr/lpp/internet/server_root/pub/C directory. It is worth editing this document once copied to your NCS HTML path so that it is not identical to the one in the Web server root. This helps to avoid confusion when accessing the instance from a Web browser. If the welcome pages are identical for both the NCS and the Web server root, it can be difficult to determine where exactly the Web server has served the document from.

If you have copied the Domino Go Webserver's welcome page to the NCS HTML path, then when you now enter the NCS hostname URL on your Web browser (or refresh the page, if the Web browser is still active), you should now see the welcome page. (Note that this does not prove that the NCS instance is working yet. It just proves that the Web server configuration file has been updated with the correct Pass directives. For hints on following the flow of a document through the Web server configuration directives, see section 4.9, "Using Traces To Debug Net.Commerce System Problems" on page 69.)

This page has a link to the Web server Configuration and Administration forms, which we use in the section 4.6, "Enabling SSL on the Web Server for Testing" on page 62 to enable SSL on the Web server.

If SSL is already active on your Web server, you can skip section, 4.6, "Enabling SSL on the Web Server for Testing" on page 62.

4.6 Enabling SSL on the Web Server for Testing

Net.Commerce: Configuring and Getting Started, GC24-5862 describes a step-by-step procedure for enabling SSL on the Web server. You should follow that procedure now to:

1. Create a security key ring for testing.
2. Set your test key ring as the current key ring.
3. Receive and test the test key ring certificate.

We ran into one problem when we were using the Configuration and Administration forms to create the server's public-private key pair and CA certificate. When we selected **Create keys**, **Other** and then **Apply**, we got the following message:

```
UserId not defined in configuration file
```

We found that adding the HostName directive to our Web server configuration file fixed this problem.

You will also need to have the sslmode directive set on, if you had previously turned it off. (If you change the Web server configuration file, you will of course, have to stop and start the Web server for the change to take effect).

4.6.1.1 Running Multiple Net.Commerce Instances on a Single Web Server

The Domino Go Webserver supports multi-homing (the ability to service multiple different hostname/IP addresses from a single Web server). The server is able to serve different Web content based on what hostname/IP address combination is used to access the Web server. In the case of Net.Commerce, you can run multiple instances (multiple stores) from one Web server because the Web server can parse and service different requests based on the hostname/IP address that is used to contact the server as shown in Figure 25.

```
###### IBM Net.Commerce (Pass) ######
Pass    /*  /usr/lpp/NetCommerce/html/en_US/itsoinst/* www.itsoshop.com
Pass    /*  /usr/lpp/NetCommerce/html/en_US/insttwo/* www.insttwo.com
###### End of IBM Net.Commerce (Pass) ######
```

Figure 25. Pass Directives for Multiple Instances

In order for this to work correctly, we recommend each hostname be associated with a unique IP address on your OS/390 system.

In the current implementation of Domino Go Webserver 4.6.1, it is *NOT* possible to assign a different security certificate to each Net.Commerce instance (or logical Web server). Unlike the Pass directives shown in Figure 25, for multiple instances you can only have one keyfile directive in a httpd.conf file.

This one keyfile directive can only have one certificate which can only be signed by one hostname/IP address combination, for example, www.itsoshop.com. This name is stored in the certificate. All Net.Commerce instances must share this same certificate.

When you access a page on the Internet in secure mode by specifying a URL and a document on your Web browser (for example, https://www.itsoshop.com/Welcome.html), the Web server sees that a request for a document has been made in secure mode and asks the server to use SSL. The server sends its security certificate to the Web browser, which checks the name stored in the certificate against the hostname of the Web server (the first half of the URL). If these do not match, the Web browser will display a pop-up panel telling you that they do not match, as shown in Figure 26.

Figure 26. Certificate Name Check

A level of support has been implemented in the Domino Go Webserver V5.0 by the use of IP matching with keyfile directives, much like you can with Pass directives today.

If your server is configured with multiple IP addresses, you can send different certificates from each IP address. If you have a different hostname assigned to each IP address, you can configure SSL to send a different certificate for each hostname. For example, if your server is configured to have the two IP addresses 125.25.116.87 and 125.25.116.89 with DNS entries of `www.Mall.com` and `www.SuperShopper.com`, respectively, each hostname/IP address combination could have a separate key and certificate. Because the IP session connections for `www.Mall.com` and `www.SuperShoper.com` are coming in on different IP addresses for the requests, the server can serve the corresponding certificate for each host name. Figure 27 on page 64 shows the new support in the Domino Go Webserver V5.0:

```
SSLServerCert 'DGW S/390 Server Key 1' 125.25.116.87
SSLServerCert 'DGW S/390 Server Key 2' 125.25.116.89
```

Figure 27. Multiple Certificate Support In Domino Go Webserver V5

Separate certificates prevent the browser pop-up warning that the host name of the request does not match the host name presented in the certificate during the initialization of the SSL session.

4.7 Testing Your Net.Commerce Server System - Accessing Demomall

So far we have only performed a very limited test on the new Net.Commerce system. In this section we will test a number of functions of the demomall, namely:

- The display of the mall home page.
- The registration process.
- Access control.

Note: Before we start the testing, stop and restart the Web server and the Net.Commerce Server instance if you have made any changes to their configuration files since last starting them.

4.7.1 Testing the Display of the Demomall Mall Home Page

The demomall homepage is accessed by typing the following URL in your Web browser:

```
http://host_name/demomall/basemall.htm
```

where *host_name* is the Web server hostname for the instance you configured in the configuration program. In our example, the URL would be:

```
http://www.itsoshop.com/demomall/basemall.htm
```

You should see the home page of a mall called *The Metropolitan* (see Figure 28 on page 65).

The Metropolitan

Figure 28. The Metropolitan Home Page

4.7.2 Testing the Registration Process

You can access the registration page in one of two ways: either click the **Register** icon on the mall home page, or enter the following URL on your Web browser (using our example host name):

`http://www.itsoshop.com/cgi-bin/msrvr/;register/form`

You will be taken to the registration page (see Figure 29 on page 66) where you can enter name and address details. Complete the mandatory information (the fields in **bold text**). Click **submit** and when prompted enter the user ID and password you specified in the registration form. If successful you should see a confirmation page.

The Metropolitan
If You're Already Registered
New Registration

Figure 29. The Registration Page for Demomall

4.7.3 Testing Access Control

To test access control you can display the shopping cart for the user ID you created in the previous section. You can access the shopping cart in one of two ways: either click the shopping cart icon on the mall homepage or enter the following URL (again using our example hostname):

`http://www.itsoshop.com/msprotect/msrvr/;shopcart/display`

If you are prompted for a user ID, enter the one you created in the previous section. You should see a page that indicates your shopping cart is empty, similar to that shown in Figure 30 on page 67.

The Metropolitan
Shopping Cart for Unknown Shopper

Figure 30. Shopping Cart Empty Page

4.7.4 Creating Net.Commerce Databases in Batch

The Configuration Program is not the only way you can build Net.Commerce databases, as two batch utilities are also provided. This can be useful if you have large custom databases you wish to create and populate which, if created using the configuration program, would lock up your TSO session for a long time.

The two utilities provided for the creation of a Net.Commerce database are CMNDB2, which is used to create the database, and mvs_builddb.sh, which is a shell script used to load the database with the required tables.

4.7.4.1 CMNDB2

CMNDB2 is provided in *hlq*.SCMNLMOD(CMNDB2), where *hlq*. is the HLQ of your target Net.Commerce data sets. It is also provided in /usr/lpp/NetCommerce/bin/cmndb2. It is this utility that is run, under the covers, when you execute the cmnconf configuration program.

Net.Commerce: Configuring and Getting Started, GC24-5862 describes the parameters used with the CMNDB2 utility. You can run it in batch using JCL similar to that provided in *hlq*.SCMNSAMP(CMNCRTDL).

Figure 31 on page 68 shows a modified version of this sample job, which will create the demomall database. Note that the Product Advisor Intelligent Catalog tables are created as part of the second sample member listed in the job, ICATMALL. These tables are created automatically when the configuration program is used.

```
//CMNCRTDL JOB (ACCT),'&SYSUID',CLASS=A,REGION=32M,
//           MSGCLASS=I,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//*
//CMNCRTDL EXEC PGM=IKJEFT01,COND=(4,LT)
//SYSTSPRT  DD SYSOUT=*
//STEPLIB  DD DSN=CMN.SCMNLMOD,DISP=SHR
//         DD DSN=DB2V510.SDSNLOAD,DISP=SHR
//         DD DSN=DB2V510.SDSNEXIT,DISP=SHR
//*
//CEEDUMP  DD SYSOUT=*
//SYSTSIN   DD *
CMNDB2 ENVAR('LANG=en_US', +
 'NLSPATH=/usr/lpp/NetCommerce/msg/%L/%N') / +
 -i /usr/lpp/NetCommerce/html/en_US/itsoinst/mserver.conf +
 //'CMN.SCMNSAMP(DEMOMALL)' +
 //'CMN.SCMNSAMP(ICATMALL)'
//
```

Figure 31. Modified Sample CMNDB2 Job For Creating Demomall Database

You can also invoke the utility directly from within the UNIX System Services shell though this may be less useful than the batch implementation. If you decide to execute it from the shell you will need to export the NLSPATH environment variable. See 4.7.4.2, "mvs_builddb.sh" for more information.

The sample CMNDB2 input files DEMOMALL, ICATMALL, B2BMALL and DEMODEL can be used to create a Net.Commerce demonstration retail mall, add Product Advisor demonstration mall elements, change the demonstration retail mall to a business-to-business demonstration mall, or delete a Net.Commerce database, respectively. The samples can be used as models for building your own scripts.

You can also use the files as input to the DB2 SPUFI utility.

4.7.4.2 mvs_builddb.sh

This utility is used to load the Net.Commerce databases with tables. It is provided only as a shell script (in /usr/lpp/NetCommerce/bin/mvs_builddb.sh), but can be run in the background in an OMVS session by using the ampersand (&) switch. You must also export the Net.Commerce NLSPATH before executing the shell script, so that if any errors occur, you get the correct error message. If you do not do this and an error occurs, you will get a message similar to the following:

```
Message # cannot be retrieved since no message file could be found.
```

where # is a number.

A sample sequence of commands might look like this:

```
echo $NLSPATH
```

To find out what NLSPATH is currently in use, you should append the following to your Net.Commerce NLSPATH:

```
export NLSPATH=/usr/lpp/NetCommerce/msg/%L/%N:/usr/lib/nls/msg/%L/%N
```

where the path after the colon is the appended NLSPATH found from the echo command.

Note: If you have the LANG environment variable set to C then we recommend

```
export NLSPATH=/usr/lpp/NetCommerce/msg/en_US/%N:/usr/lib/nls/msg/%L/%N
```

Next, run the `mvs_builddb.sh` shell script. Type the following at your shell prompt, all on one line:

```
/usr/lpp/NetCommerce/bin/mvs_builddb.sh -v -i /usr/lpp/NetCommerce/html/
en_US/itsoinst/mserver.conf > /u/armiges/stdout &
```

Note:

This command will load the database created for itsoinst with the default DB2 tables: the demomall tables. It will print the output of the command in the /u/armiges/stdout file due to the -v switch and the redirection switch >. The & will make the script run in the background.

The shell script is a front end for the LOADTBLS utility, which does the actual loading of the tables from input that is in mvsdel file format. Details on the parameters used with these two shell scripts are in *Net.Commerce: Configuring and Getting Started*, GC24-5862.

4.8 Use of the Database Cleanup Utility

The Net.Commerce Database Cleanup utility allows you to delete a number of unneeded records out of the database. You can delete the following record types:

Guest shoppers

Temporary shopper addresses

Old orders

Products that have been marked for deletion

Records in the NC_CACHE table that identify cached html pages that have been modified or are no longer needed.

When the database cleanup utility deletes a record in a table, it also deletes the corresponding records in other tables that are linked to that table, to preserve the referential integrity of the database.

The database cleanup utility, `ncclean`, is installed in

```
/usr/lpp/NetCommerce/bin
```

By default, the database cleanup utility will write to a log file in the current directory. Make sure the directory is writable or use the "-log" option to define a new location for the log file. For more information on the `ncclean` utility see *Net.Commerce online help.*

4.9 Using Traces To Debug Net.Commerce System Problems

There are many tracing and debugging options which can be set in the various elements that make up a Net.Commerce system. When you first build a Net.Commerce system, we highly recommend that you switch on the maximum tracing function possible within each element. In the following section we discuss the various options available.

4.9.1 Web Server Trace Settings

The following trace setting are used to trace the Web server.

4.9.1.1 Very Verbose, -vv

For the Web server, setting the very verbose switch -vv in the startup parameters of the started procedure for the server provides you with a great deal of output, but the data is invaluable when determining why a particular document has been served, or has failed to be served. The redbook, *Enterprise Web Serving with the Internet Connection Secure Server for OS/390*, SG24-2074 provides details on how to work out what will happen to a request for a file from a Web browser. It describes the function of the various Pass and Service directives in the Web server configuration file, httpd.conf, and how a request for a file from a Web browser will be interpreted by these directives.

4.9.1.2 ICAPI or GWAPI trace, CMN_TRACE=1

You can get a further level of tracing information if you specify CMN_TRACE=1 in the Web server environment file, httpd.envvars. This tracing option traces the activity of the Net.Commerce Director which is a Go Web API (GWAPI) program. Information on URLs and commands requested, session IDs and cookies, and SQL commands are captured in the trace.

With APAR PQ15846, the GWAPI trace output goes to SYSOUT, as defined in the Web server startup procedure. The MS_LOGPATH value in mserver.conf is not used for GWAPI tracing.

Note: Add /usr/lpp/NetCommerce/msg/en_US/%N (assuming the Net.Commerce message catalogs have not been moved) to the directories in NLSPATH. This will avoid messages in the trace like:

```
Message xx could not be retrieved since no message file could be opened!
```

4.9.2 Net.Commerce Instance Trace Settings

The following trace setting are used to trace the Net.Commerce server.

4.9.2.1 Daemon Trace, -tr -d

- To enable tracing of Net.Commerce daemon program activity, add -tr -d to the PARM statement in the Net.Commerce Server instance startup procedure, normally in SYS1.PROCLIB. The startup procedure and the *Net.Commerce: Configuring and Getting Started*, GC24-5862 have instructions on how to do this. If MS_LOGPATH is specified in the instance configuration file, (mserver.conf) then the trace output is directed to a file in that path. Otherwise, the trace output is directed to SYSPRINT as specified in the startup procedure.

  If you are directing the trace output to a log file, make sure that there is enough space in the file system. Performance will be severely degraded if the file system is near full.

  This trace provides information on elements like DB2 calls and spawn processes.

4.9.2.2 SHOWSQL

Displaying the SQL that is being executed can be helpful when debugging and testing your Net.Data macros. Add the following to the macro you want to debug:

```
%define {
SHOWSQL="YES"
%}
```

At the browser you will see all the SQL statements your macro is executing, for example:

```
select mhthead, mhtfoot, mhtbase from mall
```

When you are finished, set SHOWSQL=NO to stop displaying the SQL calls.

4.9.3 DB2 CLI Trace Settings

The DB2 CLI trace captures information to use in DB2 CLI problem determination. The trace specified by the DB2 CLI TRACE keyword is intended for debugging user applications.

We used this trace when debugging some problems with Product Advisor. Interestingly enough, we found that the DB2 CLI trace records were being written to the Web server's verbose trace log which was allocated to SYSOUT and that some of these records were being written in ASCII. This is a problem that is being addressed.

The trace can be activated by either the DSNAOTRC command or by the presence of the TRACE keyword in the DB2 CLI initialization file. For more information DB2 CLI traces, see *DB2 Call Level Interface Guide and Reference*, SC26-8959.

4.10 Hints and Tips

In this section we describe some hints and tips that we discovered.

4.10.1 Browser and Computer Settings

When you run Net.Commerce Administrator, make the following adjustments to the settings in Netscape:

- Set the browser's memory cache and disk cache to a value greater than zero.
- Enable the Java and JavaScript languages.
- Select Times New Roman 12 point for variable font, and Courier 10 point for fixed fonts. Other fonts may affect the layout of the Net.Commerce Administrator forms on your screen.
- Choose Once per Session for Verify Documents.

The following computer settings are recommended for optimal results. In Windows NT, these settings are found in the Display Settings tab of the Control Panel, from the Start menu.

- Screen resolution: 1024 x 768 pixels or higher
- Number of colors: 256
- Small fonts

Notes:

1. When running Net.Commerce Administrator, it is recommended that you maximize your browser window.
2. Resizing the window while using a form may cause data to be lost.
3. Do not hit the Reload button in the Netscape browser while using the Net.Commerce Administrator. If you reload the window after you have entered some data, your data will be lost.
4. When using the Product Advisor, if recent changes you made to a metaphor do not appear when you use the File - View in Browser option, the browser is displaying an older version of the data from the cache. Click the Reload button in the browser to refresh the cache for the page and the updated information should appear.

4.10.2 Editing a HFS File With Records Greater Than 255 Characters

The OEDIT command sets the width to a percentage greater than the longest line or 255, whichever is greater. If you are editing a new file, first make a line 255 characters in length in the file, then exit and get back into the file again. The second time MAX to the right and you should be able to add characters past the 255 column. A set of ISPF edit macros, Appendix C, "Splitit and Join ISPF Macros" on page 189 have been written to help when using oedit to edit these types of files.

4.10.3 Net.Data Macro Information

There are several restrictions to note about Net.Data macros:

- When creating Net.Data macros, use spaces instead of tab characters to indent lines of code. If you use tab characters, you may receive an SQL return code of -104 when the macro is executed.
- The sample macros that are provided in the demonstration mall and the Net.Commerce base mall do not check for all possible input errors. In particular, if you enter a double quote (") in an entry field where double quotes should not be allowed, and later retrieve the contents of the field, the contents may not match what you entered.
- The Net.Commerce Administrator tool does not handle single quotes (') correctly in some input fields. Single quotes are also not handled correctly by some sample macros that are provided in the demonstration malls and the Net.Commerce base mall.
- A Net.Data macro can generate an html which includes unnecessary blanks that increase the size of the html and slow down its transmission. The DTW_REMOVE_WS record in the Net.Data configuration file controls whether the blanks are removed. The sample Net.Data configuration file, installed as /usr/lpp/NetCommerce/html/en_US/db2www.ini, is used to create the Net.Data configuration file for each new instance during configuration of the instance. To eliminate the extra blanks, specify the following record in the sample Net.Data configuration file.

  ```
  DTW_REMOVE_WS YES
  ```

  For an instance that is already configured, add the record to the Net.Data configuration file for the instance, normally /usr/lpp/NetCommerce/html/en_US/instname/db2www.ini, where instname is the name of the instance.

4.10.4 Administration Information

A couple things a Net.Commerce Administrator should watch for:

- Depending on the browser used by the Net.Commerce V3 administrator, the administrator may have to reload the frame in the browser to see changes in the frame after clicking on a frame tab. Netscape on AIX has this problem.
- When an instance uses a security access facility such as RACF to store passwords, you cannot use the registration and administration forms to change shopper and administrator user IDs and passwords. The changes must be made by the security access facility administrator.

4.11 Problems We Experienced

The following lists some common problems we ran into during the residency, their causes and in most cases solutions.

db2_load_caf failed return_code 8 , reason_code f30055: We were getting this message with a SQL RC of -991 in the ICAPI trace and an SQL Failure error page on our browser.

This indicates a DB2 resource shortage problem. We raised the following values in the Threads Management Panel (DSNTIPE) on our test system.

```
                            Default  Change To
                            =======  =========
Max Users                 ==> 70        200
Max Remote Active         ==> 64        128
Max Remote Connected      ==> 64        128
Max TSO Connect           ==> 40         80
Max Batch Connect         ==> 20         80
```

For more information see Increasing DB2 connections on page 160.

Plan name conflicts: We experienced Web server abends and DB2 locks after a second NC instance was created using the demomall definitions. At first the same plan name, mserver, was used for both instances. A new plan, identical to the mserver plan (but with a different name) was used for the second Net.Commerce instance. After making this change, both instances could run the demomall without experiencing problems.

System exception when using NC Administrator: System exception at entry point SSL_Set_Cipher_Specs in the Web server's SSL module IMWYWSEX are logged in the Web server log. The Web server must be recycled after the abend.

This occurred at different stages when using the NC administrator and was more evident when administration tasks are done against two instances at the same time. This prevented reliable use of the NC Administrator tool. The problem can be bypassed by disabling SSL for the administration tasks, MS_ADMIN_SSL = 0 in all the Net.Commerce instance configuration files (mserver.conf).

Messages could not be retrieved: We kept getting the following statement in the ICAPI trace:

```
Message xx could not be retrieved since no message file could be opened
```

This was fixed by adding the following to the NLSPATH variable in the Web server's httpd.envvars file:

```
/usr/lpp/NetCommerce/msg/%L/%N
```

Use of DB2 Storage Groups: The database create statements in SCMNSAMP(DEMOMALL) build the Net.Commerce demomall database. If you use storage groups, you will have to add parameters to the database creation step in this job. Add `storgroup` and `catalog` statements to control the placement of the database created in CMNCONF option 3.

Getting message: Command Execution Failure (CMN0961E): We were getting this message on the browser. This also shows up in the ICAPI trace log:

```
 DB2LINK(execute_sql): PREPARE failed!           Return code -551.
   -> The query returned <-551>
Error occurred while checking if shopper is registered.
 UpdateShopperCache: id=admin, registered=0, size=0
    --- user admin is a guest
```

This occurred because we failed to give our Domino Go Webserver user ID, WEBSRV, dbadm authority to the Net.Commerce database for a particular Net.Commerce instance. To avoid this, from SPUFI issue:

```
GRANT DBADM ON DATABASE -your dbname- TO -websrv id-
```

where -your dbname- is the name of the database that you assigned to this instance and -websrv id- is the RACF user ID associated with your Web server started procedure. After doing this, we had to stop and restart the Web server and the Net.Commerce instance for the change to take place.

Getting DB2 locking error when stopping a Net.Commerce instance:

```
 IEA989I SLIP TRAP ID=XEC6 MATCHED.  JOBNAME=ITSOINST , ASID=005C.
 DSN3201I @ ABNORMAL EOT IN PROGRESS FOR USER=ITSOINST 067
 CONNECTION-ID=DB2CALL CORRELATION-ID=ITSOINST JOBNAME=ITSOINST
 TCB=008D7E88
```

Even though we got this message, it did not cause us any problems. We were able to start the Net.Commerce instance back up without problems.

Template Designer: A few problems related to the Template Designer:

- If you receive an SQL return code of 100 when executing macros that were built with the Template Designer, check the SQL statement for any unnecessary predicates, such as CRPCGNBR=CGRFNBR.
- If you receive the following status message when loading the Template Designer:

  ```
  "Applet TEditor can't start: security violation"
  ```

  you need either JDK 1.1.4 (available from http://help.netscape.com/filelib.html) or the Netscape JDK 1.1.1 Support Update on the client (available from the Netscape web site).

Utilities: Things to check before running the Net.Commerce utilities:

- The massimpt, ncclean, cmndb2, loadtbls, mvs_builddb.sh, and pwmigr all issue messages that are contained in the Net.Commerce message catalogs, normally in directory /usr/lpp/NetCommerce/msg/en_US/. Before running any of these utilities, ensure that the value of the NLSPATH environment variable includes a path like /usr/lpp/NetCommerce/msg/en_US/%N. If NLSPATH is not updated, you will receive the following:

  ```
  Message xx could not be retrieved since no message file could be opened!
  ```

- The massimpt and ncclean utilities use the DTWIODLL module. To enable the system to find this module, ensure that the LIBPATH environment variable includes /usr/lpp/NetCommerce/lib

Chapter 5. The Net.Commerce Administrator Suite

The Net.Commerce Administrator consists of a suite of tools for creating and maintaining electronic stores for selling products and services over the World Wide Web. These tools are called Site Manager, Store Manager, Template Designer, and Product Advisor. Net.Commerce online help is also available either from the administrator forms or by accessing nchost_name/nchelp/index.html from your Web browser.

Note: In order to use Net.Commerce, Administrator, a Web browser that is:

- SSL-compliant
- Capable of handling cookies
- Java-enabled and JavaScript enabled
- Capable of supporting tables and frames

must be used. Netscape Communicator 4.04 (Standard Version with Java patch) meets all of these requirements.

5.1 Net.Commerce Site Manager

The Net.Commerce Site Manager, referred to as the Site Manager, is a collection of online forms that you use to manage some high-level functions for electronic commerce. You need to use the site manager to establish your site, whether you are creating a single store, or a mall. With this tool you specify the location of the files for the mall's home page, the access control and store authorities, and the shopper information. You can also create a list of the shipping companies that will work with the system. These are the options you will find on the Site Manager home page configuration with a brief description of each:

Mall Information:	Sets up the mall home page and directory (or category list) of stores, and specifies the various directories for the appropriate files. Also, tax rates are defined.
Access Control:	Displays the access control form and the store authorities form. Manages user access to the mall and store information. Security features such as passwords and challenge questions are used.
Store Records:	Displays and keeps the store records form. Maintains a record of stores in the mall. New stores can be added, or existing stores can be deleted if they are no longer in business.
Task Management:	Customizes how shopping tasks function within the site. Also, individual stores can be given access to control certain shopping tasks.
Shopper Information:	Maintains information about shoppers provided during registration time. Demographic information is also provided.
Shipping Providers:	Maintains a master list of shipping companies and types of shipping services to be used by all stores within the site.
Template Designer:	Designs Web pages for the stores in the mall.
Payment Configuration:	Configures eTILL providers for stores in the mall.

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Figure 32 shows the Site Manager page.

Net.Commerce Administrator - Netscape

Figure 32. Net.Commerce Site Manager

Once you have the Net.Commerce product installed, you can start using Site Manager right away as it does not require any additional customization.

5.2 Net.Commerce Store Manager

The Store Manager allows you to create and maintain the catalogs for the online store. You can enter and update the store information and catalogs, create product categories, assign shopper groups, and view shopper information among other things. Here is a brief description of the options you will find on the Store Manager home page:

Store Information:	Provides information about a store, company, and contact person. The store home page file information is also stored here.
Product Categories:	Organizes the store's products into categories in order to help shoppers navigate through the store easier.
Product Information:	Enter information about products, services and items in the store into the database. Provide such details as product numbers, descriptions, and prices.
Discounts:	Provide percentage or fixed amount discounts to shoppers. Discounts can be offered on entire orders or individual products.
Shipping Services:	Define codes that are associated with shipping providers and services. Assigns the code to each product to specify how it can be shipped.
Template Designer:	Design Web pages for the store.
Shopper Groups:	Target specific markets by creating shopper groups. Discounts or other incentives may also be offered.
Customer Information:	View information about shoppers provided during registration time. Demographic information is also provided.
Order Information:	View details about orders. Update the status or quantity of orders upon a shopper's request or for your own business needs.
Product Advisor:	Create intelligent catalogs to help shoppers find the products that they want, even if they have little product knowledge. To narrow their search, shoppers can select features, compare similar products, or answer a series of questions.
Payment Configuration:	Add and configure eTILL (if installed) to use Secure Electronic Transactions (SET).
Payment Processing:	Process authorization, capture and credit transactions and reversals using SET.

Figure 33 on page 80 shows the Store Manager frontpage.

Net.Commerce Administrator - Netscape

Figure 33. Net.Commerce Store Manager

Once you have the Net.Commerce product installed you can start using Store Manager right away as it does not require any additional customization.

5.3 Net.Commerce Template Designer

The Template Designer is a Java applet-based, graphical object-oriented editing tool that allows you to create Web pages for an online mall or store, and to design and modify templates with a graphical HTML editor. You can use it to do the following:

- Create and update home pages, product pages, category pages, and Product Advisor pages.
- Design headers and footers for the pages.
- Modify the supplied sample category, product, and Product Advisor templates (if you save them with a new file name).

For security reasons, site administrators and store administrators can open and modify templates and HTML files only for the mall or store to which they have been assigned access. Site administrators can modify mall pages as well as store pages that belong to any store that they may administer.

Store administrators can access only the store pages that belong to the store or stores that they administer.

Note: The purpose of the Template Designer is to help you create some basic pages. It is not exactly a WYSIWYG (What You See Is What You Get) editor, but it translates your design into HTML. Also, you can customize the macros that work with SQL and HTML for accessing information on the database. In this way your Net.Commerce site will work with dynamic pages, so you can quickly and easily set up and maintain the mall or store on the World Wide Web.

For production requirements, you may need to perform additional customization using the Net.Data macros, which define the microflow of your Web site and support your business rules. Figure 34 shows a sample Template Designer page.

Template Designer - rbprdtmp.d2w
$(V_MERCHANT.MESTNAME)
$(V_PRODUCT.PRSDESC)
$(V_PRODATR.PANAME):$(V_PRODATR.PAVAL)
Price $(V_PRODPRCS.PPPRC)$(V_PRODPRCS.PPCUR)
Description:
$(V_PRODUCT.PRLDESC1)

Figure 34. Template Designer

Once you have the Net.Commerce product installed you can start using Template Designer right away as it does not require any additional customization on the OS/390 server. However, we did find that we needed to have JDK 1.1.4 installed on our workstation. For more information see 5.5.2.1, "Java on Your Workstation" on page 87.

5.4 Product Advisor

The Product Advisor provides an interactive environment for shoppers, by creating an "interactive catalog." It adds the following elements to an electronic catalog:

- Marketing knowledge, such as that possessed by a sales professional.
- Technical knowledge, such as that possessed by a product specialist or subject matter expert.
- "Shopping metaphors," to provide shoppers with different ways of finding what they want. Shoppers with little knowledge of a product category can use the Sales Assistance metaphor, which guides them toward appropriate products through a series of questions and answers.

  Those with more knowledge can use the Product Exploration metaphor, which lets them select desired product features from a list. Once the selection has been narrowed down through either of these methods, shoppers can use the Product Comparison metaphor to compare similar products side by side.

The Product Advisor consists of the following components:

- The Catalog Builder, which prepares the product data for use in the electronic catalog.
- Three shopping metaphor builders, which let you set up different presentations of the catalog data.

5.4.1.1 Catalog Builder

You use the Catalog Builder to select the product features that will be displayed and to indicate how this information will be used by the metaphors. The shopping metaphor builders define how the catalog will be presented to shoppers.

The catalog keeps track of how many products are offered in each product category. If a category contains subcategories, the count indicates the total number of products in all subcategories.

The Catalog Builder does not add, change, or delete information about your products: it allows you to choose which data to display in the catalog and how you want it displayed.

5.4.1.2 Shopping Metaphor Builders

People shop in different ways depending on their needs and their product knowledge. The Product Advisor organizes and presents your catalog data in different ways, so that shoppers can search for products in the manner that is best for them. The different styles of presentation are called shopping metaphors, and the tools that you use to set up the metaphors for each category of products are called shopping metaphor builders.

For each metaphor, you use the corresponding metaphor builder to define settings that determine which data from the catalog will be presented and how it will be presented, and to specify a template, which determines the overall appearance of the Web pages that the shopper will see. If you set up the templates with metaphor links, the shopper will be able to switch to a different metaphor for the same category at any time.

There are currently three shopping metaphors in the Product Advisor:

1. Product Exploration

   The Product Exploration metaphor is intended for shoppers who are familiar with the features and feature values for a given category of products. The shopper selects from these features the values that they want, and then a list of the appropriate products that contain those feature values can be displayed.

2. Product Comparison

   The Product Comparison metaphor displays related products side by side, so that shoppers can identify the similarities and differences between them. It can be opened from either Product Exploration or Sales Assistance, and allows the shopper to compare products selected in the previous metaphor.

3. Sales Assistance

   The Sales Assistance metaphor is intended for shoppers who are not sure where to start. It presents them with a series of multiple-choice questions, where each answer determines the next question. You can create as many answers as you want for a given question. For each answer, you can create one subsequent question.

   As the shopper works through the questions, the information provided by each answer is collected and an increasingly refined list of products is determined. The shopper can choose to view this list at any time or to continue with the questions. When the last question is answered, the list of products appears automatically.

   Sales Assistance is the only metaphor that is not automatically deleted when you delete a catalog; thus, if you delete and recreate a catalog in order to update it, you do not have to recreate the Question and Answer tree. However, any links that you assigned will have to be reassigned to the new products.

   The Sales Assistance metaphor is the only metaphor that can be prepared without having a prepared catalog.

Product Advisor requires some additional customization, as we see in 5.5, "Product Advisor Planning and Configuration."

5.5 Product Advisor Planning and Configuration

Implementing Product Advisor requires additional program functions on both the OS/390 Net.Commerce system and administrator's workstation. The shopper's workstation does not require any additional programs to shop in a store that uses Product Advisor.

This section covers the following topics:

- Product Advisor Technical Overview
- Installing Java servlet support
- Configuring Domino Go Webserver Java support
- Configuring the DB2 Distributed Data Facility
- Enabling the DB2 Call Level Interface
- Installing the DB2 Connect product on the administrator's workstation

---

- Configuring the Product Advisor administrator workstation and starting Product Advisor

There are quite a few things that need to be checked. To help us with this task, we used the following books:

- *WOW! DRDA Supports TCP/IP: DB2 Server for OS/390 and DB2 Universal Database*, SG24-2212
- *DB2 for OS/390 Version 5: Installation Guide*, GC26-8970
- *Lotus Domino Go Webserver, Planning for Installation*, SC31-8642
- *Lotus Domino Go Webserver, Webmaster's Guide*, SC31-8643
- *IBM DB2 Connect Personal Edition: Quick Beginnings*, S10J-8162

5.5.1 Product Advisor Technical Overview

Product Advisor is made up of Java applets and servlets that interface with the Web browser, Web server, as well as the Net.Commerce database as shown in Figure 35.

Shopping
Web Browser
OS/390
Domino Go Webserver
Java for OS/390
Product Advisor Servlets
Net.Commerce Mall
Net.Commerce Administration
DB2
DDF
CLI
JDBC
Java_ClassLib
DRDA
DB2 Connect
JDBC
Netscape Java Capabilities API
Java_ClassLib
Product Advisor Applets
Building
Administrator's Web browser

Figure 35. Product Advisor System Components

5.5.1.1 Product Advisor Applets

When you invoke Product Advisor from the Net.Commerce Administrator forms a set of Java applets (BuildTool.java is the anchor class) and some Java class files found in:

`/usr/lpp/NetCommerce/www/Servlets/Public/COM/ibm/ict/netcatalog`

are downloaded to your workstation. There is no OS/390 JDBC (Java Database Connectivity) driver support for directly accessing a DB2 database from an applet, so Product Advisor requires that the DB2 Connect product be installed on your workstation. The Product Advisor applets use the JDBC driver support in DB2 Connect to access the OS/390 DB2 database via a DRDA (Distributed Relational Database Architecture) connection through DDF (Distributed Data Facility) using the CLI (Call Level Interface) running on the OS/390 host.

Ordinarily, Java has built-in security functions that restrict what an applet can do on your workstation. However, Netscape has developed the *Java Capabilities API* that allows (among other things) developers to leave the "sandbox," so that they can write powerful applications on top of Java (given the users permission, of course). The sandbox is the Java term for the carefully defined limits within which Java applets must otherwise operate. The Capabilities classes add facilities to and refine the control provided by the standard Java SecurityManager class. Java developers can use these classes to exercise fine-grained control over an applet's activities beyond the sandbox. For more information see:

`http://developer.netscape.com/docs/manuals/signedobj/capsapi.html`

Product Advisor provides a Netscape SmartUpdate script to install a class, LoadDB2.java. Prior to trying to establish a JDBC connection, LoadDB2.java uses the Netscape Capabilities API to request permission to "break out" of the applet sandbox to load a DLL as shown in Figure 36 on page 86.

Workstation
DB2
D
D
F
CLI
DRDA
DB2
Connect
JDBC
DLL Load
Netscape Java
Capabilities API
Product
Advisor
Applets
LoadDB2
Web Browser

Figure 36. Product Advisor Applets and DB2

A Verisign certificate is used to guarantee the owner and authenticity of LoadDB2.java. See 5.5.2.1, "Java on Your Workstation" on page 87 for information about specific levels of Java required to run Product Advisor.

5.5.1.2 Product Advisor Servlets

Product Advisor supplies three shopping servlets that run on the OS/390 host:

- icmserver.java - reads the requested variables from the mserver.conf file.
- icstfile.java - uses the value in NC_TEDITOR_PATH to find Product Advisor templates.
- icviewer.java - renders a metaphor for a shopper. Also called from the build tool applets to view.

They are found in:

`/usr/lpp/NetCommerce/www/Servlets/Public/`

5.5.1.3 Product Advisor Common Components

Product Advisor ships some common components that are used on the OS/390 server and at the workstation. The Java_ClassLib is a set of Product Advisor Java classes that perform the work against the Net.Commerce database. They contain the SQL code that access the database using JDBC.

5.5.2 Installing Java Servlet Support

The Product Advisor administration tool requires Java servlet support to be active. In order to run Java servlets, you need to have the Java Developers Toolkit (JDK) V1.1 and Lotus Domino Go Webserver installed. A *servlet* is a Java program that is invoked by a Web server. Servlets run on Web server systems, just as applets run on Web browser systems. One key difference between a servlet and an applet is that servlets do not access any Java classes that directly provide graphical presentation services.

Like Java applets, servlets are generally platform-independent. This is a great advantage over Common Gateway Interface (CGI) or Go Webserver Application Programming Interface (GWAPI) programs, since at the very least, CGI and GWAPI programs must be recompiled when moving from one hardware platform or operating system platform to another. Often, CGI and GWAPI programs must also be modified at the source level when moving from one operating system platform to another.

In comparison, Java servlets can be moved from one platform to another without making any changes (in nearly all cases).

Servlets also benefit from the strengths of Java, such as the ability to easily use object-oriented programming techniques.

Servlets are supported beginning with Domino Go Version 4.6.1 for OS/390. The Java Virtual Machine is required to use servlets. The Java Developers Kit is required to create servlets.

To ensure that the JDK is correctly installed and the Domino Go Webserver Java servlet support is activated, refer to the JDK documentation and to *Domino Go Webserver, Planning for Installation*, SC31-8642.

5.5.2.1 Java on Your Workstation

Having the correct level of the JDK on your workstation is just as important as having the correct JDK level running on the OS/390 server. Net.Commerce requires that you have JDK 1.1.4 (or later) installed on your workstation. To check your Netscape Java level on a workstation running Windows 95, open the Java console from the **Window** option on the Netscape browser menubar (see Figure 37 on page 88). The update changed the level from Java 1.1.2 to 1.1.4 on our machine. The JDK is available for downloading from:

`http://help.netscape.com/filelib.html`

Follow the instructions on that page to download and install the update.

The WIN32 JDK update will enhance your Java functionality with the Java Developers Kit version 1.1 update. This download improves Java support in Netscape Communicator to run the very latest applets. Without this update, you will get a failure when trying to run the Product Advisor administrator function on your workstation..

Note: When we suspected that something was going wrong with Java, we used the Java console window in Netscape for debugging. Select **Window Java Console** to start it. Press **?** for help. For example, you can set the Java debugging level by selecting levels 0-9. Level 9 is the highest debugging level. The Java console can be used to help debug problems. Figure 37 shows all the debugging options you can use from the Java console.

Java Console
Clear
Close

```
Netscape Communications Corporation -- Java 1.1.4
Type '?' for options.
Netscape Java Console Commands:
 b:  break into the debugger (Windows only)
 c:  clear console window
 d:  dump applet context state to console
 f:  finalize objects on finalization queue
 g:  garbage collect
 h:  print this help message
 l:  capture all classes loaded by an applet to a directory
 m:  print current memory use to console
 q:  hide console
 s:  dump memory summary to "memory.out"
 t:  dump thread info to "memory.out"
 x:  dump memory to "memory.out"
 X:  dump memory (detailed) to "memory.out"
 0-9: set applet debug level to <n>

# Applet debug level set to 9
```

Figure 37. Netscape Java Window

5.5.2.2 Java on OS/390

On our OS/390 server, we had Java JDK 1.1.1 installed in directory `/usr/lpp/Java/J1.1.1/bin`. You can get the latest Java for OS/390 code from the S/390 Web site:

`http://www.s390.ibm.com/java`

To verify that the installation process had completed successfully, we first updated our /HOME/.profile file as follows:

```
# ==================================================
# Start of JAVA section
# ==================================================
export PATH=/usr/lpp/Java/J1.1.1/bin:$PATH
echo "--> PATH set for JAVA"
echo $PATH
export JAVA_HOME=/usr/lpp/Java/J1.1.1
echo "--> JAVA_HOME path set"
echo $JAVA_HOME
#
# ====================================================
# Added classpath for JAVA classes
# ====================================================
CLASSPATH=/usr/lpp/Java/J1.1.1/lib/classes.zip:.
export CLASSPATH
echo "--> CLASSPATH set"
echo $CLASSPATH
```

We then re-accessed the shell and tested with the command shown in Figure 38:

```
5647-A01 (C) Copyright IBM Corp. 1993, 1997
(C) Copyright Mortice Kern Systems, Inc., 1985, 1996.
(C) Copyright Software Development Group, University of Waterloo, 1989.

All Rights Reserved.

U.S. Government users - RESTRICTED RIGHTS - Use, Duplication, or
Disclosure restricted by GSA-ADP schedule contract with IBM Corp.

IBM is a registered trademark of the IBM Corp.
--> PATH set for Java
/usr/lpp/Java/J1.1.1/bin:/bin:.:/u/jarmo:
--> JAVA_HOME path set
/usr/lpp/Java/J1.1.1
--> CLASSPATH set
/usr/lpp/Java/J1.1.1/lib/classes.zip

#:JARMO:/u/jarmo: >java -version
java version "JDK1.1.1 IBM build m111-19970926"
#:JARMO:/u/jarmo: >
 ===>
                                                                 RUNNING
ESC=¢   1=Help      2=SubCmd    3=HlpRetrn  4=Top       5=Bottom    6=TSO
        7=BackScr   8=Scroll    9=NextSess 10=Refresh  11=FwdRetr  12=Retrieve
```

Figure 38. The Verification of Java Installation on OS/390

To verify that the Java servlet support is activated in the Domino Go Webserver, see *Lotus Domino Go Webserver, Planning for Installation*, SC31-8642 chapter "Installing Your Secure Server" and *Lotus Domino Go Webserver, Webmaster's Guide*, SC31-8643 chapter "Using the servlet configuration file." You have to check that the Domino Go Webserver configuration file httpd.conf includes directives ServerInit, ServerTerm, and Service. The actual path statements may be different in your installation.

```
#   ======================================
#   *** JAVA Servlet Support directives ***
#   ======================================
ServerInit      /usr/lpp/internet/bin/libjavsetup.so:Setup /etc/servlet.conf
ServerInit      /usr/lpp/internet/sbin/libservlet.so:Init WEBSRV
ServerTerm      /usr/lpp/internet/sbin/libservlet.so:Term

Service         /servlet/*              /usr/lpp/internet/sbin/libservlet.so:servlet*
Service         /admin-bin/RestartJVM   /usr/lpp/internet/sbin/libservlet.so:RestartJVM
```

5.5.3 Configuring Domino Go Webserver Java Support for Product Advisor

In this section, we use the same step numbering as in the *Net.Commerce: Configuring and Getting Started* manual.

1. There are some changes that must be made to the Domino Go Webserver configuration files httpd.conf and servlet.conf, and also to the environment variables file httpd.envvars. Refer to the Domino Go Webserver documentation for an explanation of these files. These files are usually located in the /etc directory in the hierarchical file system.

   Net.Commerce: Configuring and Getting Started uses the variables shown in Table 3 to define where the JDK, Domino Go Webserver JDBC and Net.Commerce files are installed.

Table 3. Installation Paths

Replace	Our installation	Your installation
<JavaHome> The directory where Java is installed.	/usr/lpp/Java/J1.1.1	
<LGWHome> The directory where Domino Go Webserver is installed.	/usr/lpp/internet	
<JDBCHome> The directory where Java Database Connectivity (JDBC) class libraries (db2jdbcclasses.zip) are installed.	/usr/lpp/db2/db2510	
<NCHome> The directory where Net.Commerce is installed.	/usr/lpp/NetCommerce	

2. Ensure that the appropriate Protect and Java servlet support directives are specified in the Web server configuration file httpd.conf, as shown in Figure 39 on page 91.

```
******************************** Top of Data ***************************
###### IBM Net.Commerce ######
Authentication  BASIC  /usr/lpp/NetCommerce/cgi-bin/cmnicapi:Authenticatication

Protect /msprotect/* www.itsoshop.com {
ServerId        Private_Authorization
Authtype        Basic
GetMask         All@(*)
PutMask         All@(*)
PostMask        All@(*)
Mask            All@(*)
PasswdFile      %%DB2%%
}

Pass    /te_html/*   /usr/lpp/NetCommerce/instance/itsoinst/teditor/te_html/* www.itsoshop.com
Pass    /ca_html/*   /usr/lpp/NetCommerce/instance/itsoinst/teditor/ca_html/* www.itsoshop.com

ServerInit        /usr/lpp/NetCommerce/cgi-bin/cmnicapi:ServerInit
Service       /msprotect/*        /usr/lpp/NetCommerce/cgi-bin/cmnicapi:Service/*
Service       /cgi-bin/msrvr/*    /usr/lpp/NetCommerce/cgi-bin/cmnicapi:Service/*

Pass    /storemgr/*  /usr/lpp/NetCommerce/html/en_US/ncadmin/storemgr/*
Pass    /sitemgr/*   /usr/lpp/NetCommerce/html/en_US/ncadmin/sitemgr/*
Pass    /ncacom/*    /usr/lpp/NetCommerce/html/en_US/ncadmin/common/*
Pass    /ncsample/*  /usr/lpp/NetCommerce/html/en_US/ncsample/*
Pass    /ncagif/*    /usr/lpp/NetCommerce/html/en_US/ncadmin/gif/*
Pass    /butnbars/*  /usr/lpp/NetCommerce/html/en_US/ncadmin/butnbars/*
Pass    /ncadmin/*   /usr/lpp/NetCommerce/html/en_US/ncadmin/*  www.itsoshop.com
Pass    /nchelp/*    /usr/lpp/NetCommerce/html/en_US/nchelp/*
Pass    /ncerror/*   /usr/lpp/NetCommerce/html/en_US/ncerror/*
Pass    /ncbooks/*   /usr/lpp/NetCommerce/html/en_US/ncbooks/*
Pass    /demomall/*  /usr/lpp/NetCommerce/html/en_US/demomall/*
Pass    /bus2bus/*   /usr/lpp/NetCommerce/html/en_US/bus2bus/*
Pass    /hs/*        /usr/lpp/NetCommerce/html/en_US/bus2bus/*
Pass    /nextgeneration/*  /usr/lpp/NetCommerce/html/en_US/nextgeneration
Pass    /ca_icons/*  /usr/lpp/NetCommerce/html/en_US/ca_icons/*

AddType  .js      application/x-javascript      ebcdic  1.0 #Net.Commerce java
###### End of IBM Net.Commerce ######
#   ======================================
#   *** JAVA Servlet Support directives ***
#   ======================================
ServerInit      /usr/lpp/internet/bin/libjavsetup.so:Setup /etc/servlet.conf
ServerInit      /usr/lpp/internet/sbin/libservlet.so:Init WEBSRV
ServerTerm      /usr/lpp/internet/sbin/libservlet.so:Term

Service         /servlet/*              /usr/lpp/internet/sbin/libservlet.sc:servlet*
Service         /admin-bin/RestartJVM   /usr/lpp/internet/sbin/libservlet.sc:RestartJVM
```

Figure 39. Directives for Net.Commerce Servlets

3. In this step, you need to update five directives in the servlet configuration file, servlet.conf. This file is located in the same directory as the httpd.conf file.

   Note: Our examples are cut to fit in the page. Although the JavaLibPath and JavaClassPath may be split in our example, enter them on one long line:

ServletLog Specify the name and location of the log file to which servlet messages will be written when the servlet log method is used.

```
Default:  ServletLog <server_root>/logs/servlet-log
Syntax:   ServletLog <filename>
```

For example:

```
ServletLog      /usr/lpp/internet/server_root/logs/servlet-log
```

JVMLog Specify the name and location of the log file to which JVM console messages will be written. For example:

```
JVMLog      /usr/lpp/internet/server_root/logs/jvm-log
```

JavaPath Specify the directory where the JDK executable to start the JVM is located, which usually means <JavaHome>/bin

```
JavaPath    /usr/lpp/Java/J1.1.1/bin
```

JavaLibPath Specify directories that need to be prepended to the LIBPATH environment variable by setting this to <JavaHome>/lib/mvs:<JavaHome>/lib/mvs/native_threads

```
JavaLibPath    /usr/lpp/Java/J1.1.1/lib/mvs:
               /usr/lpp/Java/J1.1.1/lib/mvs/native_threads
```

JavaClassPath Specify the servlet JVM classpath.

Note: There is an error in *Net.Commerce: Configuring and Getting Started*. The path for <NCHome>/servlets should be <NCHome>/www/Servlets/Public.

```
<JavaHome>/lib/classes.zip:
<LGWHome>/server_root/cgi-bin/icsclass.zip:
<LGWHome>/server_root/servlets/public:
<LGWHome>/server_root/cgi-bin:
<JDBCHome>/classes/db2jdbcclasses.zip:
<NCHome>/www/Servlets/Public
```

```
JavaClassPath /usr/lpp/Java/J1.1.1/lib/classes.zip:
              /usr/lpp/internet/server_root/cgi-bin/icsclass.zip:
              /usr/lpp/internet/server_root/servlets/public:
              /usr/lpp/internet/server_root/cgi-bin:
              /usr/lpp/db2/db2510/classes/db2jdbcclasses.zip:
              /usr/lpp/NetCommerce/www/Servlets/Public
```

EServlet and Service directives specify the initialization parameters for external servlets. These directives are added to servlet.conf by the cmnconf configuration program during configuration of each instance. For example, our directives were:

```
###### IBM Net.Commerce ######
ESERVLET icmserver icmserver {
    configfile=mserver.conf
}
SERVICE icmserver /servlet/icmserver

ESERVLET icviewer icviewer {
    configfile=mserver.conf
    content=text/html
    www.itsoshop.com=/usr/lpp/NetCommerce/html/en_US/itsoinst
}
SERVICE icviewer /servlet/icviewer
###### End of IBM Net.Commerce ######
```

Note: At the time of writing new function is planned to add caching to the icviewer servlet to take advantage of the multi-threading support in JDBC on OS/390. Multi-threading support was introduced with DB2 APAR PQ09901.

A new record will be added to the ESERVLET icviewer directive called *cachelevel*. The following levels will be accepted:

- cachelevel=0 (turns off all caching)
- cachelevel=1 (will keep the database connection alive)
- cachelevel=2 (will cache connection and merchants, this is the default)
- cachelevel=3 (will cache connection, merchants, and categories)

4. Next you need to specify values for the following records in the Web server environment variables file, **httpd.envvars**. This file is usually in the /etc directory in the HFS.

Note: Our examples are cut to fit in the page. Enter it on one long line:

PATH Specify the PATHs. Enter all on one line.

```
<LGWHome>/bin:
<LGWHome>/sbin:
<JavaHome>/bin
```

```
PATH=/bin:.:/usr/sbin:
     /usr/lpp/internet/bin:
     /usr/lpp/internet/sbin:
     /usr/lpp/Java/J1.1.1/bin
```

NLSPATH Specify the PATHs to the message catalogs. Enter all on one line.

```
<LGWHome>/%L/%N:
<NCHome>msg/%L/%N
```

```
NLSPATH=/usr/lib/nls/msg/%L/%N:
        /usr/lpp/internet/%L/%N:
        /usr/lpp/NetCommerce/msg/%L/%N
```

Note: NLSPATH gets the %L directory name from the LANG environment variable in the httpd.envvars file. LANG or LC_ALL environment variables must be equal to en_US in order for Net.Commerce to find the message catalog. You can substitute (hardcode) en_US in the NLSPATH replacing %L if you like.

LIBPATH Specify the directories that contain DLL libraries. Enter all on one line.

```
<LGWHome>/bin:
<LGWHome>/sbin:
<NCHome>/lib:
<JavaHome>/lib/mvs/native_threads:
<JDBCHome>/lib:
<JDBCHome>/classes
```

```
LIBPATH=/usr/lpp/internet/bin:
        /usr/lpp/internet/sbin:
        /usr/lpp/NetCommerce/lib:
        /usr/lpp/Java/J1.1.1/lib/mvs/native_threads:
        /usr/lpp/db2/db2510/lib:
        /usr/lpp/db2/db2510/classes
```

JAVA_HOME Modify this to point to <JavaHome>

```
JAVA_HOME=/usr/lpp/Java/J1.1.1
```

CLASSPATH Set to the same value as JavaClassPath in `servlet.conf` (see step 3 on page 91). Enter all on one line.

```
<JavaHome>/lib/classes.zip:
<LGWHome>/server_root/cgi-bin/icsclass.zip:
<LGWHome>/server_root/servlets/public:
<LGWHome>/server_root/cgi-bin:
<JDBCHome>/classes/db2jdbcclasses.zip:
<NCHome>/www/Servlets/Public
```

```
CLASSPATH=/usr/lpp/Java/J1.1.1/lib/classes.zip:
          /usr/lpp/internet/server_root/cgi-bin/icsclass.zip:
          /usr/lpp/internet/server_root/servlets/public:
          /usr/lpp/internet/server_root/cgi-bin:
          /usr/lpp/db2/db2510/classes/db2jdbcclasses.zip:
          /usr/lpp/NetCommerce/www/Servlets/Public
```

LD_LIBRARY_PATH Enter all on one line.

```
<JavaHome>/lib/mvs:
<JavaHome>/lib/mvs/native_threads:
<JDBCHome>/classes:
<JDBCHome>/lib
```

```
LD_LIBRARY_PATH=/usr/lpp/Java/J1.1.1/lib/mvs:
                /usr/lpp/Java/J1.1.1/lib/mvs/native_threads:
                /usr/lpp/db2/db2510/classes:
                /usr/lpp/db2/db2510/lib
```

DSNAOINI Used for Java Database Connectivity (JDBC). We will discuss this file later in 5.5.5.2, "Configuring the DSNAOINI Data Set" on page 102.

```
DSNAOINI=DB2V510U.DB2CLI.CLIINI
```

5.5.4 Configuring the DB2 Distributed Data Facility

The DB2 Distributed Data Facility (DDF) allows applications running in a remote application requester environment that supports DRDA to access data in DB2 subsystems. In our case DDF, when used in conjunction with the DB2 Connect product on the workstation, allows the Product Advisor applets remote access to data in the DB2 database on the OS/390 server. To enable Product Advisor to create new product metaphors, perform the following steps. For more information on DDF see, *DB2 for OS/390 Version 5 Installation Guide*, GC26-8970.

The following table, Table 4 contains a list of things you are going to need to decide upon before starting to customize DDF.

Table 4. Configuring the DB2 Distributed Data Facility (DDF)

Description	Our installation	Your installation
hlq of DB2 Datasets	DB2V510	
DB2 Location Name	SC58DDF	
DB2 Network LUName	SC58DB2	

1. Configure DDF, specifying a DB2 location name and DRDA port number.

   We had DB2 installed and running but DDF was not customized. To update DB2 to customize DDF you need to first run the DB2-supplied customization clist, DSNTINST as shown in Figure 40 on page 95.

```
  Menu  List  Mode  Functions  Utilities  Help
 ─────────────────────────────────────────────────────────────────────────
                             ISPF Command Shell
Enter TSO or Workstation commands below:

===> dsntinst



Place cursor on choice and press enter to Retrieve command

=> os
=> dsntinst
=> cmnconf
=> setr raclist(facility) refresh
=> adduser instjl dfltgrp(cmngrp) omvs(uid(0) home('/usr/lpp/NetCommerce')
=> setr raclist(started) refresh
=> ralter started db51dist.* stdata(user(ddf))



 F1=Help      F3=Exit     F10=Actions  F12=Cancel
```

Figure 40. The ISPF Command Shell

Enter UPDATE on option 1 INSTALL TYPE, and check the other parameters, especially option 4 PREFIX for your input data sets (see Figure 41 on page 96). You will find it useful to see the panel IDs by issuing command PANELID on the command line of any of these panels.

```
DSNTIPA1            INSTALL, UPDATE, AND MIGRATE DB2 - MAIN PANEL
===>

Check parameters and reenter to change:

 1  INSTALL TYPE          ===> UPDATE    Install, Update, or Migrate
 2  DATA SHARING          ===>           Yes, No, or blank for Update

Enter the following value for migration only:
 3  DATA SET NAME(MEMBER) ===>

Enter name of your input data sets (SDSNLOAD, SDSNMACS, SDSNSAMP, SDSNCLST):
 4  PREFIX                ===> DB2V510
 5  SUFFIX                ===>

Enter to set or save panel values (by reading or writing the named members
 6  INPUT MEMBER NAME     ===> DSNTIDXA  Enter to read old panel values
 7  OUTPUT MEMBER NAME    ===>           Enter to write new panel values



PRESS:  ENTER to continue   RETURN to exit   HELP for more information


F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 41. Install, Update, and Migrate DB2 - Main Panel

The next panel is where you define the data set where you will store the customized JCL job, DSNTIJUZ. Enter the output data set for the sample library (this might be the only line you are able to update on this panel). See Figure 42 on page 97 for an example of our installation.

```
DSNTIPT          UPDATE DB2 - DATA SET NAMES PANEL 1
===>

Data sets allocated by the installation CLIST for edited output:
  1  TEMP CLIST LIBRARY ===> DB2V510.NEW.SDSNTEMP
* 2  SAMPLE LIBRARY     ===> DB2V510.NEW.SDSNSAMP

Data sets allocated by the installation jobs:
  3  CLIST LIBRARY      ===> DB2V510.NEW.SDSNCLST
  4  APPLICATION DBRM   ===> DB2V510.DBRMLIB.DATA
  5  APPLICATION LOAD   ===> DB2V510.RUNLIB.LOAD
  6  DECLARATION LIBRARY===> DB2V510.SRCLIB.DATA

Data sets allocated by SMP/E and other methods:
  7  LINK LIST LIBRARY  ===> DB2V510.SDSNLINK
  8  LOAD LIBRARY       ===> DB2V510.SDSNLOAD
  9  MACRO LIBRARY      ===> DB2V510.SDSNMACS
 10  LOAD DISTRIBUTION  ===> DB2V510.ADSNLOAD
 11  EXIT LIBRARY       ===> DB2V510.SDSNEXIT
 12  DBRM LIBRARY       ===> DB2V510.SDSNDBRM
 13  IRLM LOAD LIBRARY  ===> DB2V510.SDXRRESL

PRESS:  ENTER to continue   RETURN to exit   HELP for more information


F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 42. Update DB2 - Data Sets Names Panel 1

From the next panel, UPDATE DB2 - SELECTION MENU (panel not shown):

a. Select option 1, DATA PARAMETERS to check and update volume serial(s).

b. Select option 17. APPLICATION PROGRAMMING DEFAULTS PANEL 1 and enter a non-zero value for the EBCDIC CODED CHAR SET field. We entered 65533.

c. Select option 26, DISTRIBUTED DATA FACILITY:

   - Enter a DDF STARTUP OPTION. We defined AUTO because we want DDF to start up when DB2 starts, as shown in Figure 43 on page 98.
   - Enter a name for your DB2 LOCATION NAME. The DB2 location name is a unique name which application requesters use to connect to this DB2 subsystem.

     The name must begin with a letter and must not contain special characters. We will use this name again later when we install DB2 Connect. We used SC58DDF as shown in Figure 43 on page 98.
   - Enter the DB2 NETWORK LUNAME parameter. The LU name is used to identify the DB2 subsystem to VTAM and to uniquely identify logical units of work. Even if you are planning to use only TCP/IP to communicate with remote sites, you still have to configure the LU name parameter and VTAM, because DB2 uses the network ID and the LU name to identify units of work.

```
DSNTIPR          UPDATE DB2 - DISTRIBUTED DATA FACILITY
===>

Enter data below:

 1 DDF STARTUP OPTION   ===> AUTO      NO, AUTO, or COMMAND
 2 DB2 LOCATION NAME    ===> SC58DDF   The name other DB2s use to
                                               refer to this DB2
 3 DB2 NETWORK LUNAME   ===> SC58DB2   The name VTAM uses to refer to this DB2
 4 DB2 NETWORK PASSWORD ===>           Password for DB2's VTAM application
 5 RLST ACCESS ERROR    ===> NOLIMIT   NOLIMIT, NORUN, or 1-5000000
 6 RESYNC INTERVAL      ===> 2         Minutes between resynchronization period
 7 DDF THREADS          ===> ACTIVE    (ACTIVE or INACTIVE) Status of a
                                       database access thread that commits or
                                       rolls back and holds no database locks
                                       or cursors
 8 DB2 GENERIC LUNAME   ===>           Generic VTAM LU name for this DB2
                                       subsystem or data sharing group
 9 IDLE THREAD TIMEOUT  ===> 0         0 or seconds until dormant server ACTIVE
                                       thread will be terminated (0-9999)
10 EXTENDED SECURITY    ===> NO        Allow change password and descriptive
                                       security error codes.  YES or NO.
PRESS:  ENTER to continue   RETURN to exit   HELP for more information


  F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 43. First Panel for Distributed Data Facility

d. Select option 27, DISTRIBUTED DATA FACILITY PANEL 2 and enter values for DRDA PORT and RESYNC PORT. We chose the defaults of 446 and 33000, as shown in Figure 44 on page 99.

```
DSNTIP5          UPDATE DB2 - DISTRIBUTED DATA FACILITY PANEL 2
===>

Enter data below:

 1 DRDA PORT                 ===> 446    TCP/IP port number for DRDA clients
                                         1-65534. 446 is reserved for DRDA.
 2 RESYNC PORT               ===> 33000 TCP/IP port for 2-phase commit. 1-65534
 3 TCP/IP ALREADY VERIFIED ===> NO     Accept requests containing only a userid
                                         (no password)? YES or NO











PRESS:  ENTER to continue   RETURN to exit   HELP for more information


F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 44. Second Panel for Distributed Data Facility

e. Now hit Enter and you should see the following messages:

   ```
   DSNT478I BEGINNING EDITED DATA SET OUTPUT
   DATASET DB2V510.NEW.SDSNSAMP COMPRESSED AT 23:07:04
   DSNT489I CLIST EDITING 'DB2V510.NEW.SDSNSAMP(DSNTIJUZ)',  INSTALL JCL
   ```

   The new updated JCL is written to member DSNTIJUZ in the DB2V510.NEW.SDSNSAMP data set.

f. Run the job DB2V510.NEW.SDSNSAMP(DSNTIJUZ) to add the DDF configuration definitions.

   Note: DB2 must be stopped before running job DSNTIJUZ.

g. The installation process generates the JCL needed to start the DDF address space. The DSNTIJMV member of the SDSNSAMP data set contains the steps to define the DB2 subsystem to OS/390. One of these steps updates the OS/390 PROCLIB with the DB2 procedures. An example follows:

   ```
   //**********************************************
   //*    JCL PROCEDURE FOR THE STARTUP OF THE
   //*    DISTRIBUTED DATA FACILITY ADDRESS SPACE
   //*
   //**********************************************
   //DB51DIST  PROC RGN=0K,
   //               LIB='DB2V510.SDSNEXIT'
   //IEFPROC EXEC PGM=DSNYASCP,REGION=&RGN
   //STEPLIB  DD  DISP=SHR,DSN=&LIB
   ```

   ```
   //          DD  DISP=SHR,DSN=DB2V510.SDSNLOAD
   //          DD  DISP=SHR,DSN=CEE.SCEERUN
   ```

h. You will have to define the task that runs DDF to the Security Services (Resource Access Control Facility (RACF), or equivalent) on OS/390. We used the following commands:

   ```
   ADDGROUP DDFGRP OMVS(GID(0))
   ADDUSER DDF DFLTGRP(DDFGRP) OMVS(UID(0) PROGRAM('/bin/sh') HOME('/'))
   RDEFINE STARTED DB51DIST.* STDATA(USER(DDF) GROUP(DDFGRP))
   SETR RACLIST(STARTED) REFRESH
   ```

   If your DDF user ID is not defined as a superuser, you will see the following error message during startup of DDF:

   ```
   DSNL512I =DB51- DSNLILNR TCP/IP SETRLIMIT FAILED WITH RETURN CODE=139
                   AND REASON CODE=1148033C
   ```

i. Add a VTAM LU definition to match the value that you entered previously in panel DSNTIPR. An example follows:

   ```
            VBUILD TYPE=APPL
   *
   SC58DB2   APPL ACBNAME=SC58DB2,                    X
                  APPC=YES,                           X
                  ATNLOSS=ALL,                        X
                  AUTH=(ACQ),                         X
                  AUTOSES=10,                         X
                  DMINWNL=25,                         X
                  DMINWNR=25,                         X
                  DSESLIM=50,                         X
                  EAS=509,                            X
                  ENCR=NONE,                          X
                  MODETAB=AGWTAB,                     X
                  PARSESS=YES,                        X
                  SECACPT=ALREADYV,                   X
                  SONSCIP=NO,                         X
                  SRBEXIT=YES,                        X
                  SYNCLVL=SYNCPT,                     X
                  VERIFY=NONE,                        X
                  VPACING=2,                          X
                  VTAMFRR=NO
   ```

j. Both the DRDA PORT and RESYNC PORT parameters should specify values that are reserved in the TCP/IP subsystem. Although DDF will work if they are not defined to TCP/IP and not being used by other applications, it is recommended that they be registered. To properly register the DRDA and RESYNC ports, you must add them to your TCP/IP PROFILE data set. Use the PORT statement to register port numbers in the PROFILE data set as follows:

   ```
   PORT
       20 TCP OMVS                 ; OE FTP Server
              DELAYACKS            ; Delay transmission acknowledgements
       21 TCP OMVS                 ; OE FTPD control port
       23 TCP OMVS                 ; OE Telnet Server
          :
          :
          :
      446 TCP OMVS                 ;DRDA SQL port
    33000 TCP OMVS                 ;DRDA SQL resync port
   ```

k. Now when you start DDF with a START DDF command, or if you defined AUTO, when the DB2 subsystem is started, you should see messages similar to the following in the syslog:

```
DSNL003I @ DDF IS STARTING
DSNL519I @ DSNLILNR TCP/IP SERVICES AVAILABLE 317
           FOR DOMAIN wtsc58oe.itso.ibm.com AND PORT 446
DSNL519I @ DSNLIRSY TCP/IP SERVICES AVAILABLE 318
           FOR DOMAIN wtsc58oe.itso.ibm.com AND PORT 33000
DSNL004I @ DDF START COMPLETE 319
           LOCATION  SC58DDF
           LU        USIBMSC.SC58DB2
           GENERICLU -NONE
           DOMAIN    wtsc58oe.itso.ibm.com
           TCPPORT   446
           RESPORT   33000
DSN9022I @ DSNYASCP 'STA DB2'  NORMAL COMPLETION
```

5.5.5 Enabling the DB2 Call Level Interface (CLI)

To use the Java Database Connectivity (JDBC) function, the DB2 CLI Runtime Environment must be set up. Refer to "Setting Up DB2 CLI Runtime Environment" in *DB2 for OS/390 Call Level Interface Guide and Reference*, SC26-8959 for instructions. See also 5.5.5.4, "Testing the JDBC Driver" on page 104.

For Product Advisor, the "local" JDBC driver uses the DB2 CLI interface.

To Run Product Advisor

You will need:

- APAR OW30206 for RRS AF logging support
- Java Database Connectivity Support Feature
- APAR PQ09901 for Open Database Connectivity Support

The DB2 for OS/390 JDBC driver provides Java applications running on OS/390 the ability to access local DB2 data or remote data (TCP/IP or SNA) managed by a distributed relational database architecture server (DRDA Server). The DB2 for OS/390 JDBC driver is implemented as a JDBC-ODBC bridge (known as a Type 1 JDBC driver). A Type 1 driver maps all JDBC method invocations to ODBC calls. Therefore, the DB2 for OS/390 V5.1 JDBC driver requires that the DB2 for OS/390 Version 5.1 CLI driver support be installed prior to, or concurrent with, the installation of this driver.

5.5.5.1 CLI Definitions for the Domino Go Webserver

As previously mentioned, update the LIBPATH, LD_LIBRARY_PATH, and CLASSPATH variables in the **httpd.envvars** file with the following additions. The DB2 for OS/390 JDBC driver support contains the following files:

- JDBC driver dynamic load libraries, libdb2jdbc.so (for java) and libdb2jdbc_g.so (for java_g). The directory that you put these files in must be added to both your LD_LIBRARY_PATH and your LIBPATH environment variables in httpd.conf. Assuming that the JDBC driver was installed in /usr/lpp/db2/db2510, you would add the following to both your LD_LIBRARY_PATH and LIBPATH variables:

```
/usr/lpp/db2/db2510/classes:/usr/lpp/db2/db2510/lib
```

- JDBC classes jar file (db2jdbcclasses.zip). This file must be added to the CLASSPATH environmental variable. Assuming that the JDBC driver was installed in /usr/lpp/db2/db2510, you would add the following to your CLASSPATH:

```
/usr/lpp/db2/db2510/classes/db2jdbcclasses.zip
```

Ensure that you run job SDSNSAMP(DSNTIJCL) to bind the CLI default packages and plan.

Ensure that you grant PUBLIC to execute the plan for CLI (usually DSNACLI). This can be done from SPUFI with the following command:

```
GRANT EXECUTE ON PLAN DSNACLI TO PUBLIC;
```

Add three statements to your Web server startup procedure: The Domino Go Webserver needs to access the CLI dynamic load library, so add the following DD cards to the STEPLIB on your Web server startup procedure:

```
//STEPLIB     DD DSN=hlq.SDSNLOAD,DISP=SHR
//            DD DSN=hlq.SDSNEXIT,DISP=SHR
```

where *hlq* is the high-level qualifier of the DB2 data sets. We used DB2V510 on our system.

5.5.5.2 Configuring the DSNAOINI Data Set

The DSNAOINI data set contains DB2 CLI initialization keywords. This data set is read by programs using the JDBC driver to obtain things like the DB2 subsystem ID and plan name.

The *DB2 for OS/390 Call Level Interface Guide and Reference*, SC26-8959 states that the CLI ini file (DSNAOINI) can be a MVS PDS member or sequential data set, but it cannot reside in the HFS. We ran into problems when we defined the DSNAOINI file as a MVS PDS. The only way we got it to work was to define DSNAOINI as a sequential, fixed block, logical record length 80, data set. The contents of the DSNAOINI data set is shown in Figure 45 on page 103.

Customize this data set for your environment. We used our subsystem name of DB51 for the MVSDEFAULTSSID keyword, and DSNACLI for the PLANNAME keyword. Substitute your subsystem name and plan name accordingly.

```
; This is a comment line...
; Example COMMON stanza
[COMMON]
MVSDEFAULTSSID=DB51
; TRACE is for IBM DEBUGGING
; CLITRACE is for application debugging
; be sure trace is not started before the ini is read,
; else this is missed.
; Be sure that you put this ini out just before the job you want to
; trace, that is, if you have a setup insert job. run that before.
; Turn diagnosis trace on and increase trace buffer size
TRACE=0
;TRACE_NO_WRAP=1
;TRACE_BUFFER_SIZE=2000000
; turn user application trace on and direct to DD name CLITRACE
CLITRACE=0
;TRACEFILENAME=DD:CLITRACE

; Example SUBSYSTEM stanza for DB51 subsystem
[DB51]
MVSATTACHTYPE=CAF
PLANNAME=DSNACLI
```

Figure 45. Sample DSNAOINI Data Set

Note: The square brackets in the initialization data set must consist of the correct EBCDIC characters. The open square bracket must use the hexadecimal characters X'AD'. The close square bracket must use the hexadecimal characters X'BD'. DB2 CLI does not recognize brackets if coded differently. Also, the initialization data set cannot accept sequence numbers. All sequence numbers must be removed.

Add a DSNAOINI DD card to the Web server's procedure.

```
//DSNAOINI  DD  DSN=hlq.DB2CLI.CLIINI,DISP=SHR
```

We used a *hlq*. of DB2V510U on our system. The DSNAOINI DD name must point to the data set containing the CLI initialization data set. In addition, we added a DSNAOINI environment variable definition to our httpd.envvars file.

The JDBC connection gets its DSN information from the CLI initialization data set.

5.5.5.3 Enabling the CLI for Net.Commerce

The URL for a DB2 database defines LOCATION names as follows:

```
jdbc:db2os390:location
```

where location is the DB2 LOCATION name as defined in the DB2 catalog (SYSIBM.LOCATIONS). We defined our DB2 LOCATION name earlier in 5.5.4, "Configuring the DB2 Distributed Data Facility" on page 94.

This variable is located in the *mserver.conf* file in the directory allocated for your instance. In our example, the instance directory was /usr/lpp/NetCommerce/html/en_US/itsoinst. In mserver.conf we changed:

```
IC_JDBC_URL jdbc:db2os390:LOC1
IC_JDBC_NETURL jdbc:db2:LOC1
```

to:

```
IC_JDBC_URL jdbc:db2os390:SC58DDF
IC_JDBC_NETURL jdbc:db2:SC58DDF
```

5.5.5.4 Testing the JDBC Driver

You can run the following test to verify that the JDBC driver was installed correctly. The JDBC driver test is done from the UNIX System Services shell environment.

Export the STEPLIB environmental variable to include the DB2 for OS/390 SDSNEXIT and SDSNLOAD data sets. Export the DSNAOINI environment variable to include the CLI initialization data set. These data sets are required in order to execute the DB2 JDBC driver. For example, add the following to your /home/.profile:

```
# ================================================================
# Start of JAVA and JDBC section
# ================================================================
export PATH=/usr/lpp/Java/J1.1.1/bin:$PATH
echo "--> PATH set for JAVA"
echo $PATH
# Java Servlet support
export JAVA HOME=/usr/lpp/Java/J1.1.1
echo "--> JAVA_HOME path set for servlets"
echo $JAVA_HOME
#
# ====================================================
# Addec LIBPATH for JDBC classes
# ====================================================
export LIBPATH=/usr/lpp/db2/db2510/lib:$LIBPATH
echo "--> LIBPATH path set for JDBC DLLs"
echo $LIBPATH
#
# ====================================================
# Addec classpath for JAVA ard JDBC classes
# Notice the new technique for a'locatirg CLASSPATH
# ====================================================
CLASSPATH=/usr/lpp/Java/J1.1.1/l'b/classes.zip
CLASSPATH=$CLASSPATH:/usr/lpp/db2/db2510/classes/db2jdbcclasses.z'p
CLASSPATH=$CLASSPATH:.
export CLASSPATH
echo "--> CLASSPATH set for JAVA and JDBC support"
echo $CLASSPATH
# ====================================================
# Addec LD PATH for JDBC classes
# ====================================================
export LD_LIBRARY_PATH=/usr/lpp/db2/db2510/lib:$LD_LIBRARY_PATH
echo "--> LD PATH set for JDBC support"
# ====================================================
# Addec export for the CLI INI dataset
# ====================================================
export DSNAOINI=DB2V510U.DB2CLI.CLIINI
# ====================================================
# Addec export for DB2 load libraries
# ====================================================
export STEPLIB=DB2V510.SDSNEXIT:DB2V510.SDSNLOAD
# ====================================================
# End of JAVA and JDBC section
# ====================================================
```

1. Edit /usr/lpp/db2/db2510/samples/sample01/sample01.java and make the following change:

   ```
   String url = "jdbc:db2os390:stlldb2g";
   ```

   Our location name is SC58DDF. So we changed the location name:

```
String url = "jdbc:db2os390:SC58DDF";
```

2. Go into the OMVS shell and compile the Java code

```
cd /usr/lpp/db2/db2510/samples/sample01
javac sample01.java
```

3. From the OMVS shell, run the Java code

```
/usr/lpp/db2/db2510/samples/sample01: >java sample01
**** JDBC Entry within class sample01.
**** JDBC Connection to DB2 for OS/390.
**** JDBC Statement Created
**** JDBC Result Set Created
Table NAME = SYSCOPY
Table NAME = SYSCOLAUTH
Table NAME = SYSCOLUMNS
Table NAME = SYSFOREIGNKEYS
Table NAME = SYSINDEXES
Table NAME = SYSINDEXPART
Table NAME = SYSKEYS
Table NAME = SYSLINKS
Table NAME = SYSRELS
Table NAME = SYSSYNONYMS
Table NAME = SYSTABAUTH
Table NAME = SYSTABLEPART
.
.
**** JDBC Result Set output completed
**** JDBC Statement Closed
**** JDBC Disconnect from DB2 for OS/390.
**** JDBC Exit from class sample01 - no  Errors.
```

If you get these results your JDBC connection is configured correctly.

5.5.6 Configuring Your Administrator's Workstation and Starting Product Advisor

Several changes need to be made to the administrator's workstation to use the Product Advisor administration functions, they are as follows:

1. Install DB2 Connect V5 on the administrator's workstation.

   DB2 Connect is required to be installed on the workstation where you will be running Product Advisor Builder.

   See *IBM DB2 Connect Personal Edition Quick Beginnings*, S10J-8162 for full installation instructions. The installation of DB2 Connect for a workstation is quite straight-forward, especially if you know the following:

   - The type of host connectivity that you want to use:
     - A direct connection using DB2 Connect Personal Edition
     - A connection that uses an SNA gateway
   - The protocol to be used for host connectivity:
     - Advanced Program-to-Program Communication (APPC)
     - Transmission Control Protocol/Internet Protocol (TCP/IP)
     - Multiprotocol Transport Networking (MPTN)

2. After you have DB2 Connect installed, use the Client Configuration Assistant within DB2 Connect to create a new DB2 Connect alias to point to DB2 on OS/390. Start the program with `Start - Programs - DB2 for Windows 95 - Client Configuration Assistant` if you are running Windows 95 on your administrator's workstation.

   During this phase, the program will ask you for the name of the server system (which depends on the protocol you choose for the connection), the DB2 location name, and the DRDA port specified during configuration of the DB2 distributed data facility (DDF) on OS/390. In our example configuration, we used TCP/IP and entered our IP address and port number as shown in Figure 46.

Figure 46. Client Configuration Assistant Communication Parameters

   Also, the next two panels (Figure 47 on page 107 and Figure 48 on page 108) are required to define the name of the database on OS/390 to which you want to connect. Each database on a server is cataloged using a unique name, so this is the name you must use to identify the database.

   In the target database field, type the name of the database, as specified on the server. The parameter used to identify the target database is dependent on the type of server in which you are connecting. For DB2 for MVS, use *location name*. The location name is a unique name which applications use to request a connection to this DB2 subsystem. We defined our location name in 5.5.4, "Configuring the DB2 Distributed Data Facility" on page 94. The name must begin with a letter and must not contain special characters.

   See Figure 47 on page 107 for an example of the target database definition for our configuration.

Figure 47. Client Configuration Assistant Target Database Name

   The alias name (see Figure 48 on page 108) is the name used by applications running on your workstation to access the DB2 database. It is an arbitrary name that is also used to register the database as an ODBC data source. The alias name can be 1 to 8 alphanumeric characters. In our configuration we defined the database alias with the same name as the target database (SC58DDF), as shown in Figure 48 on page 108. See *IBM DB2 Connect Personal Edition Quick Beginnings*, S10J-8162, Chapter "Configuring DRDA Host Connections on OS/2, Windows 95, or Windows NT Workstations" for full installation instructions.

Figure 48. Client Configuration Assistant Database Alias

3. Set the following environmental variables on the administrator's workstation. We had Windows 95 on our workstation, so we added these lines into the AUTOEXEC.BAT file in the C:\ root directory. In *Net.Commerce: Configuring and Getting Started*, the directory names use a forward slash (/). However, since the directories in the Windows 95 operating system use a backward slash (), we changed them accordingly. `<DB2Home>` is the installation point for DB2 Connect:

LD_LIBRARY_PATH	Set it to `<DB2Home>\sqllib\bin`
CLASSPATH	Add `<DB2Home>\sqllib\java\db2java.zip` to the list of directories.

4. Add the following lines to the Netscape preferences file, normally `prefs.js` or `preferences.js`. There is a warning in the beginning of the file not to edit it, but it is perfectly alright to do so.

   Note: However do not edit the file when Netscape is running. And make a backup of the file before editing. In our installation running with Netscape Navigator 4.04, the `prefs.js` file was in directory C:Program FilesNetscapeUsersdefault.

   Note: The following definitions for `prefs.js` are incorrect as documented in *Net.Commerce: Configuring and Getting Started*. The following are the correct definitions:

```
user_pref("signed.applets.local_classes_have_30_powers", true);
user_pref("signed.applets.low_security_for_local_classes", true);
user_pref("signed.applets.simulate_signatures_on_system_classes", true);
```

5. To open Net.Commerce Administrator, do the following:
   a. Make the following changes to the settings in Netscape:
      - Ensure that the **Memory Cache** and **Disk Cache** settings are greater than zero.
      - Enable the **Java** and **JavaScript** languages.
      - For variable width fonts, select **Times New Roman 12** point.
      - For fixed fonts, select **Courier 10** point. (Other fonts and font sizes may affect the layout of the Net.Commerce Administrator forms on your screen. If you want to use other fonts or other font sizes, you should experiment to see which combination gives the best results.)
      - Enable **Once per Session** for **Verify Documents**.

   b. For optimal results, make the following adjustments to your computer:
      - Screen resolution: 1024 x 768 pixels or higher
      - Number of colors: 256

   c. Maximize your browser window.

   d. To start, Net.Commerce Administrator, type the following URL on your browser's command line: `http://<host_name>/ncadmin/` where `<host_name>` is the TCP/IP name of your Net.Commerce system. In our case `http://www.itsoshop.com/ncadmin/`.

   e. When prompted, enter the user ID and password that were created during installation. Initially, the user ID and password are both set to `admin`. The Net.Commerce Administrator home page appears.

6. Access the Product Advisor window through the Store Manager function of Net.Commerce Administrator. The window shows two buttons on the bottom line, **LOAD** and **INSTALL**.

   After configuring Net.Commerce, you have to download a small file called NetCommerceProductAdvisorClient.jar. This is a Java archive file, which is a collection of Java classes and other files. When the components (class files, images, and sound) of an applet or application are combined into a single Java archive file (jar), they are downloaded by a Java agent (for example, a Web browser) in a single HTTP transaction, rather than requiring a new connection for each of the pieces. This improves dramatically the time needed for downloading.

   Note: This step is performed only once for each Product Advisor administrator workstation. Select **INSTALL** to download the Java archive file to the `\download` subdirectory under Netscape. On our Windows 95 system, the file was downloaded into the following directory:

   `C:\Program Files\Netscape\Communicator\Program\Java\download`

   The directory `download` is automatically created during installation.

   You have to exit and restart the browser in order to activate this download.

Chapter 6. Creating a Self-Contained Store

Now that you have built your Net.Commerce Server instance, you will probably want to start creating your internet store. The online help within the Net.Commerce administrator pages provides step-by-step instructions on how to build various types of stores. However, it can be confusing to navigate around the numerous hypertext links.

In this chapter we go through the process of building a very basic, self-contained store. The purpose of this is to demonstrate the use of the administrator forms which are used to update the Net.Commerce database with information on the structure of your store, and to demonstrate the use of Template Designer to build a sample category and product template.

Firstly, access the Net.Commerce administrator and help pages using your Web browser. On our system we used the following URL: `http://www.itsoshop.com/ncadmin`.

The default user ID and password, in good old tradition, are admin and admin. You should see a page similar to the one shown in Figure 49.

Note: You can use the SiteMgr Access Control form to change the default admin password.

Net.Commerce Administrator - Netscape
Net.Commerce Administrator
The tools you need to open a business on the World Wide Web

Get started building your site using the Site Manager. You can set up one or more stores, and perform a number of administrative tasks with this tool.

Build your interactive catalog using tools provided in the Store Manager. You can create departments, stock shelves, and design

Figure 49. Net.Commerce Administrator Main Panel

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Start a help page session by clicking **Main Help** on the task bar on the left side of the Web page. A separate session should start for the help. Click **How Do I?** in the task bar at the top of the help page. Then scroll down the list on the left hand side and select **Create A Store Starting With Site And Store Manager.** Now select **Create a Self-Contained Store.** A flowchart detailing the steps required to build a store is displayed in Figure 50 on page 113. Clicking on each of the boxes from the online help will take you to additional help text on each item.

At this point you may be wondering how we are going to build a single *Stand-Alone Store* within the mall from the demomall database. The steps we are taking here are designed to introduce you to some of the functions within Net.Commerce. We will be using some of the sample HTML and macros provided by the demomall, so at this point basing the store on demomall is useful. Once you have created your simple store, you can remove the other stores from the mall. The online help provides details on how to do this.

Trying to start with a blank database would be a challenging task, one that even the most experienced Net.Commerce person would find difficult. Starting with the demomall gives you a framework from which to start.

From this point on, the section headings will match the steps in the flowchart in Figure 50 on page 113. The subheadings match the titles of the Web pages you are taken to when you click the steps in the flow chart. You should follow the steps in the online help, and use the instructions in this chapter as supplementary information.

Create an Independent Store
Define the store
Assign access
Create the store front
Specify shipping providers
Enter store information
Create product categories
Create category templates
Configure SET
Define shipping services
Enter product information
Create product templates
Create shopper groups
Create shopper group templates
Implement discounts
Create an intelligent catalog
Create remaining store pages
Customize the store

Figure 50. Create a Stand-Alone Store Flowchart

6.1.1 Define the Store

Go to **Site Manager**, then **Store Records** in the Net.Commerce administrator pages. Fill in the required information, then click on the **Save** button. If you try to save the form without completing a mandatory field, a pop-up window will display and warn you. When you save the file, make sure you get a confirmation message in the window at the bottom of the page. This window is resizable, so you may have to make it bigger to see the messages. (Sometimes it looks like the file has saved, but the confirmation message does not display. If this happens, save the form again, as you cannot be certain the database has been updated). You should see a page similar to that in Figure 51 on page 114.

Net.Commerce Administrator - Netscape
Net.Commerce

Store Records

Store Name: Redbooks Galore

Company Information

Company Name: ITSO Redbooks

Company Phone Number

Contact Information

Last Name: Armiger

Contact's Job Title: ITSO Resident

Contact's Phone Number: 555 4321

The *new store* record has been successfully updated in the database.

Figure 51. Store Records - Save Confirmation

6.1.2 Assign Access

In this section we will add additional user IDs to perform administrator functions.

6.1.2.1 Assign Site and Store Access

Assign a site administrator for the Self-Contained Store you are building. You are probably accessing this page using the admin user ID. If you wish to add another user ID for the person who will maintain the store you are building, this is where you need to do it. You are granting site administrator access because you are building a self-contained store. This is simply a single store within the mall, so you need site (mall) access in order to maintain the store. Go into **Site Manager**, then **Access Control**, to the access control form. Make sure you get the `database update successful` message when you save the form.

6.1.3 Create the Store Front

In this section we will register a store name and start to create a store front.

6.1.3.1 Create a Home Page

Go to **Store Manager** and open the **Template Designer**. There are two methods available to load the Template Designer:

1. Via Store Manager, where you are presented with a selection box, where you can select the store you wish to work with.
2. Via Site Manager, where you have *no* such option of selecting the store you wish to work with.

It is important to access the Template Designer via the correct store. This is because Template Designer adds several records to the top of each file it creates. One of these records is the *Merchant Number*, which corresponds to the store. This ensures that only those pages created for a given store are visible through Template Designer. In the case of a mall, you may have several different stores available, and you may not want the store administrator for one store to have access to the Web pages created for another store. If you access Template Designer via the Site Manager and create Web pages, the merchant number is stored as NULL and you will not be able to view these pages if you later go into Template Designer via Store Manager after having selected your store. Figure 52 shows the selection panel for Template Designer. Select Redbooks Galore and hit **Load**.

Net.Commerce Administrator - Netscape
Net.Commerce
Template Designer
Select Store
Redbooks Galore
Next Generation
Redbooks Galore
Sixth Avenue

Figure 52. Load Template Designer Via Store Manager by Selecting Store First

When you load Template Designer, you will get an information window, which you may minimize but *must not close*. It is a background process that is needed to run Template Designer. See Figure 53 on page 116 for an example.

Template Designer - Untitled
File Edit Insert Settings Objects Help

Template Designer Status

Template Designer (JDK 1.1) is loaded.

Warning:

Figure 53. Template Designer Loaded

Select **File**, **New**, **HTML File** and click on **OK** from the subsequent pop-up window in Template Designer. This creates a blank "canvas" for you to work with. The next few pages and screen shots show the steps required to build a simple HTML home page.

Each element in the sample home page we built is numbered in Figure 54 on page 117. The elements are selected by either clicking **Insert** (for example, Insert, Text) or **Settings** on the pull-down menu bar, or by clicking the icon related to the element directly (the usual windows-type interface). The mouse arrow changes to a cross-hair and you can then draw out a box on the web page canvas. The box signifies roughly (and we mean roughly, the Template Designer is not exactly a WYSIWYG interface) where the element will be in the final Web page. Next you double-click the box you have just drawn out, and a dialog box will appear after a few seconds. It is in this box that you enter details about the element.

In our sample home page in Figure 54 on page 117, the numbers correspond to the figures in the following pages. These figures show the dialog box for each of the elements, what filenames and so on we used to create the final Web page that you can see in Figure 60 on page 121.

Template Designer - rbgalore.html
Redbooks
1
2
3
4
5

Figure 54. Template Designer - Building the Redbooks Galore Home Page

- **1** is an image element. Figure 55 shows the corresponding Image dialog box.

Figure 55. Image Dialog Box for RedBooks Galore Home Page Header

---

The **Show Border** check box is selected so the image will appear to be raised above the surface of the Web page.

We used a static image which we copied from the real ITSO Redbooks home page to the `/usr/lpp/NetCommerce/instance/itsoinst/teditor/te_html` directory. This is the default directory where Template Designer saves all the HTML-type pages for a given instance. In our case, it is `itsoinst`. In order for the default Pass directives in the Web server configuration file to "find" the file, you must place the `/te_html/` subdirectory in front of the file name.

Note: A common problem when copying files into the HFS is not getting the file permission bits set correctly. If you use surrogate user IDs, for example PUBLIC, to access your Web content, you must make sure the other permission bit group settings are set to give at least read access. Otherwise you will see a message similar to the following in the log:

```
ICH408I USER(PUBLIC  ) GROUP(OMVSGRP ) NAME(WEB SERVER PUBLIC   ) 543
  /usr/lpp/NetCommerce/instance/itsoinst/teditor/te_html/test.jpg
  CL(FSOBJ   ) FID(01D6D7F1C8C6F1000F11000015EF0000)
  INSUFFICIENT AUTHORITY TO OPEN
```

You can modify file permission attributes by using the `chmod` command from the shell.

- **2** and **3** are text elements. Figure 56 shows the corresponding Text dialog boxes used to create these text boxes. By typing in the text you want displayed on the page, then highlighting it, clicking **Insert** on the pull-down menu and then choosing one of the styles or headings, you can have the Template Designer automatically wrap the correct HTML tags around your text.

Text
File Edit Insert Help
Text
File Edit Insert Help

```
<H1>Welcome to Redbooks Galore!</H1>
<H4>Your entrance to the wonderful world of Technical Idea's with more than just a hint of RED.</H4>
```

```
<H4>Click on one of the Hypertext links below to get a list of available redbooks on that subject</H4>
```

Figure 56. Text Dialog Boxes

- **4** is another text box. Figure 57 on page 119 shows the corresponding text dialog box and link dialog box. This selection differs from the other text boxes in that it is a hypertext link to a macro. In this case it is a link to a Category Page macro. At this stage in the building of our shop we do not have all the information we require to complete this link. (It requires the

---

Merchant number and Category Reference number for the category we wish to link to. We have not defined the Category Reference number yet). We will start to build this link now and complete it in 6.1.13.3, "Accessing Your Store From A Web Browser" on page 142, after we have defined the Category Reference number.

When you click on one of the boxes in **4**, a text dialog box will appear. From the text dialog box, click on **Insert**, then **Link**. Select **Category Page** from the Link to item and type **OS/390 Redbooks** in the Linked Text field. The Merchant Reference number should already be filled in. Leave the Category Reference number blank for now. Click **OK** and the text dialog box will be filled in with some HTML link text. Hit **File** and **Close - Save Changes**. If using our example, you will need to repeat this step for the AIX Redbooks link.

Text
File Edit Insert Help
Link
Browse
OK
Cancel
Help

```
<A HREF="/cgi-bin/ncommerce/display/category?cgmenbr=3001&cgrfnbr=">OS/390 Redbooks</A>
```

Category Page

Linked Text: OS/390 Redbooks

Merchant Reference Number: 3001

Category Reference Number:

Figure 57. Text and Link Dialog Boxes

5 is another image element. Figure 58 on page 120 shows the relevant dialog box for our gif file.

Figure 58. Image Dialog Box for Your Friendly Redhead

Clicking on **Settings** then **Page** brings up the page dialog box, as shown in Figure 59. You enter details on what, if any, background image you want for the page, and also what title should appear in the Web browser title bar.

Page Settings

Figure 59. Page Settings Dialog Box for Redbooks Galore Home Page

Figure 60 on page 121 shows the HTML page as it looks from a Web browser.

Note: The Template Designer has a debug option from the File menu. This shows the element boxes that you have drawn out superimposed onto the Web page when you view it through the Web browser, so you can ensure you size the boxes correctly for the images and text. If you save your HTML page with debug mode on, it will be saved *with the boxes superimposed*. Therefore, you should switch debug mode off before saving your HTML page.

Redbooks Galore! - Netscape
File Edit View Go Window Help
Redbooks

Welcome to Redbooks Galore!

Your entrance to the wonderful world of Technical Manuals with more than just a hint of RED

Click on one of the Hypertext links below to get a list of available redbooks on that subject.

OS/390 Redbooks

AIX Redbooks

Powered by Net.Commerce

Document Done

Figure 60. Redbooks Galore Home Page As Seen from Browser

6.1.4 Create Template Headers and Footers

Use Template Designer to create headers and/or footers for your website. Open the file as HTML and save it with the **Save as Header** or **Save as Footer** checkbox marked.

We created a header that consisted simply of an image--the Redbooks image that we used in the home page. However, it is very useful to have a footer that has links to other pages. We copied the footer file from `/usr/lpp/NetCommerce/html/en_US/ncsample/footer2.htm` and also the `footer2.gif` from the same directory into the `/usr/lpp/NetCommerce/instance/itsoinst/teditor/te_html` directory and renamed them to redfoot.html and redfoot.gif, respectively. Figure 61 on page 122 shows the HTML file with the changes we had to make so it pointed to redfoot.gif and to the rbgalore.html home page.

```
  <P><BR>
  <center>
    <table border=0 cellpadding=0 cellspacing=0 width=500>
      <tr>
   <td colspan=13 width=496 align=center><img src="/te_html/redfoot.gif" width=497 height=62 usemap="#redfoot"
border=0><p></td>
      </tr>
      <tr>
   <td width=62 align=center valign=top><A href="/te_html/rbgalore.html"><font size=2 color=660033><b>Home</b></font></td>
        <td width=62 align=center valign=top><A href="/cgi-bin/msrvr/;register/form"><font size=-2>Register</font></a></td>
        <td width=62 align=center valign=top><A href="/cgi-bin/msrvr/;execmacro/adrbk.d2w/input"><font
size=-2>Address<br>Book</font></a></td>
        <td width=62 align=center valign=top><A href="/cgi-bin/msrvr/;execmacro/search.d2w/input"><font size=-2>Search</font></td>
        <td width=62 align=center valign=top><A href="/cgi-bin/msrvr/;shopcart/display"><font
size=-2>Shopping<br>Cart</font></a></td>
        <td width=62 align=center valign=top><A href="/cgi-bin/msrvr/;shipto/list"><font size=-2>Prepare<br>Orders</font></a></td>
        <td width=62 align=center valign=top><A href="/cgi-bin/msrvr/;order/list?status=P"><font
size=-2>Place<br>Orders</font></a></td>
        <td width=62 align=center valign=top><A href="/cgi-bin/msrvr/;order/list?status=C"><font
size=-2>Check<br>Order<br>Status</font></a></td>
      </tr>
    </table>
  </center>
<map name="redfoot">
    <area shape="rect" coords="14,3,64,52"   href="/ncsample/base2.htm">
    <area shape="rect" coords="75,3,123,55"  href="/cgi-bin/msrvr/;register/form">
    <area shape="rect" coords="133,3,181,55" href="/cgi-bin/msrvr/;execmacro/adrbk.d2w/input">
    <area shape="rect" coords="194,5,239,54" href="/cgi-bin/msrvr/;execmacro/search.d2w/input">
    <area shape="rect" coords="253,5,302,54" href="/cgi-bin/msrvr/;shopcart/display">
    <area shape="rect" coords="314,5,362,54" href="/cgi-bin/msrvr/;shipto/list">
    <area shape="rect" coords="375,5,421,56" href="/cgi-bin/msrvr/;order/list?status=P">
    <area shape="rect" coords="433,6,480,54" href="/cgi-bin/msrvr/;order/list?status=C">
    <area shape="default" nohref>
  </map>
```

Figure 61. Redfoot.html File Based on Footer2.html

6.1.5 Assign a Home Page

Here we will register the store front page.

6.1.5.1 Assign to a Mall or Single-Store Web Site

Go to **Site Manager**, then **Mall Information**. Figure 62 on page 123 shows the first page of the form as filled in for our sample site. Make sure you complete the Home Page, Header and Footer sections. When you save the form, make sure you receive the update successful message.

Net.Commerce Administrator - Netscape
https://www.itsoshop.com/msprotect/msrvr/admin/nccomn/ncmecg
Net.Commerce

Mall Information

Mall Front

HomePage

/te_html/rbgalore.html

Header

/te_html/redhdr.html

Footer

/te_html/redfoot.html

Tax Rates

Tax Rate 1	Tax Rate 2	Tax Rate 3
15.00	0.00	0.00
Tax Rate 4	**Tax Rate 5**	**Tax Rate 6**
0.00	0.00	0.00

Custom

Document Done

Figure 62. Mall Information Form

6.1.6 Specify Shipping Providers

Go to **Site Manager**, then **Shipping Providers**. Add a new shipping provider by filling in the fields and save the form. In our example, we created "Carrier Pigeon Express." See Figure 63 on page 124 for our example of the Shipping Service Providers form.

Net.Commerce Administrator Netscape
Net.Commerce

Shipping Service Providers

Select

Carrier Pigeon Express - Air

Carrier: Carrier Pigeon Express

Shipping Mode: Air

Description: Air freight

Custom

Custom Field 1

Custom Field 2

Figure 63. Shipping Service Providers Form

6.1.7 Enter Store Information

Go to **Store Manager**, then **Store Information**. Select your store from the list. All fields in bold print are mandatory. These are the fields we completed:

Store Name	Redbooks Galore
Currency	USD
Store Home Page	/te_html/rbgalore.html
Store Headerfile	/te_html/redhdr.html
Store Footerfile	/te_html/redfoot.html

Also City, State, and Country fields are needed. Save and make sure you get the confirmation message.

6.1.8 Create Product Categories

Use the forms provided in Net.Commerce Administrator to create categories one at a time.

6.1.8.1 Create Product Categories Using Net.Commerce Administrator

Go into **Store Manager**, then **Product Categories**. Select your store from the Product Categories form, and then select **Add** from the buttons on the bottom of the page. You will see the Add New Category form. Fill in the fields and then click on **Save** to save the form.

Note: We only saw the category saved message flash on the screen just before the program updated the page with our new addition. This is a known bug and will be fixed in a future APAR.

You would repeat these steps for each category you create. In our example we just created the OS/390 Redbooks and AIX Redbooks categories. Figure 64 shows the form as we completed it.

Net.Commerce Administrator - Netscape
Net.Commerce
Add New Category
Custom

Name: OS/390 Redbooks
Yes
1
Description: OS/390 Redbooks available
/te_html/redbook.gif
/te_html/redbook.gif

Figure 64. Add New Category Form

6.1.9 Create Category Templates

Before you begin, make sure that you have the graphics and text you want to include on your category template, and that the product categories have already been entered in the database.

6.1.9.1 Create a Category Template

Open Template Designer as described before. This time select **File**, **New**, and **Category Template** from the list. As with the home page creation Web page description earlier in this chapter, we will go through the individual elements. Figure 65 shows the Template Designer Category Template os390rbk.d2w that we created for the OS/390 Redbooks category.

Template Designer - os390rbk.d2w
1
2

Figure 65. Create Category Template

1 shows a Text Box with a Category Name Database tag. This corresponds to the text dialog box shown in Figure 66 on page 127.

One difference in Template Designer between the HTML files and template files is the addition of a database pull-down menu in the menu bar of the text dialog box. This menu has a list of database entry names that correspond to entries that are made in the Net.Commerce administrator pages. By selecting one of these, a database tag is placed in the text box which is translated into an SQL command in the macro. In the case of the sample text box displayed in Figure 66 on page 127, the Category Name will be pulled from the database and displayed in the text box. This makes the template dynamic, in that it could be used with many different categories.

The elements in the database specific to that category will be pulled out by the database tag. This Category Template Macro will be associated with a particular category in a form later on in the building process.

Figure 66. Text Box Dialog with Category Name Database Tag Selected

2 is a Product Table. In Figure 67 on page 128, **A** shows the Product Table dialog box with a Thumbnail Image File Database tag selected. The database tags available are listed in the list box on the right of the dialog box. Selecting the Thumbnail file will cause the macro to pull the product thumbnail file, as defined in the Product Information form, to the requested HTML page from the database. The Link to the Product radio button selection causes the thumbnail file to be a hypertext-type link to the actual product. At this stage, these other links may not have been set up. We will set them up in a later step.

In Figure 67 on page 128, **B** shows another database tag selection. This time it is for the Short Description database entry for the product. This description has no link to the product.

A
Product Table
Short Description
Tax Product Code
Thumbnail Image File
Help
Edit SQL
Product Table
Short Description
Tax Product Code
Thumbnail Image File
Add
Remove
Help
Edit SQL
B
Unsigned Java Applet Window

OS/390 Redbooks online or to buy
2
Thumbnail Image File
$(V_PRODUCT.PRTHMB)
Thumbnail Image File - $(V_PRODUCT.PRTHMB)

OS/390 Redbooks online or to buy
2
Short Description
$(V_PRODUCT.PRSDESC)
● No Link
Thumbnail Image File - $(V_PRODUCT.PRTHMB)
Short Description - $(V_PRODUCT.PRSDESC)

Figure 67. Product Table Dialogs

Figure 68 on page 129 shows the Edit SQL dialog box. This box is displayed if you click the **Edit SQL** button in the Product Table dialog box. It shows you the SQL that is generated by the database tags you have selected. If you edited the macro that is produced by the Template Designer after saving the file, you would see this SQL statement.

Figure 68. Product Table Dialogs, Continued

Figure 69 on page 130 shows how the template we have just built will look in a Web browser.

Note: You will not be able to view this via a Web browser at this stage, as we have not completed all the steps. The figure is included purely to give you some idea of how the template will look when it is completed.

OS/390 Redbooks - Netscape

OS/390 Redbooks

OS/390 Redbooks available

OS/390 Redbooks online or to buy

Thumbnail Image File	Short Description
	OS/390 v2r5 Implementation Guide
	Net.Commerce for OS/390 v3

Redbooks
Home
Register
Address Book
Search
Shipping Cost
Inquire Orders
View Orders
Track Order Status

Figure 69. Category Template with Product Table As Seen through Netscape

Figure 70 on page 131 shows the Header and Footer dialog box. This is accessed by clicking **Settings**, then **Header and Footer** from the pull-down menu bar. By selecting **Assigned in the Database**, we are asking the template designer to look in the database to see where we have stored the header and footer file for this Category Template.

Figure 70. Header and Footer Dialog Box

Figure 71 shows the Page Settings dialog box for the Category Template.

Figure 71. Page Settings for the Category Template

6.1.10 Define Shipping Services

In this section we will define shipping services that will be used by a store and define how each product in the store will be shipped.

6.1.10.1 Select Shipping Carriers and Modes

Go to **Store Manager**, then **Shipping Services**. Select your store from the list and add a new supported shipping mode as described in the online help. Figure 72 shows the Shipping Services form as we completed it.

Net.Commerce Administrator - Netscape

Net.Commerce

Shipping Services

Select Store: Redbooks Online

Supported Shipping Mode: Carrier Pigeon Express - Air

Shipping Carrier & Mode: Carrier Pigeon Express - Air

Start Date:

End Date:

Custom

Custom Field 1:

Custom Field 2:

Figure 72. Select Shipping Services Form

6.1.10.2 Create Shipping Codes

Go to **Store Manager**, then **Shipping Services**. Select your store from the list and then select **Product Codes** from the menu on the left. Figure 73 on page 133 shows the form as we completed it.

Net.Commerce Administrator - Netscape
Net.Commerce

Product Shipping Codes

Supported Product Shipping Code: 12345

Product Shipping Code: 12345

Calculation Method: (01) Quantity - Range - Total

Shipping Code Description: Test Product Shipping Code for IISOSHOP

Custom

Custom Field 1:

The *product shipping code* record has been successfully updated in the database.

Figure 73. Product Shipping Codes Form

6.1.10.3 Define Shipping Code Details

Go to **Store Manager**, then to **Shipping Services**, then to, **Shipping Details**. Figure 74 on page 134 shows the form as we completed it.

Net.Commerce Administrator - Netscape
Net.Commerce

Shipping Details

Product Shipping Code: 12345 (01)

Shipping Mode: Carrier Pigeon Express - Air (Effective from 1998-01-01 to 2000-12-31)

Range: minimum: 10

Range: maximum: 100

Charge (Total Cost):

Rate (Unit Cost):

Start Date:

End Date:

Custom

Custom Field 1

The new *shipping details* record has been successfully added to the database.

Figure 74. Shipping Details Form

6.1.11 Enter Product Information

Go to **Store Manager** and then to **Product Information**. Select your store.

6.1.11.1 Enter Basic Product Information

Select **Product** from the Input For drop-down list. Enter the Product Number or Stockkeeping Unit (SKU) number for the product you are entering in the appropriate field as shown in Figure 75 on page 135. Click **Select Parent** and from the panel that is displayed choose your store. Click on the pull-down next to the words Redbooks Galore. You should now see a category called OS/390 Redbooks (501), as shown in Figure 76 on page 136. Go back to the Product/Item Information panel and enter the Parent Reference Number of 501 in the appropriate field.

Note: This is an important step. It associates the product with the parent and as such links the Product Template macro to the Category Template macro. (We specify which macro in 6.1.13, "Template Assignments" on page 140).

Do not try to fill in the Product/Item Reference Number field. This will be filled in automatically when you save the form.

At this time you can also fill in some of the other optional fields like the description fields and the tax code field. In the demomall, the US tax code system is used. We picked a code at random.

Click on **Save**, then click the **Update** form button to see what Product/Item Reference Number has been generated for the product.

Note: We got these messages after saving:

```
The product/item record has been successfully added to the database.

Net.Data Parser error: Illegal symbol (0) at line 240 of file
  /usr/lpp/NetCommerce/macro/en_US/ncadmin/storemgr/s_prdi.d2w
```

Although the Parser error message was displayed, the actual save process was done successfully.

Net.Commerce Administrator - Netscape
Net.Commerce

Product/Item Information

Select Store: Redbooks Galore

Input For: Product

Product Number or Item SKU: os390redbook3

Product/Item Reference Number: 51005

Parent Reference Number: 501

Publish: Yes

Last Updated: 1998 04 27 18.48.

Name/Short Description: OS/390 Domino Go Webserver v5

Description Field 1: Yet another fantastic redbook by yet another fantastic bunch of guys.

Figure 75. Product/Item Information Form

The Select Parent Number form (Figure 76 on page 136) shows you the category tree, after you have created categories (and subcategories) under the parent store.

- An arrow pointing right indicates that more categories exist. Click on the arrow to see them.
- An arrow pointing down means the sub-categories are shown.
- A diamond means you are at the lowest level in the category tree.
- Any category that is highlighted in red means the level is the currently selected level.

Netscape
Net.Commerce

Product Categories

Select Store: Redbooks Galore (8001)

- ▾ *Redbooks Galore* ..... *show products*
  - ◆ **AIX Redbooks (502)**
  - ◆ **OS/390 Redbooks (501)**

Figure 76. Select Parent Number

6.1.11.2 Enter Prices

Go to **Store Manager**, then to **Product Information**, and then to **Prices**. First select your product, then click on **Prices** on the menu bar on the left side of the browser window. This way, you will update prices for the correct product. We added price, precedence, and shopper group. The shopper group of none is the default, which sets the same price for every shopper. Figure 77 on page 137 shows the form as we completed it.

Net.Commerce Administrator - Netscape

Price Information

Product Number or Item SKU: os390redbook3

Price: 20.00

Precedence: 0

Currency: USD

Shopper Group: None

Custom

The *price* record has been successfully added to the database.

Figure 77. Updated Price Form

6.1.11.3 Enter Product Attributes

Go to **Store Manager**, then to **Product Information**, select product, and then go to **Attributes**. The Product Attributes form is shown. First you must create an attribute for a product, then you may define the value for the attribute. For example, attribute is size, and the values might be small, medium, and large. In our case we chose attributes of Hardcopy and Softcopy for the format of the Redbook. Figure 78 on page 138 shows the form as we completed it.

Net.Commerce Administrator Netscape

https://www.tecshop.com/msprotect/mserv/admin/ncadmin/homepg

Product Attributes

Product Number: os390redbook3

Define Attribute

Attribute Name: Softcopy

Attribute Value: HTML, PDF, LIST3820

Create/Remove Attribute

Hardcopy

The *attribute* has been successfully updated in the database.

Figure 78. Product Attributes Form

Repeat these steps for each product you wish to add to the category.

6.1.11.4 Enter Items and Attributes

We did not do this. It is not required, but provides another sub-level of categorization.

6.1.12 Create Product Templates

In this section we will create a product template using the Template Designer.

6.1.12.1 Create a Product Template

Start the Template Designer as before. Select **File**, **New**, **Product Template**. As with the Category Template, the following pages show our Product Template with the elements of interest numbered. Figure 79 on page 139 shows the Product Template, rbprdtmp.d2w, we created.

Template Designer - rbprdtmp.d2w
1
2
3
4

Figure 79. Template Designer - Product Template

- **1** is a text box with MErchant STore NAME Database tag.
- **2** is a text box with the PRoduct Short DESCription tag.
- **3** is an image box which has a database tag for the Product Full Sized Image.
- **4** is a text box with two database field tags. The first pulls the product attribute names from the database, the second pulls the corresponding values.

Figure 80 on page 140 shows a screen shot of the Product Template with the Forms Palette and Form dialog box visible. These are used in the creation of an Add to Shopping Cart type button. First you click the **Form Palette** icon to get the Form Palette box. Next click the **Insert Form Box** icon. Draw out a box where you want your button. Make it slightly bigger than the actual button size you want. Double click the box and the Form dialog box appears. In here select the **Add To Shopping Cart** radio button and the **Display Store Shopping Cart** radio button. Close the dialog box. Click the **Insert Submit Button** icon on the Form Palette. Draw a box *within* the form box you have already created. This creates a submit button that will add the product information you have selected to the Shopping Cart. You can change the SUBMIT to something else within the submit button by double clicking it and the name in the subsequent dialog box.

Template Designer - rbprdtmp.d2w

Figure 80. Product Template: Add to Shopcart Button

6.1.13 Template Assignments

At this point the online help flowchart seems to miss an important couple of steps: the assignment of the templates to the products and categories you have created. The following describes these steps.

6.1.13.1 Category Template Assignment

Go to **Store Manager**, then **Product Categories**. Select your store, then click the arrow beside the store name that appears below the selection list. This lists the Categories available in your store. Click the category you wish to assign a template to, then click the **Template** button at the bottom of the page. Enter the template name in the Category Template Assignment form which appears. Figure 81 on page 141 shows the form as we completed it. Save the form and ensure you get a confirmation message. You can view the Template after you have saved it by clicking the **View Template** button.

Net.Commerce Administrator Netscape
Net.Commerce
Category Template Assignment
Product Category
Shopper Group
Template
Description
Custom
Custom Field 1
Custom Field 2

Product Category: OS/390 Redbooks
Shopper Group: None (default template)
Description: category template for os390 redbooks

Figure 81. Category Template Assignment Form

6.1.13.2 Product Template Assignment

Go to **Store Manager**, then **Product Information**. Select your store and product; the Search button at the bottom of the page will search your store database for all products if you cannot remember the product SKU. The results of the search are displayed in a window at the bottom of the page. You can select one of these and it will fill the entries in the product form for you. Next click the **Templates** button on the task bar on the left side of the administrator page, under Product Information. You will see a form similar to that in Figure 82 on page 142. Enter the product template macro name you created in the Product Template section earlier in this chapter, in the Template form. Save the form, and check for the confirmation message.

Fill in the template name (file name with *.d2w ending), save the form and click on **View Template**. This should show you how the product template actually looks on the browser.

Net.Commerce Administrator Netscape
Net.Commerce
Product Template Assignment
Product Number or Item SKU
Shopper Group
Template
Description
Custom
Custom Field 1
Custom Field 2

Product Number or Item SKU: os390redbook3
Shopper Group: None (default template)

The *shopper group product template* record has been successfully added to the database.

Figure 82. Product Template Assignment Form

The footer file that we copied into our site has all the relevant links to the Home Page, Shopping Cart, Registration Page and more. The site that we have created should now allow you to select a redbook, add it to your shopping cart, and do all the other functions that Net.Commerce provides.

6.1.13.3 Accessing Your Store From A Web Browser

Finally, there is one last but very important link that we need to finish creating so that someone accessing your Internet shop can access the category and product template macros you have built.

The link to a Category Page is an extremely important link, as it allows you to move from your home page in HTML that any browser can access by typing in a simple URL (for example `http://www.itsoshop.com/rbgalore.html`) to a macro that is not a simple URL. If you have a Self-Contained Store and you do not wish your customers to pass through an intermediate Mall frontpage, you will need a link like this in your home page.

Go to **Store Manager** and open the **Template Designer**. Select your store (in our case it is Redbooks Galore) and hit **Load**. Select **File**, **Open**, then select your saved HTML image. Double-click on the box that reads **OS/390 Redbooks** and a text dialog box will appear. This is the same text dialog box that was built in Figure 57 on page 119. We are going to replace the HTML link logic in this text dialog box, so go ahead and erase all the text in the dialog box. After all the HTML link logic text is erased, do the following:

- Select **Insert**, then **Link**. A Link dialog box will appear.
- Select **Category Page** from the Link to item and type **OS/390 Redbooks** in the Linked Text field. The Merchant Reference number should already be filled in.
- Next, fill in the Category Reference number that was created in 6.1.11.1, "Enter Basic Product Information" on page 134. In our example it is 501. If you do not know what your Category Reference number is you can click on **Browse** and a Web browser window will display all the defined product categories.
- Click **OK** and the text dialog box will be filled in with some HTML link text, as shown in Figure 83. Hit **File** and **Close - Save Changes**. If using our example, you will need to repeat this step for the AIX Redbooks link.

Text
Link
Link to
Linked Text
Merchant Reference Number
Category Reference Number
Browse
OK
Cancel
Help

```
HREF="/cgi-bin/ncsrvr/display/category?cgmenbr=3001&cgrfnbr=501">OS/390 Redbooks</a>
```

Link to: Category Page
Linked Text: OS/390 Redbooks
Merchant Reference Number: 3001
Category Reference Number: 501

Figure 83. Link Dialog Box to Create Link to Category Page

From Template Designer you can see what the page will look like by selecting **File**, then **View in Browser**. By clicking the link we have just created you should be taken to a page similar to that in Figure 69 on page 130.

With this final link in place, you can now access your entire Internet shop from a Web browser. The footer file that we copied into the page allows you to access the shopping cart and other Net.Commerce functions.

You can make the home page of your new Web site the default welcome page for your Web server by editing the Web server configuration file `httpd.conf` and changing the Welcome Directive to match the name of your home page. Alternatively, you can simply specify the full name for the home page in your Web browser URL. To access the site we have just created you would specify `http://www.itsoshop.com/rbgalore.html`.

6.1.14 Where Are My Files?

It may not be obvious where Template Designer is storing the files you create. The default directories for the files you create via Template Designer are all prefixed with the path `/usr/lpp/NetCommerce/instance/`*`instname`*`/teditor`. The subdirectories are as follows:

HTML files	/te_html/
Product templates	/product/
Category templates	/category/
General templates	/general/

The /ca_html/ directory contains copies of the Product Advisor templates.

Chapter 7. General Performance Considerations

Net.Commerce uses several critical underlying components that must be tuned correctly for optimal throughput. These components are as follows:

- The Domino Go Webserver, which provides the "window" through which a merchants's online catalog and order fulfillment processes are provided to the Internet community. Many of the Net.Commerce functions are GWAPI programs that run in threads in the Domino Go Webserver address space.
- UNIX System Services, such as threads and I/O access to files in the Hierarchical File System.
- Language Environment (LE) services, that provide the execution run-time environment.
- The services of products like TCP/IP or AnyNet for networking connectivity.
- RACF services or equivalent that provide security functions.

This chapter discusses general performance considerations and suggests strategies you can use to maximize both component and system performance.

7.1 Net.Commerce Performance Tips

When you run Net.Commerce, the workload depends on usage. Generally speaking, however, the Net.Commerce Server daemon communicates, via local sockets, with the Net.Commerce Director. This director is a GWAPI program that runs in a thread under the Domino Go Webserver. If you run multiple Net.Commerce instances you will have multiple Net.Commerce Server daemons. Each Net.Commerce Server daemon creates a set of request handlers. Each is a process within the Net.Commerce address space and each maintains a connection to DB2.

Each request is first handled by the Net.Commerce Director, which sends the request to one of the request handlers within the Net.Commerce Server daemon via a local socket. The Net.Commerce Server daemon then communicates with DB2 using the Net.Data product (shipped with Net.Commerce) and builds a dynamically created HTML page. This HTML page contains catalog data pulled from DB2. The dynamically built HTML page is sent back through the Net.Commerce Director program, which then supplies it to the Domino Go Webserver. The Domino Go Webserver then presents the page to the client browser.

A number of things can be done to help "tune" your Net.Commerce environment.

7.1.1.1 General Performance Suggestions When Designing Your Pages and Macros

__ 1. Limit the use of JavaScript.

JavaScript is a simple interpreted programming language with rudimentary object-oriented capabilities. JavaScript code is embedded in HTML pages that are stored at the Web server. Regular Web content such as HTML text and graphics can be intermixed with JavaScript in the same HTML page.

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When the HTML page that contains JavaScript is downloaded to a browser, the JavaScript code is executed at the browser. In essence, JavaScript allows "executable content" to be distributed over the Internet. You can also imbed JavaScript in Net.Data macros to do things like set cookies or to control fields in a HTML form at the browser.

Depending on how complex an operation your JavaScript is performing at the browser, it may cause delay of the customer transaction.

__ 2. Having fewer objects on HTML pages improves response time.

Each object that you add to your HTML pages generates a separate request to the Web server. Try to avoid adding too many objects (GIF, JPEG) to your pages.

__ 3. Always specify height and width for graphics.

Normally, a graphical browser determines the size of an image and hence, the rectangular space to reserve for it in the display window, by retrieving the image file and extracting its embedded height and width specifications. This is not the most efficient way to render a document since the browser must sequentially examine each image file and calculate its screen space before building adjacent and subsequent document content. Furthermore, the browser cannot display any other information until it has received the image and calculated its size. That can significantly increase the amount of time it takes to write the complete document to the browser.

By specifying height and width in your HTML source for graphic images, you allow the browser to calculate and reserve space before actually downloading it, thus speeding document rendering.

__ 4. Limit the use of server-side includes (SSI).

Server-side includes (SSI) allow you to insert information into CGI programs and HTML documents that the server sends to the client. When server-side include processing is enabled, your server has to parse each byte of every HTML file and CGI program searching for the existence of an SSI directive and, if found, it has to process it. This is a great feature for processing dynamic content, but it requires a large amount of CPU processing for any Web server.

SSI processing can be controlled by the use of the `imbeds` directive. If not using SSIs, set `imbeds off` in your Web server's `/etc/httpd.conf` file.

__ 5. Limit the use of the Secure Socket Layer (SSL) security protocol.

SSL allows the client to authenticate the server and all data and requests to be encrypted. In addition, SSL client authentication requires the server to request a certificate from each client that makes an https request. SSL authentication increases overhead for any Web server, but the biggest increase is to your network traffic.

When you configure your Net.Commerce instance, you can specify on what transactions you will turn SSL on. Only enable SSL during the purchase phase of the shopping trip and always position the purchase as the *last* operation right before a customer leaves your store. Turn it on only when the customer is sending sensitive information to your server, such as credit card information.

When SSL is turned on, all objects on every page are encrypted including graphics. For this reason, minimize the number of graphics on https pages.

__ 6. Avoid table joins in searches.

The capability to query data from multiple tables using a single SQL statement is known as a "join." SQL statements that retrieve data from a single table are more efficient than table joins. To accomplish this may require some redundant data be stored in DB2 tables.

When coding Net.Data macros, avoid coding searches that would require a table join.

__ 7. Disallow searches that cause full database scans.

When coding macros that go against the database, do not allow searches that will cause a *full* database scan (for example, searches of single characters or words like "the").

__ 8. When coding Net.Data macros, minimize the use of imbedded macros.

It is more efficient to execute multiple SQL statements in a single macro than to "call" other macros.

__ 9. Use Net.Data built-in functions sparingly.

Net.Data provides a large set of built-in functions to simplify Web page development. These functions help you develop Web pages by altering data or accessing system services. Net.Data built-in functions are divided into several categories, including general functions, math functions, string functions, word functions and table manipulation functions.

This functionality comes at a great CPU and response time cost.

__ 10. Implement SQL stored procedures.

A *stored procedure* is a compiled program, stored at a DB2 local or remote server, that can execute SQL statements. A typical stored procedure contains two or more SQL statements and some manipulative or logical processing in a host language.

The use of stored procedures requires only one invocation of the Net.Data API. Stored procedures can run as static SQL, thus avoiding costly prepares.

__ 11. Static pages can be pre-loaded into the Domino Go Webserver cache.

Static store pages contain HTML tags and text, as well as other elements suitable for the page, such as images and animation. They do not contain database field tags. They are fixed in nature, meaning that the content of the page appears the same every time it is accessed by a shopper.

Use the `CacheLocalFile` directive to load your most popular static files into the server's memory at startup time to eliminate file I/O to the HFS. You can specify the maximum amount of memory and maximum number of files for caching with the `CacheLocalMaxBytes` and `CacheLocalMaxFiles` directives respectively.

For this reason, try to use static pages as much as possible rather than dynamic pages which involve more I/O to the HFS and the DB2 database.

7.1.1.2 Performance Suggestions When Customizing the Net.Commerce System

__ 1. Net.Commerce performance monitor and trace.

IBM has developed a Net.Commerce performance monitor and trace that reports the throughput and response time of each type of Net.Commerce command. The monitor and its results can be viewed and controlled from a Web browser. This data will be cumulative since the last time the Web server was started.

Some of the highlights include:

- Ability to turn the performance monitor on/off dynamically (not requiring a re-start of the Web server or Net.Commerce).
- Ability to turn the trace on/off dynamically.
- Ability to add timestamps to the trace to allow better analysis of what took place and when.
- Cumulative report of all Net.Commerce commands showing minimum, maximum and average response times.
- Cumulative report showing Net.Commerce error page summary.

If you are running a scalable server, (see 8.1.3, "Scalable Server" on page 161) you can use this information as input when building your WLM policies to control your Net.Commerce workload.

The Net.Commerce performance monitor and trace will be available later this year. Watch this site:

`http://www.s390.ibm.com/nc/ecommerce/index.html`

for an official announcement and information on how to get the code.

__ 2. Eliminate contention for heap storage.

The HEAPPOOLS run-time option is used to control an optional heap storage management algorithm known as heap pools. This algorithm is designed to improve performance of multi-threaded C/C++ applications (like the Net.Commerce daemon) with high usage of malloc(), calloc(), realloc() and free(). When active, HEAPPOOLS virtually eliminates contention for heap storage. HEAPPOOLS was introduced by APARS PQ04514 and PQ04657. See *Language Environment for OS/390 & VM Programming Guide*, SC28-1939 for more information on the HEAPPOOLS run-time option.

3. Controlling Net.Commerce request handlers.

Control the number of request handlers in the Net.Commerce Server daemon during configuration of each instance (MS_NUM_CHILD value in mserver.conf). This number must be from 2 to 99. Increase this value if you anticipate heavy traffic on this site. More request handlers will increase throughput, but each request handler uses system storage and CPU resources. The default is 2. Increasing this number may affect the MS_PORT setting in mserver.conf. See *Net.Commerce: Configuring and Getting Started*, GC24-5862 for more information.

__ 4. Define a unique plan for each Net.Commerce database.

Each NCS instance database requires a *unique* plan name. If the same plan name is used for more than one database, it is possible to get database deadlocks. You can use any name you wish for the plan, so long as it is unique. Having a unique plan name will reduce contention for DB2 resources. Remember to bind your DBRM to this unique plan name.

__ 5. Control number of transactions between restart of request handlers.

Each Net.Commerce Server daemon request handler will restart after it hits the value in the MS_TRANS_COUNT parameter in mserver.conf. If you expect high transaction volumes you can raise this value to 5000. The default setting in mserver.conf is 1000.

6. Limit the use of Net.Commerce Director and Net.Commerce Server tracing.

Specifying the CMN_TRACE=1 option in the httpd.envvars file will produce a trace of the Net.Commerce Director. Specifying the -tr switch in the Net.Commerce started procedure will produce a trace of DB2 calls and spawn processes. For best performance, limit you use of these options. As part of this, if tracing is enabled and directed to an HFS file, ensure there is sufficient space in the HFS or you may experience a slow down if the server cannot write its records out.

__ 7. Use the Net.Commerce Caching utility to cache dynamically generated pages.

When a shopper clicks a link to view a product or category page, only small amounts of system time and resources are actually spent within the server; the rest of the time is spent parsing the HTTP request, accessing the database, and dynamically creating the HTML page the shopper wants to see. If your system receives heavy traffic and your database has a large number of products and category entries, this can significantly slow the shopping experience.

Most HTTP requests on the server will be for the product and category pages (those created by the ;display/item and ;display/category commands, respectively). Since the content of product and category pages usually do not change frequently, it is not necessary for them to be dynamically recreated each time they are accessed.

The Net.Commerce Caching utility speeds up the serving of HTML documents to the shopper by saving them in ASCII format in the NC_CACHE table in the database. By storing the product and category pages as plain HTML pages in the database and serving those pages without needing to dynamically recreate them, the Caching utility can significantly reduce the CPU time and increase the throughput on your server. It will also speed the download process for the shopper significantly.

The Net.Commerce Caching utility uses values of NC_DMN_CACHE in the configuration file of each Net.Commerce instance to control the caching of generated pages. This value controls caching for all stores in a mall. The possible values of NC_DMN_CACHE are:

- **0** Disables usage of the cache. Product and category pages will all be dynamically generated.
- **1** Enables read and write usage of the cache. Product and category pages will be read from the cache if they have been cached. Otherwise, they will be dynamically generated and then written to the cache.

- **2** Enables read usage only of the cache. Product and category pages will be read from the cache if they exist there. Otherwise, they will be dynamically generated. No HTML pages will be written to the cache.

For malls with a large number of products, the following is a strategy to control the size of the cache:

1. Modify the Net.Commerce configuration file to enable reading and writing the cache (NC_DMN_CACHE 1). The NC_DMN_CACHE value can be modified using the System Configuration step of the Configuration Program, CNMCONF, or it can be changed by editing the file directly.

   The file name of the Net.Commerce server configuration file is mserver.conf. The default directory containing the file is

   `/usr/lpp/NetCommerce/html/en_US/<home1>`

   where <home1> is the name of the instance.
2. Restart the Web server to implement the change. You do not have to restart the Net.Commerce server.
3. Using your browser, display the categories and products that customers are likely to be interested in, such as products that are new or on sale. This places those pages in the cache.
4. Modify the Net.Commerce configuration file to enable the cache for read only (NC_DMN_CACHE 2). The popular pages you have cached in step 2 are now read from cache, but no additional pages are cached.
5. Restart the Web server to implement the change. You do not have to restart the Net.Commerce server.
6. There is no automatic purging of the cache, but you can use the `ncclean` utility to purge cached html pages based on the number of days since last update. You can also purge guest shoppers, temporary shopper addresses, old orders, and products that have been marked for deletion. See the *Net.Commerce online help* for more information.

   Note: If there are multiple Net.Commerce servers using the same database, all share the same cache table. Pages can be written to cache or read from cache by any of the servers. There is no distinction between pages cached by one server versus those of another server. The NC_DMN_CACHE value in each server's configuration controls the usage of cache for that server.

7.1.2 Domino Go Webserver Performance Tips

Each time the Domino Go Webserver receives a request from a client, it activates a POSIX thread from a pool to perform the requested action. These requests could be to access HTML pages, graphic files (gif, jpeg), Java class libraries, and to execute programs or scripts.

If these programs are written to the Domino Go Web API (GWAPI) when executed, a thread is activated and they are run in the same address space as the Domino Go Webserver, if running as a stand-alone server. If running as a scalable server with WLM, GWAPI programs can run in a WLM queue manager or queue server address space.

If these programs or scripts are written to the Common Gateway Interface (CGI) when executed, the spawn (non-local) service is used to run those programs or scripts in an WLM initiator (separate address space).

File I/O to the Hierarchical File System and to traditional MVS data sets is used to serve Web pages to requesting client machines, unless those files have been loaded into the RAM cache using the `CacheLocalFile` directive.

The Web server uses UNIX System Services POSIX threads with the MEDIUM_WEIGHT and ASYNCHRONOUS attributes set. Medium weight threads reuse MVS tasks.

In POSIX, a *thread* is an entity that allows multiple simultaneous paths within a process. Threads allow multiple tasks to run in a single process/address space. Threads can share the same storage. A thread can be thought of as a TCB within a process. It allows for concurrent and asynchronous processing, without the additional overhead associated with creating a new address space. In other words, creating threads allows you to create independent units of work more cheaply than by address space creation.

The use of threads by the Domino Go Webserver can have significant performance benefits. For example, each thread of a process can run on an individual processor in a multiprocessor environment.

Even in a single processor environment, some performance gains can be achieved by the overlapping of I/O and processing. For example, a thread may be waiting for records from a database; while records are being retrieved from secondary storage, a second thread can continue other processing actions.

As with the Net.Commerce environment, a number of things can also be done to help "tune" your Web environment. The following list is divided into those things that will give you the greatest performance benefits, and those things that will give you some performance improvement.

Greatest Benefit

__ 1. Set `DNS-Lookup Off` in your `/etc/httpd.conf` file.

If set to `On`, the server will perform a host name lookup of every client IP address that accesses your server. If you have a requirement to resolve client hostnames (setting DNS-Lookup On) then code the following definition in your Web server's /etc/httpd.envvars file:

```
_EDC_IP_CACHE_ENTRIES=50
```

The environment variable _EDC_IP_CACHE_ENTRIES sets the size of the cache used for host names and IP addresses returned by gethostbyaddr() and gethostbyname() calls that are resolved by a domain name server. This cache is searched first before sending the next gethostbyaddr() or gethostbyname() request to a domain name server. The size of the cache is set only once. The first call to either gethostbyaddr() or gethostbyname uses the value of the _EDC_IP_CACHE_ENTRIES environment variable to set the size of the cache. Setting the size to 0 disables the cache. If you do not specify a value for this environment variable, the default size is 20.

__ 2. Limit the use of the verbose tracing flags (-v, -vc, -vv).

These flags write trace data for debugging purposes. Do not use them unless instructed to do so by IBM support personnel or if you are debugging your own Web server content on a test server.

__ 3. Make the Domino Go Webserver address space non-swappable.

Make the IMW.SIMWMOD1 data set an authorized library and add the following the SCHEDxx member of SYS1.PARMLIB:

```
PPT      PGMNAME(IMWHTTPD)
         NOSWAP
```

__ 4. Adjust Domino Go Webserver dispatching priority.

Set the dispatching priority for the Domino Go Webserver task as high as possible. Ideally, the dispatching priority for Domino Go Webserver should be just below the DB2 DBM1 address space if running Net.Commerce.

__ 5. Eliminate contention for heap storage.

The HEAPPOOLS run-time option is used to control an optional heap storage management algorithm known as heap pools. This algorithm is designed to improve performance of multi-threaded C/C++ applications (like the Web server) with high usage of malloc(), calloc(), realloc() and free(). When active, HEAPPOOLS virtually eliminates contention for heap storage. HEAPPOOLS was introduced by APARS PQ04514 and PQ04657. See *Language Environment for OS/390 & VM Programming Guide*, SC28-1939 for more information on the HEAPPOOLS run-time option.

__ 6. Turn LE tracing off.

Only add the following language environment run-time options to the IMWEBSRV procedure if you are debugging a problem since they have a negative effect on performance:

```
RPTSTG(ON),                  # report on storage usage
RPTOPTS(ON),                 # report LE runtime options in effect
STOrage(FF),                 # initialize heap storage
TRACE(ON,8M,DUMP,LE=1)       # runtime library tracing facility
```

__ 7. If using PS/PO (MVSDS) support to hold Web server content, put those data sets behind a cache controller and turn DASD FAST WRITE on.

__ 8. Use GWAPI programs instead of CGIs.

GWAPI programs have a performance advantage over regular CGIs in that they are designed to specifically run in a thread in the same address space as the Web server, if running a stand-alone server. CGI programs run in a separate address space. Link your GWAPI programs into LPA for additional performance benefits. Currently GWAPI programs need to be written in C or C++.

__ 9. If writing CGIs, write using a compiled language.

CGI programs written in a compiled language like C or C++ are more efficient than interpreted languages like REXX or shell scripts. Shell scripts require a fork() to run the shell and often additional fork()s for shell commands.

__ 10. Move static Web server pages to the server's memory cache.

Use the `CacheLocalFile` directive to load your most popular static files into the servers memory at startup time. You can specify the maximum amount of memory and the maximum number of files for caching with the `CacheLocalMaxBytes` and `CacheLocalMaxFiles` directives respectively.

__ 11. Eliminate extraneous directives in your configuration file.

Understand the directives you have coded in your configuration file. Eliminate any directives you know are defaults and eliminate those directives that you are not using.

__ 12. Arrange your PASS and EXEC configuration directives.

Arrange these statements so that the most frequently accessed pages are listed first. The Domino Go Webserver logging feature can give you page access information.

__ 13. Pre-start WLM queue server address spaces.

If you are running a scalable server in WLM COMPAT mode, make sure you pre-start your queue server address spaces. Otherwise, Web server requests will queue up. It may also be advantageous to pre-start your queue server address spaces if running in WLM GOAL mode.

The Domino Go Webserver can take several seconds or even minutes to initialize, depending on what is in the configuration file and how many static files are locally cached in memory. This overhead is seen as latency on the first request if queue server address spaces are being started by WLM in response to a load.

If queue server address spaces are pre-started, the initialization is completed (or at least in progress) before the first request is scheduled. See 8.2.1.2, "Considerations When Using Domino Go Webserver Enabled for WLM" on page 165 for more information.

__ 14. Limit the use of Server-side includes (SSI).

Server-side includes (SSI) allow you to insert information into CGI programs and HTML documents that the server sends to the client. When server-side include processing is enabled, your server has to parse each byte of every HTML file and CGI program searching for the existence of an SSI directive and, if found, it has to process it. This is a great feature for processing dynamic content, but it requires a large amount of CPU processing for any Web server.

SSI processing can be controlled by the use of the `imbeds` directive. If not using SSIs, set `imbeds off` in your `/etc/httpd.conf` file.

__ 15. Keep your URL links current and up-to-date.

URL suffix processing (multi support) is overhead for any Web server. This occurs when your URL does not exactly match the templates on the PASS directive. For example, if your URL is /oh_boy.html and your file name is actually /oh_boy.html.ascii, the Domino Go Webserver will do suffix processing and eventually return the file oh_boy.html.ascii. The Web server appends all known suffixes to the file name looking for a match. Eventually, the correct file will be returned, if it exists, but the process uses much CPU time.

__ 16. Investigate persistent connections for any Web server-enabled applications you are writing.

A persistent connection allows the server to accept multiple requests and to send responses over the same TCP/IP connection. Overall throughput is increased because the server does not have to establish a separate TCP/IP connection for each request and response. Also, the TCP/IP connection is used more efficiently because a client can make multiple requests without waiting for the response to each request.

Most browsers automatically enable persistent sessions. The Web server must also enable them, or they will not be active. Use the `PersistTimeout` and the `MaxPersistRequest` directives to specify the characteristics of a persistent connection. For more information on persistent connections see, *Enterprise Web Serving with the Internet Connection Secure Server for OS/390*, SG24-2074.

__ 17. Clean-up your log files periodically.

Check and clean-up your Domino Go Webserver log files on a regular basis. If there is insufficient space available in your logging HFS data set you will experience a slow down if the server cannot write its log records out.

Some Benefit

__ 1. Increase the value of the MAXFILEPROC statement in BPXPRMxx only if constrained.

This statement specifies the maximum number of files that a single user is allowed to have concurrently active or open. The IBM-supplied default is 64. This should be increased to at least 10000.

__ 2. Increase the value of the MAXSOCKETS statement in BPXPRMxx.

The IBM-supplied default of 64 is too low. The value invariably must be increased. To estimate a reasonable value for your system multiply the number of web file (not web page) connections per second by 120 and add 500. Note that a web file is a gif, a jpeg, or a html file. Web pages are composed of multiple files.

__ 3. Store your Web content in ASCII.

If you are using a workstation Web content building tool like NetObjects Fusion to build your text Web content, you can copy those ASCII files into the HFS on OS/390 (with NFS) and leave them as a set of ASCII files. This saves on any ASCII-to-EBCDIC translation overhead.

If you already have files stored in EBCDIC in the HFS, you can use the UNIX System Services `iconv` command to convert them to ASCII if you wish.

Note: Convert any Domino Go Webserver and Net.Commerce supplied HTML files as well.

__ 4. Mount your Web content directories close to the root.

To cut down on directory lookups, locate your Web content in directories that are mounted as close to the root as possible.

The latest performance tuning information for Domino Go Webserver can be found at:

`http://www.ics.raleigh.ibm.com/pub/icstune.htm`

`http://www.ics.raleigh.ibm.com/capacity`

7.1.3 UNIX System Services Performance Tips

Net.Commerce runs as a UNIX System Services application, which means it uses function and resources provided as part of the UNIX System Services environment such as hierarchical filesystem support and C runtime support, and along with TCP/IP, provides AF_INET socket support as well.

The latest performance tuning information for UNIX System Services can be found on the WWW at:

`http://www.s390.ibm.com/oe/bpxa1tun.html`

Here are a few additional tips:

__ 1. Install the latest maintenance levels for Domino Go Webserver, TCP/IP, LE and UNIX System Services.

Where possible, performance improvements will be shipped out in APAR fixes.

__ 2. Put RACF data set and all HFS data sets behind a DASD cache controller and set DASD FAST WRITE on.

__ 3. Caching HFS data sets.

Put HFS data sets behind a DASD cache controller if possible and turn on the DFSMS/MVS DASD read and fast write caching. Spreading your HFS data sets across multiple DASD volumes will also reduce contention and increase performance.

__ 4. Use UNIX System Services memory cache for R/O files.

Files that are read-only can be cached in virtual storage. These files can include data, message catalogs, scripts, and executable programs. Identify files that may be accessed frequently, and then use the `/usr/sbin/filecache` utility in your `/etc/rc` script to cache these files in virtual storage. This virtual storage is in a data space associated with the kernel address space.

__ 5. HFS files should be owned by valid UIDs and GIDs.

Make sure all the files in the HFS are owned by a valid RACF user ID on your system. Users are identified by an UNIX System Services user ID (UID) kept in the RACF user profile, and an UNIX System Services group ID (GID) kept in the RACF group profile. If files are restored from another system, the ownership (UID, GID) of those files is usually preserved.

If the UID, GID number does not correspond to a valid RACF user ID on the target system, it can create problems that impact file search response times. Whenever you list these files in UNIX System Services (`ls -l`), RACF will search its entire database looking to match the UID, GID with a valid user ID and group name. This can become a performance problem.

Code has been added in UNIX System Services to cache these invalid UIDs and GIDs, but it is always better to make sure all your files are owned by valid RACF user IDs (UIDs) and are connected to valid RACF groups (GIDs). The UNIX System Services change file ownership (chown) and change file group (chgrp) commands can be used to correct this.

Putting the RACF data set behind a DASD cache controller and turning on the DFSMS/MVS DASD read and fast write caching will also help speed up UID and GID checking.

__ 6. Turn off recording of SMF type 92 records.

SMF type 92 records are generated each time an HFS file is opened or closed. If you have a lot of activity to the HFS, you could be generating many type 92 records, thus causing some CPU overhead. Unless you need to track this activity, we suggest that you turn off recording of type 92 SMF records.

7.1.4 TCP/IP Performance Tips

TCP/IP provides the transport for all HTTP requests. The following list contains performance tips for TCP/IP. More specific MVS TCP/IP performance tuning information can be found in *TCP/IP Performance Tuning Guide*, SC31-7188.

__ 1. Adjust TCP/IP dispatching priority.

Set the dispatching priority for the TCP/IP task as high as possible. Ideally, the dispatching priority for VTAM, TCP/IP and VMCF should be the same, but slightly higher than that of TCP/IP applications like FTP. The use of a higher dispatching priority for TCP/IP has, in many cases, actually improved throughput and reduced CPU utilization. Remember that TCP/IP and VMCF provides services for TCP/IP address spaces: consequently, its performance (or lack thereof) impacts the performance of the TCP/IP applications.

__ 2. Tune your TCP/IP packet size values.

When a connection is established between two TCP/IP hosts, the server and client exchange information that specifies the maximum packet size each can receive. If either the client or server has a small packet size value defined, in most cases your connection will default to the smaller of the two. Since small packet sizes generally result in poorer performance, it is important to ensure that the largest packet size possible, based on the network, be specified on both the client and server.

__ 3. Increase the pending queue for listening sockets.

The SOMAXCONN statement in the TCPIP.PROFILE data set is used to specify a maximum length for the connection request queue created by the socket call listen(). The default is 10. Set this to 1000 to increase the pending queue.

__ 4. Investigate maximum transmission unit (MTU) sizes.

If using the BSDROUTINGPARMS statement in the TCPIP.PROFILE data set, ensure that the MTU size is the largest that can be accommodated for each link.

7.1.4.1 TCP/IP 3.2 Performance Tips

Specific performance tips for TCP/IP 3.2.

__ 1. Increase buffer pool sizes, if constrained.

For TCP/IP 3.2, buffer pools ACBPOOLSIZE and TCBPOOLSIZE may need to be increased in TCPIP.PROFILE. We are running with 25000. Buffer pools, DATABUFFERPOOLSIZE and LARGEENVELOPEPOOLSIZE may also need to be increased.

This is indicated by messages EZB6401I, EZB6402W, and EZB6402E. Check all the TCP/IP pool values by issuing the `NETSTAT POOL` TSO command.

7.1.4.2 eNetwork Communications Server for OS/390 V2R5 (aka TCP/IP 3.4)

Specific performance tips for CS/390 V2R5.

___ 1. Communication Storage Manager (CSM) tuning

CSM is a component of VTAM that allows authorized host applications to share data with VTAM and other CSM users without having to physically copy the data. CS/390 V2R5 is a heavy user of CSM services. CSM is provided as part of the HPDT (high performance data transfer) family of services. HPDT optimizes system performance for the transfer of bulk data. By providing a means for authorized applications to share buffers, CSM improves system performance during the transfer of bulk data by reducing the processing required for data movement. As a result, CPU resources (CPU cycles, memory bus, and cache) are conserved. CSM tuning values are defined in the IVTPRM00 member of SYS1.PARMLIB. Typical IVTPRM00 values are shown below:

```
FIXED MAX(120M)
ECSA MAX(120M)
POOL (4K,ECSA,200,20,100)
POOL (4K,DSPACE,200,20,100)
POOL (16K,DSPACE,50,10,50)
POOL (32K,ECSA,20,10,20)
POOL (60K,DSPACE,1,1,6)
POOL (180K,DSPACE,1,1,2)
```

See *OS/390 eNetwork Communications Server: CSM Guide*, SC31-8575 for more information.

2. Adjust ECSA and ESQA values

CS/390 V2R5 requires increases in ECSA and ESQA values. ECSA and ESQA values are defined in the IEASYSxx member of SYS1.PARMLIB. See *OS/390 eNetwork Communications Server:CSM Guide*, SC31-8575 for more information.

___ 3. Increase Send/Receive buffer sizes

Set the following in the TCPIP.PROFILE data set to override the default Send/Receive buffer size setting of 16KB for better performance.

```
TCPCONFIG
  TCPSENDBFRSIZE    65535
  TCPRCVBUFRSIZE    65535
UDPCONFIG
  UDPSENDBFRSIZE    65535
  UDPRCVBUFRSIZE    65535
  NOUDPQUEUELIMIT
```

___ 4. Disable the SNMP subagent if not using SNMP services

The SNMP subagent is started by default. There is a small bit of overhead in running the subagent. If not using SNMP services then set

```
SACONFIG DISABLE
```

in the TCPIP.PROFILE data set.

7.1.5 DB2 Performance Considerations

DB2 provides the database that Net.Commerce uses to store things like paths to files in the HFS, merchandise data, and shopper user IDs and passwords, to name a few. The database is constantly being accessed during a typical shopping trip. For this reason it is very important that your DB2 subsystem be correctly tuned.

___ 1. Consider using hardware compression with DB2.

Compression is the attempt to remove redundancy from data without losing any information. Rather than packaging data tighter, compression attempts to analyze its contents and, by using a more efficient coding scheme, reduces the storage requirements for the data. Compression is selected using the COMPRESS parameter on the CREATE or ALTER TABLESPACE statements in DB2. Once selected, an existing table is compressed during subsequent LOAD or REORG operations, when a dictionary customized to the data is created and then used to compress the table. Compression decreases DASD cost but increases CPU consumption.

___ 2. Use the Prepared Statement Cache.

DB2 can save prepared dynamic statements in a cache. The cache is a DB2-wide cache in the EDM pool that all application processes can use to store and retrieve prepared dynamic statements. After an SQL statement has been prepared and is automatically stored in the cache, subsequent prepare requests for that same SQL statement can avoid the costly preparation process by using the statement in the cache. Cached statements can be shared among different threads, plans, or packages. This performance improvement offers the most benefit for:

- Client/server applications that frequently use dynamic SQL for repeated execution of SQL statements.
- Relatively short dynamic SQL statements for which PREPARE cost accounts for most of the CPU expended.

For more information, see *DB2 Installation Guide*, GC26-8970.

___ 3. Use DB2 block fetch as much as possible.

DB2 has an important capability called *block fetch* that can significantly affect the number of messages sent across the network. Used with cursors that will not update data, DB2 groups the rows retrieved by an SQL query into as large a "block" of rows as will fit in a message buffer, and transmits it over the network without requiring a message for every row.

In general, DB2 can use block fetch for a query if:

- The declare cursor statement includes a SELECT that is specified to be FOR FETCH ONLY:

```
EXEC SQL
  DECLARE THISEMP CURSOR FOR
    SELECT EMPNO, LASTNAME, WORKDEPT, JOB
    FROM DSN8510.EMP
    WHERE WORKDEPT = 'D11'
    FOR FETCH ONLY
END-EXEC.
```

- The result table of the cursor is read-only. This applies to static and dynamic cursors, except for read-only views.
- FOR FETCH ONLY was not specified and the result table of the cursor is not read-only, and no static DELETE WHERE CURRENT OF or UPDATE WHERE CURRENT OF is in the query, and there are no dynamic statements in the program.

You can also use block fetch with cursors that are ambiguous. A cursor is ambiguous if DB2 cannot definitely determine whether or not it is read-only. An ambiguous cursor is found only in applications containing dynamic SQL statements. When you specify CURRENTDATA(NO) on either the BIND PACKAGE or BIND PLAN commands, block fetching is allowed for ambiguous cursors. For more information, see *DB2 for OS/390 Administration Guide*, SC26-8957.

___ 4. Bind with ISOLATION(CS) and CURRENTDATA(NO)

Typically, ISOLATION(CS) lets DB2 release acquired locks as soon as possible. CURRENTDATA(NO) lets DB2 avoid acquiring locks as often as possible. After that, in order of decreasing preference for concurrency, use these bind options:

a. ISOLATION(CS) with CURRENTDATA(YES), when data you have accessed must not be changed before your next FETCH operation.
b. ISOLATION(RS), when rows you have accessed must not be changed before your application commits or rolls back. However, you do not care if other application processes insert additional rows.
c. ISOLATION(RR), when rows you have accessed must not be changed before your application commits or rolls back. New rows cannot be inserted into the answer set.

___ 5. Specify all DB2 indices as type 2.

An *index* is an ordered set of pointers to the data in a DB2 table. The index is stored separately from the table. Each index is based on the values of data in one or more columns of a table. After you create an index, DB2 maintains the index, but you can check, repair, or reorganize it.

There are two different types of indexes, type 1 and type 2. With type 1 indexes, locks are acquired on index pages. With type 2 indexes, only data pages are locked. If you have concurrent users of the same table, locking problems are likely with multiple type 1 indexes. Type 2 indexes can sometimes give high concurrency and better performance by locking the underlying data page or record instead of locking the index page.

INSERT, UPDATE, or DELETE operations require a lock on every affected page or subpage of a type 1 index, but not on pages of a type 2 index. If there are no type 1 indexes on the data, only the affected data pages or rows are locked. Because there are usually fewer rows to a data page than there are index entries to an index page or subpage, locking only the data when you lock pages likely causes less contention than locking the index. Locking only data rows would likely cause even less contention. Use row level locking for the Net.Commerce KEYS table. If your configuration is a sysplex with DB2 Data Sharing, create the KEYS table with one row per page.

Use type 2 indexes whenever possible. Type 2 indexes provide increased concurrency and performance. They also provide the following functions, which are unavailable with type 1 indexes:

- Row locking on a table space
- UR isolation for an access path
- Processing of queries by multiple parallel tasks
- Concurrent access to separate logical partitions

___ 6. Run DB2 Runstats for static SQL.

The RUNSTATS utility collects statistics about DB2 objects. These statistics can be stored in the DB2 catalog, and are used during the bind process to choose the path in accessing data. If you never use RUNSTATS and subsequently rebind your packages or plans, DB2 will not have the information it needs to choose the most efficient access path. This can result in unnecessary I/O operations and excessive processor consumption.

Consider running RUNSTATS whenever 10% or more of the data in a table has been modified. This includes INSERTs, UPDATEs, DELETEs and LOADs. Do not blindly REBIND every package and plan after executing RUNSTATS. REBIND only if the data changes significantly and only if performance is suffering.

___ 7. Update DB2 to increase the number of connections that DB2 will allow.

This is done using the INSTALL DB2 - THREAD MANAGEMENT panel provided with the DB2 product. The panel name is DSNTIPE. Ensure that the values for the MAX USERS, MAX TSO CONNECT, and MAX BATCH CONNECT fields are at least double the number of Net.Commerce connections to DB2. The number of Net.Commerce connections is the sum of:

```
 The number of Web server threads (MaxActiveThreads value in the
 httpd.conf file.
AND
 The sum of the number of Net.Commerce processes specified during
 configuration of each Net.Commerce instance that is using this Web server.
 The number of Net.Commerce processes is stored as the value of
 MS_NUM_CHILD in the mserver.conf file for the Net.Commerce instance.
```

Chapter 8. Domino Go Webserver: Modes of Operation

In this chapter we provide information to help you decide how you want to run your Web server, with special attention given to a scalable server to run your Net.Commerce workload. There are three execution modes for the Domino Go Webserver:

- A standalone server
- Multiple server mode
- A scalable server

In any of these modes, your server can process HTTP requests, and you can also set it up in "secure" mode to process HTTPS requests. Deciding which execution mode to run depends upon your needs and your environment.

8.1.1 Standalone Server

The standalone server mode is the simplest mode of operation. Domino Go Webserver is in standalone mode when you have a single server address space running in the system. The default name for the server address space is IMWEBSRV. It has a console interface so that the commands can be issued at the operator console to communicate directly with the IMWEBSRV address space.

As a standalone server, Domino Go Webserver can meet the needs of customers who require a single server with the features Domino Go Webserver contains. It is best to get the Domino Go Webserver running and tested in standalone mode prior to running scalable or multiple servers. You can read on to determine if the other modes of operation may be beneficial to you so you can better plan to exploit them after you have tested a standalone Domino Go Webserver.

8.1.2 Multiple Servers

It is possible to run multiple Domino Go Webservers on one OS/390 system. There can be multiple standalone servers, multiple scalable servers, or a combination of both. You may want to run multiple copies if your installation has any of the following characteristics:

- You want to assign different server environments to different areas of the business and want to limit server administration abilities and access to data in this manner.
- You want to have a test and production server so that updates are not made to the production server until they are tested.

8.1.3 Scalable Server

Workload Management (WLM) provides the functions to define, implement, and monitor system performance against business goals. WLM also decides how many resources should be assigned to work according to policies that you define. For further information about WLM itself, see *OS/390 MVS Planning: Workload Management*, GC28-1761.

In the WLM environment, the tasks of the Domino Go Webserver are processed by two types of address spaces, a queue manager and queue servers. Figure 84 on page 162 shows the Domino Go Webserver running Net.Commerce work in scalable mode.

© Copyright IBM Corp. 1998

Network
Request
Queue Manager
Web Daemon
Queue Server
HTML
;order
GWAPI
;adrbk
;browse
;display
;register
3
3
2
1
Importance
WORKLOAD MANAGER SERVICES
OS/390

Figure 84. Domino Go Webserver Environment in Scalable Server Mode

The functions of the address spaces are:

- Queue Manager

  Queue manager is the front end process. It receives the request from the client, and if an application environment (`ApplEnv`) definition exists (in the `httpd.conf` file and the WLM policy), it will route the request to the appropriate queue server by putting the request onto the WLM queue. If no `ApplEnv` is defined, it will handle the request itself. In the case of a secured connection request by SSL, the queue manager does not pass the request, but processes the request itself. There is only one queue manager per Web server in any one OS/390 system.

- Queue Server

  Queue server is the process that actually executes the client's request (except for secured connection requests and requests that are not specifically defined to run in a queue server). It searches its associated queue and picks up the requests to process. There can be multiple queue servers for each queue, and multiple queues, for any Web server in one OS/390 system.

WLM manages these processes based on the policies that you define. See the "Domino Go Webserver, Workload Management Enablement" section of the *Domino Go Webserver, Webmaster's Guide*, SC31-8643 and 8.2.2, "Steps to

Setting Up a Scalable Server" on page 166 in this redbook for details about how to define the policies.

To meet the performance goals of the system, WLM controls the number of queue servers that execute requests on connected queues. If there are so many requests that the current queue servers cannot meet the performance goals, WLM will start additional queue servers. If the demand for servers is low, WLM will stop some idle queue servers to reduce the allocated system resources.

Note: SSL requests can be processed by a scalable server, but all processing will be done in the queue manager address space. If all your work is SSL work, you should bear this in mind. A next release of the Domino Go Webserver (Version 5) will support SSL requests in queue server address spaces.

You may want to run a scalable server if your installation has any of the following characteristics:

- You are running a 24x7 business operation and you want a mechanism to automatically control the performance of all your online workload, from your Web server to your backend fulfillment systems.
- You are running a high availability commercial Web server and you need to control workload at the transaction level. WLM gives you the ability to break out your Net.Commerce workload to where you can give your browse and search Web operations a higher performance goal than other Web operations like order and address book processes as examples. WLM will always meet the business goals that you set because it will take lower priority work out of the system to free up needed resources.

For details on setting up a scalable server, see 8.2, "Setting Up a Scalable Server."

8.2 Setting Up a Scalable Server

A scalable server in Domino Go Webserver is a Web server that is set up to use workload manager (WLM) to distribute work among a set of WLM address spaces. 8.1.3, "Scalable Server" on page 161 provides an overview of the scalable server support. You should read that now if you are not familiar with these new WLM services.

The following section describes scalable mode in more detail, and then describes the steps required to set it up.

Note: If you plan to use secure communications (use SSL), you should bear in mind that SSL requests can be processed by a scalable server, but all processing will be done in the queue manager address space. If all your work is SSL work, a scalable server may not give you the benefits you expect.

8.2.1 Workload Management and the Domino Go Webserver

By using the WLM queueing manager services support in OS/390, the Domino Go Webserver can separate work into application environments, establish specific performance objectives (goals) for them, and let WLM allocate the necessary resources for accomplishing these goals.

With a scalable server, incoming requests are received by a queue manager, placed on a queue, and processed by queue servers. The process is illustrated in some detail in Figure 85 on page 164.

Queue Manager
WLM
Queue Server
Shared Memory
socket id
http://...
timer
http: accept
https: accept
log manager
cache manager
Worker Thread
3
PUTWORK
6
GETWORK
Worker Thread
timer
log manager
4
Queue
1
accept
receive new
socket descriptor
count = 1
2
read
5
close
-count
7
write
8
close
-count
LFS
socket descriptor (count)
3
+count
close
socket
(count 8 0)
PFS
HFS
pipe
.....
TCP/IP
UNIX System Services Kernel

Figure 85. Processing Client Requests in a Scalable Server

When the client connects to the Domino Go Webserver server, the request is processed as follows (numbers refer to Figure 85):

1 The client connects to the queue manager and sends a request. The accepting thread receives a new socket descriptor for each connection. The socket descriptor is managed by the Logical File System (LFS) of the UNIX System Services kernel. Each socket descriptor has a count value which shows the number of current users for this socket. When the socket descriptor is received by the accepting thread, this count is set to one. The connection is passed to a worker thread for processing, or internally queued if all worker threads are busy.

2 The worker thread starts reading the HTTP request package from the socket. The resource requested is matched against `ApplEnv` directives in the configuration file for the server. If none of the directives match, the request is processed by this worker thread.

3 If the worker thread determines this request should be processed by a queue server, it classifies the work and issues a PUTWORK request to the UNIX System Services kernel to put this request on the WLM queue of an appropriate queue server. The worker thread also passes information such as socket ID, converted (EBCDIC) request line, and any unprocessed I/O buffer. The UNIX System Services kernel increments the usage count on the socket and queues a control block referencing the socket and the application buffer on the requested application environment queue.

4 When WLM receives the PUTWORK, it stores the request on the queue.

5 Once the worker thread puts the request on the queue, it issues a close socket request to the LFS. This close request decreases the usage count of the socket descriptor by one.

6 The worker threads on the queue server issue GETWORK to WLM to get a request from the queue. The UNIX System Services kernel assigns an available file descriptor to the passed socket and makes the application buffer addressable.

7 The worker thread on the queue server processes the client's request and sends a response to the client.

8 When the request processing is completed, the worker thread closes the socket, reducing the usage count to zero. When the LFS detects the usage count of the socket descriptor is zero, it issues an actual close request to the TCP/IP stack. If the original request was part of a persistent connection, this thread returns to step **2**, but it will not be re-classified.

Note: There is currently a bug with WLM and the Domino Go Webserver. A return to step 2 to re-classify the next URL will occur only if persistent sessions are turned off (MaxPersistRequest is 1). The Web server will not re-classify subsequent requests in the same persistent connection. All URLs within the persistent session inherit the classification from the first one. RMF data will also be affected if running with persistent sessions. All requests will get put into the same enclave and make the RMF reports very cryptic.

8.2.1.1 Value of the Domino Go Webserver Enabled for WLM

The scalable support divides the work of the Web server among multiple address spaces, the queue manager and possibly multiple queue servers. This brings a number of advantages over a single address space design, including:

- Scalability - a single address space is limited in the number of tasks that it can run and the amount of virtual storage available to it. Allowing work to be spread over multiple address spaces allows significantly more work to be accepted and processed.
- Availability - you can set up your server to separate different types of work into different queue server address spaces. In particular, you can separate GWAPI programs from simple GET request processing from proxy processing, as well as separating test programs from production programs. Failures in GWAPI programs will not then result in an outage of your Web server, since the queue manager remains available while a queue server can be restarted. In addition, WLM also restarts queue servers automatically, assuming the number of queue server failures has not reached an internal limit.

8.2.1.2 Considerations When Using Domino Go Webserver Enabled for WLM

WLM has two modes: compatibility mode and goal mode. Compatibility mode allows you to make WLM definitions, but to run the system using performance definitions in the traditional IPS, ICS, and OPT members of SYS1.PARMLIB. In goal mode, you use WLM goal definitions rather than the traditional definitions.

You can run Domino Go Webserver in scalable mode regardless of the WLM mode you are using. However, if your system runs in compatibility mode, queue servers cannot be started automatically by WLM, so you must start and control queue servers manually. On the other hand, if the system is in goal mode, queue servers can be started manually by command or automatically by WLM. WLM also controls the number of queue servers as needed, and will start new queue servers to meet performance goals, or shut down excess queue servers to minimize use of system resources.

You should note, however, that any client request that *causes* a queue server to be started (including the first request after the queue manager is started) will have to wait until the queue server needed to process the request finishes initialization. This might cause the user request to be delayed for a few seconds. If you want to minimize such delays, you may want to consider manually starting a number of queue servers, sufficient to process a normal workload after you start your queue manager. You will have to determine the number of queue servers you regularly need from experience. In general terms however, you should allow WLM to manage your system, rather than trying to do manual management.

8.2.2 Steps to Setting Up a Scalable Server

To simplify your understanding of the setup steps, we have provided a "big picture" of the processing of a request by a scalable server in Figure 86 on page 167. The setup steps are divided into three main groups, illustrated in Figure 86 with dotted line boxes. They are:

1. 8.2.2.1, "Setting Up Domino Go Webserver Address Spaces and Subsystem Name" on page 167.
2. 8.2.2.2, "WLM Setup Definitions" on page 168.
3. Configuration file `ApplEnv` directive definitions (see 8.2.2.3, "Configuration File Setup" on page 180).

Domino Go Web and the WLM Queueing Manager Model
QM/QS subsystem environment setup
Requests >>>>
DGW
-SN IMWE
(subsystem established as a queueing manager at initialization)
ApplEnv based work distribution
ApplEnv directive NCBRDIS
ApplEnv directive NCORDER
ApplEnv directive NCREG
Configuration file ApplEnv setup
DGW Address Space (Queueing Manager)
WLM environment definitions
NCREG
NCORDER
NCBRDIS Application Environment WLM policies
AE NCBRDIS queue
AE NCORDER queue
AE NCREG queue
WLM Address Space
WLM policies-based resource allocation to ApplEnv work queues
-SN IMWE AE NCBRDIS Queue Server Address Space(s)
-SN IMWE AE NCORDER Queue Server Address Space(s)
-SN IMWE -AE NCREG Queue Server Address Space(s)

Figure 86. Domino Go Webserver and WLM Queueing Manager Model

8.2.2.1 Setting Up Domino Go Webserver Address Spaces and Subsystem Name

This phase of the setup tasks is illustrated in Figure 86 by the dotted line box with a label "QM/QS subsystem environment setup." It involves creation of the Domino Go Webserver started procedures, and definition of a subsystem name, as described in the following steps:

Step 1. Define the scalable server subsystem name in `IEFSSNxx` in SYS1.PARMLIB; in our case, it is `IMWE`. An example of this definition is:

```
SUBSYS SUBNAME(IMWE)        /* DGW 4.6.1   */
```

With OS/390 the subsystem can be added dynamically using the operator command:

```
SETSSI ADD,S=IMWE
```

where `IMWE` is the subsystem name. At the first IPL following the SYS1.PARMLIB update, the subsystem name will be permanently available to the system.

Step 2. Define the queue manager started procedure.

The `-SN IMWE` parameter establishes the subsystem named `IMWE` for this run of the Domino Go Webserver. Add the started procedure to the started task table as shown in Figure 87 on page 168.

```
//IMWEBSRV PROC  LEPARM='ENVAR("_CEE_ENVFILE=/etc/httpd.envvars")',
//    ICSPARM='-SN IMWE -vv -B -p 80 -r /etc/httpd.conf'
//*****************************************************
//WEBSRV   EXEC PGM=IMWHTTPD,REGION=0K,TIME=NOLIMIT,
//   PARM=('&LEPARM/&ICSPARM')
//STEPLIB  DD DSN=IMW.SIMWMOD1,DISP=SHR
//*****************************************************
//SYSIN    DD DUMMY
//OUTDSC   OUTPUT DEST=HOLD
//SYSPRINT DD SYSOUT=*,OUTPUT=(*.OUTDSC)
//SYSERR   DD SYSOUT=*,OUTPUT=(*.OUTDSC)
//STDOUT   DD SYSOUT=*,OUTPUT=(*.OUTDSC)
//STDERR   DD SYSOUT=*,OUTPUT=(*.OUTDSC)
//SYSOUT   DD SYSOUT=*,OUTPUT=(*.OUTDSC)
//CEEDUMP  DD SYSOUT=*,OUTPUT=(*.OUTDSC)
```

Figure 87. Started Procedure JCL for Domino Go Webserver Queue Manager

Step 3. Define the queue server started procedure.

The `IMWIWM` member of IMW.SIMWSAM1 can be used as a template to create a started procedure for queue server address spaces. These address spaces handle the requests for various application environments as defined in WLM and the `ApplEnv` directives in the server configuration file. If you changed the name of the queue manager procedure from `IMWEBSRV`, you need to update the `IMWIWM` procedure to reflect this. You also need to define this queue server (`IMWIWM`) procedure to the started task table or RACF Started Class, as you did for the queue manager procedure (`IMWEBSRV`).

The `&IWMSN` and `&IWMAE` symbolic parameters will be passed in the start command to create the queue server address space and connect it to the subsystem specified in `&IWMSN` and to the application environment specified in `&IWMAE` as shown in Figure 88.

```
//IMWIWM  PROC IWMSN=,IWMAE=
//*****************************************************
//*
//* IWMSN ==> WLM subsystem name webserver parm
//* IWMAE ==> Application Environment webserver parm
//*
//*****************************************************
//  SET SN='-SN '
//  SET AE=' -AE '
//  SET QQ=''''
//WEBSRV   EXEC PROC=IMWEBSRV,REGION=0K,TIME=NOLIMIT,
//   ICSPARM=&QQ.&SN.&IWMSN.&AE.&IWMAE.&QQ
```

Figure 88. Started Procedure JCL for Domino Go Webserver Queue Server

8.2.2.2 WLM Setup Definitions

This phase of the setup tasks is illustrated in Figure 86 on page 167 by the dotted line box labelled "WLM environment definitions." It involves setting up WLM for the Domino Go Webserver, as described in the following steps:

Note: You will not need to execute all the following steps if you are already running WLM on your system. This process outlines a simple configuration. You may want to update some of the definitions based on your unique workload.

Step 1. Allocate and format a couple data set for WLM, if you do not already have one or you have one in pre-OS/390 Version 2 Release 4 format.

See *OS/390 MVS Planning: Workload Management*, GC28-1761 for further information on setting up a WLM couple data set. Appendix A of the *Domino Go Webserver, Planning for Installation*, SC31-8642 also has sample JCL to help you allocate a WLM couple data set.

To use the workload management functions in OS/390 R4 releases, you should convert the WLM couple data set to the OS/390 R4 format by re-allocating it. The OS/390 R4 version of the WLM administrative application only works with an OS/390 R4 WLM couple data set, even if you are not yet using new OS/390 R4 functions. Your new couple data set should be formatted to handle application environment information. Make sure that all items are defined for DATA TYPE(WLM).

For example, we are running with a OS/390 R3 version of the WLM couple data set. We allocated a new OS/390 R4 version of the WLM couple data set and used the following set of commands to activate it dynamically. First you make the new WLM couple data an alternate.

```
SETXCF COUPLE,TYPE=WLM,ACOUPLE=(SYS1.PLEX58.WLM04,TARPLX)
```

```
IXC309I SETXCF COUPLE,ACOUPLE REQUEST FOR WLM WAS ACCEPTED
IXC260I ALTERNATE COUPLE DATA SET REQUEST FROM SYSTEM 221
SC58 FOR WLM IS NOW BEING PROCESSED.
DATA SET:  SYS1.PLEX58.WLM04
IEF196I IEF237I 202B ALLOCATED TO SYS00044
IXC251I NEW ALTERNATE DATA SET 223
SYS1.PLEX58.WLM04
FOR WLM HAS BEEN MADE AVAILABLE
```

Then you switch the alternate and make it the primary couple data set.

```
SETXCF COUPLE,TYPE=WLM,PSWITCH
```

```
IXC309I SETXCF COUPLE,PSWITCH REQUEST FOR WLM WAS ACCEPTED
IXC257I PRIMARY COUPLE DATA SET 229
SYS1.PLEX58.WLM03 FOR WLM
IS BEING REPLACED BY
SYS1.PLEX58.WLM04 DUE TO OPERATOR REQUEST
IEF196I IEF285I   SYS1.PLEX58.WLM03
IEF196I IEF285I   VOL SER NOS= TARPLX.
IXC263I REMOVAL OF THE PRIMARY COUPLE DATA SET 232
SYS1.PLEX58.WLM03 FOR WLM IS COMPLETE
```

Step 2. Load the sample WLM policy shipped with Domino Go Webserver.

WLM ships a set of ISPF administration dialogs that can be used to define WLM policies to control your Web workload. The "Domino Go Webserver Workload Management Enablement" section of the *Domino Go Webserver, Webmaster's Guide*, SC31-8643 has a step-by-step procedure on how to load a sample workload management policy for a scalable server which includes a sample policy shipped with the Domino Go Webserver in the IMW.SIMWTBL1 data set.

Before starting, you may want to setup a RACF profile called MVSADMIN.WLM.POLICY to restrict access to the WLM administration functions. To define this profile and permit a user ID to define the WLM policies:

```
REDEFINE FACILITY MVSADMIN.WLM.POLICY UACC(NONE)
PERMIT MVSADMIN.WLM.POLICY CLASS(FACILITY) ID(some ID) ACCESS(UPDATE)
SETROPTS RACLIST(FACILITY) REFRESH
```

where "some ID" is the user ID that you will be using to define the WLM policies using the WLM ISPF dialogs.

Note:

Pay special attention to the final steps of WLM activation for the Domino Go Webserver detailed in the *Domino Go Webserver, Webmaster's Guide* (section "Domino Go Webserver Workload Management Enablement"). A problem that is commonly experienced is *not actually installing* the definition and *activating* the service policy once the policy has been updated using the WLM panels.

Step 3. Create a workload for Net.Commerce.

After loading the sample WLM policy that was shipped with the Domino Go Webserver, you can now add or modify workloads, service classes, classification rules, and application environments to manage Net.Commerce workload.

Start the WLM ISPF administrator dialogs:

`ex 'SYS1.SBLSCLIO(IWMARINO)'`

Select option **2** to read the definitions from the WLM couple data set that you built earlier.

```
  File  Help
 ------------------------------------------------------------------

 Command ===> ____________________________________________________


             EssssssssssssssssssssssssssssssssssssssssssssN
             e         Choose Service Definition          e
             e                                            e
             e Select one of the following options.       e
             e 2   1.  Read saved definition              e
             e     2.  Extract definition from WLM        e
             e         couple data set                    e
             e     3.  Create new definition              e
             e                                            e
             e                                            e
             e                                            e
             DssssssssssssssssssssssssssssssssssssssssssssM
                         ENTER to continue
```

This example starts by adding a new workload, so select option **2**.

```
  File  Utilities  Notes  Options  Help
 ----------------------------------------------------------------------
 Functionality LEVEL003        Definition Menu        WLM Appl LEVEL004
 Command ===> _________________________________________________________

 Definition data set  . . : none

 Definition name  . . . . . WEB_GOAL  (Required)
 Description  . . . . . . . Web Service Definition

 Select one of the
 following options . . . .  2   1.  Policies
                                2.  Workloads
                                3.  Resource Groups
                                4.  Service Classes
                                5.  Classification Groups
                                6.  Classification Rules
                                7.  Report Classes
                                8.  Service Coefficients/Options
                                9.  Application Environments
                               10.  Scheduling Environments
```

Select action code **1** to create a new workload.

```
  Workload  View  Notes  Options  Help
 ----------------------------------------------------------------------
                        Workload Selection List              Row 1 to 7
 Command ===> _________________________________________________________

 Action Codes: 1=Create, 2=Copy, 3=Modify, 4=Browse, 5=Print, 6=Delete,
               /=Menu Bar
                                                     ----Last Change-----
 Action  Name      Description                        User       Date
  1      IOWKLD2   i/o with enclave                   TSOUSER    1995/11/21
  __     IOWORKLD  i/o priority testcase workload     IBMUSER    1995/09/06
  __     TSO       Workload for TSO USERID MCGRATH    MCGRATH    1993/06/28
  __     VICOM     VICOM workload                     IBMUSR2    1993/04/29
```

Fill in the new workload name and description. We called our new workload NETCOMM. Press EXIT to save your changes.

```
  Workload  Notes  Options  Help
 --------------------------------------------------------------
                        Create a Workload
 Command ===> _________________________________________________

 Enter or change the following information:

 Workload Name  . . . . . . . . NETCOMM (Required)
 Description  . . . . . . . . . Net.Commerce workload
```

Step 4. Define service classes for Net.Commerce workload.

From the main WLM administrator panel, select option **4** to define new service classes for Net.Commerce.

```
  File  Utilities  Notes  Options  Help
 ----------------------------------------------------------------------
 Functionality LEVEL003        Definition Menu        WLM Appl LEVEL004
 Command ===> _________________________________________________________

 Definition data set  . . : none

 Definition name  . . . . . WEB_GOAL  (Required)
 Description  . . . . . . . Web Service Definition

 Select one of the
 following options. . . . .  4   1.  Policies
                                 2.  Workloads
                                 3.  Resource Groups
                                 4.  Service Classes
                                 5.  Classification Groups
                                 6.  Classification Rules
                                 7.  Report Classes
                                 8.  Service Coefficients/Options
                                 9.  Application Environments
                                10.  Scheduling Environments
```

Select action code **1** to create a new service class.

```
  Service-Class  View  Notes  Options  Help
 ----------------------------------------------------------------------
                        Service Class Selection List
 Command ===> _________________________________________________________

 Action Codes: 1=Create, 2=Copy, 3=Modify, 4=Browse, 5=Print, 6=Delete,
               /=Menu Bar


Action   Class     Description                     Workload
  1      FAST      fast class                        WRKLOAD1
  __     CICSJSER  CICS transactions                 VICOM
  __     CICSJSR2  CICS transactions                 VICOM
  __     DIANCICS  CICS transactions                 VICOM
  __     DISCPER3  Three Period Batch w/Disc per3    VICOM
  __     DISCRETN  Discretionary batch class         VICOM
```

In our example, we decided to build four service classes:

a. SCBRDIS - for ;browse and ;display commands
b. SCMISC - for other miscellaneous Net.Commerce commands
c. SCREG - for the ;register command
d. SCORDER - for the ;order command

Update the panel using the following values for the SCBRDIS service class. Choose I under Action to add base goal information.

```
  Service-Class  Xref  Notes  Options  Help
 ----------------------------------------------------------------------
                          Create a Service Class             Row 1 to
 Command ===> _________________________________________________________

 Service Class Name . . . . . : SCBRDIS  (required)
 Description  . . . . . . . . . Net.Commerce ;browse & ;display
 Workload Name  . . . . . . . . NETCOMM   (name or ?)
 Base Resource Group  . . . . . ________ (name or ?)

 Specify BASE GOAL information.  Action Codes: I=Insert new period,
 E=Edit period, D=Delete period.

         ---Period---  --------------------Goal--------------------
 Action  #  Duration   Imp.  Description
   I
```

Select **2** to define a response time with percentile.

```
  Service-Class  Notes  Options  Help
- EssssssssssssssssssssssssssssssssssssssN -----------------------
  e Choose a goal type for period 1         e ss               Row 1
C e                                         e _______________________
  e                                         e
S e  2  1.  Average response time           e ired)
D e     2.  Response time with percentile   e
W e     3.  Execution velocity              e  or ?)
B e     4.  Discretionary                   e  or ?)
  e                                         e
S e                                         e I=Insert new period,
E e                                         e
  DssssssssssssssssssssssssssssssssssssssM
        ---Period---  --------------------Goal--------------------
Action  #  Duration   Imp.  Description
  i
```

Continue filling in the response time goal values here. For the SCBRDIS service class we will have a goal that will give this workload 10 second response, 95% of the time in period 1.

```
 Service-Class  Notes  Options  Help
 EssssssssssssssssssssssssssssssssssssssN -----------------------
 e Choose a goal type for period 1         e ss               Row 1
 e                                         e _______________________
 e                                         e
 e 2   1.  Average response time           e ired)
 EssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssN
 e                Response time with percentile goal               e
 e                                                                 e
 e Enter a percentile and response time goal for period 1          e
 e                                                                 e
 e Percentile  . . 95 (1-99)                                       e
 e                                                                 e
 e Hours . . . . . __  (0-24)                                      e
 e Minutes . . . . __  (0-99)                                      e
 e Seconds . . . . 10 (0-9999)                                     e
 e                                                                 e
 e Importance  . . 1  (1=highest, 5=lowest)                        e
 e Duration  . . . ________  (1-999,999,999, or                    e
 e                           none for last period)                 e
 e                                                                 e
 e                                                                 e
 e                                                                 e
 DssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssM
```

Choose I to add additional base goal information.

```
  Service-Class  Notes  Options  Help
 -----------------------------------------------------------------
                         Create a Service Class               Row
 Command ===> ____________________________________________________

 Service Class Name . . . . . : SCBRDIS  (required)
 Description  . . . . . . . . . Net.Commerce ;browse + ;display
 Workload Name  . . . . . . . . NETCOMM   (name or ?)
 Base Resource Group  . . . . . _______  (name or ?)

 Specify BASE GOAL information.  Action Codes: I=Insert new period
 E=Edit period, D=Delete period.

         ---Period---  --------------------Goal-----------------
 Action  #  Duration   Imp.  Description

   I     1              1    95% complete within 00:00:10.000
```

Select **3** to code an execution velocity goal for period 2.

```
  Service-Class  Notes  Options  Help
- EssssssssssssssssssssssssssssssssssssssN -----------------------
  e Choose a goal type for period 2         e ss               Row 1
C e                                         e _______________________
  e                                         e
S e  3  1.  Average response time           e ired)
D e     2.  Response time with percentile   e
W e     3.  Execution velocity              e  or ?)
B e     4.  Discretionary                   e  or ?)
  e                                         e
S e                                         e I=Insert new period,
E e                                         e
  DssssssssssssssssssssssssssssssssssssssM
        ---Period---  --------------------Goal--------------------
Action  #  Duration   Imp.  Description
  i
```

We assign a 20% velocity goal for any SCBRDIS workload running in period 2. Press EXIT to save your changes.

```
  Service-Class  Xref  Notes  Options  Help
- FssssssssssssssssssssssssssssssssssssssN -----------
  c Choose a goal type for period 2         c ss
C e                                         e __________
  e                                         e
S e 3   1.  Average response time           e
D EssssssssssssssssssssssssssssssssssssssssssssssssssssN
W e              Execution velocity goal                e
B e                                                     e
  e Enter an execution velocity for period 2            e
S e                                                     e
E e Velocity  . . . 20   (1-99)                         e
  e                                                     e
  e Importance  . . 1  (1=highest, 5=lowest)            e
A e Duration  . . . ________  (1-999,999,999, or        e
  e                           none for last perioc)     e
  e                                                     e
* e                                                     e
  e                                                     e
  DssssssssssssssssssssssssssssssssssssssssssssssssssssM
```

The next panel shows the fully defined SCBRDIS service class.

```
  Service-Class  Notes  Options  Help
 -----------------------------------------------------------------
                         Create a Service Class               Row
 Command ===> ____________________________________________________

 Service Class Name . . . . . : SCBRDIS  (required)
 Description  . . . . . . . . . Net.Commerce ;browse + ;display
 Workload Name  . . . . . . . . NETCOMM   (name or ?)
 Base Resource Group  . . . . . _______   (name or ?)

 Specify BASE GOAL information.  Action Codes: I=Insert new period
 E=Edit period, D=Delete period.

         ---Period---  --------------------Goal-----------------
 Action  #  Duration   Imp.  Description

   __    1              1    95% complete within 00:00:10.000
   __    2              1    Execution velocity of 20
```

Do the same for the SCMISC service class. For the SCREG and SCORDER service classes, add a 20 second response time goal for first period and a 20% velocity goal for second period work. The following screen shows the SCMISC service class.

```
  Service-Class  Xref  Notes  Options  Help
 ---------------------------------------------------------------------
                         Create a Service Class               Row 1 tc
 Command ===> ________________________________________________________

 Service Class Name . . . . . : SCMISC
 Description  . . . . . . . . . Net.Commerce miscellaneous cmds
 Workload Name  . . . . . . . . NETCOMM   (name or ?)
 Base Resource Group  . . . . . _______ (name or ?)

 Specify BASE GOAL information.  Action Codes: I=Insert new period,
 E-Edit period, D-Delete period.

         ---Period---  --------------------Goal--------------------
 Action  #  Duration   Imp.  Description

   __    1              1    95% complete within 00:00:10.000
   __    2              1    Execution velocity of 20
```

The completed SCREG service class follows:

```
  Service-Class  Xref  Notes  Options  Help
 ---------------------------------------------------------------------
                         Create a Service Class               Row 1 tc
 Command ===> ________________________________________________________

 Service Class Name . . . . . : SCREG  (required)
 Description  . . . . . . . . . Net.Commerce ;register
 Workload Name  . . . . . . . . NETCOMM   (name or ?)
 Base Resource Group  . . . . . _______ (name or ?)

 Specify BASE GOAL information.  Action Codes: I=Insert new period,
 E=Edit period, D=Delete period.

         ---Period---  --------------------Goal--------------------
 Action  #  Duration   Imp.  Description

   __    1              1    95% complete within 00:00:20.000
   __    2              1    Execution velocity of 20
```

The completed SCORDER service class follows:

```
  Service-Class  Xref  Notes  Options  Help
 ---------------------------------------------------------------------
                         Create a Service Class               Row 1 tc
 Command ===> ________________________________________________________

 Service Class Name . . . . . : SCORDER
 Description  . . . . . . . . . Net.Commerce ;order processing
 Workload Name  . . . . . . . . NETCOMM   (name or ?)
 Base Resource Group  . . . . . _______ (name or ?)

 Specify BASE GOAL information.  Action Codes: I=Insert new period,
 E=Edit period, D=Delete period.

         ---Period---  --------------------Goal--------------------
 Action  #  Duration   Imp.  Description

   __    1              1    95% complete within 00:00:20.000
   __    2              1    Execution velocity of 20
```

Step 5. Define classification rules for Net.Commerce. Go to the main WLM panel and select **6** to define new classification rules.

```
  File  Utilities  Notes  Options  Help
 --------------------------------------------------------------------
 Functionality LEVEL003        Definition Menu        WLM Appl LEVEL004
 Command ===> _______________________________________________________

 Definition data set  . . : none

 Definition name  . . . . . WEB_GOAL  (Required)
 Description  . . . . . . . Web Service Definition

 Select one of the
 following options. . . . . 6   1.  Policies
                                2.  Workloads
                                3.  Resource Groups
                                4.  Service Classes
                                5.  Classification Groups
                                6.  Classification Rules
                                7.  Report Classes
                                8.  Service Coefficients/Options
                                9.  Application Environments
                               10.  Scheduling Environments
```

Select **3** to modify the IWEB subsystem definition.

```
  Subsystem-Type  View  Notes  Options  Help
 --------------------------------------------------------------------
                 Subsystem Type Selection List for Rules      Row 1 to
 Command ===> _______________________________________________________

 Action Codes: 1=Create, 2=Copy, 3=Modify, 4=Browse, 5=Print, 6=Delete,
               /=Menu Bar

                                                       ------Class-------
 Action  Type      Description                         Service   Report
   __    ICT       OpenMVS ICT                         TSOCLASS
   3     IWEB      WEB Server Test Subsystem           FAST
   __    JES                                           DISCRETN  BAT00
   __    STC       Started Tasks
   __    TSO       TSO users                           TSOCLASS
```

Step 6. Assign transaction classes (TC) to be mapped to service classes.

At the Action field, type in an **I** to insert the following rules:

```
  Subsystem-Type  Xref  Notes  Options  Help
 --------------------------------------------------------------------
                 Modify Rules for the Subsystem Type        Row 1 to 4 of
 Command ===>                                               SCROLL ===> PA

 Subsystem Type . : IWEB        Fold qualifier names?   Y  (Y or N)
 Description  . . . WEB Server Test Subsystem

 Action codes:  A=After    C=Copy        M=Move     I=Insert rule
                B=Before   D=Delete row  R=Repeat   IS=Insert Sub-rule
          -------Qualifier------------              -------Class--------
 Action   Type       Name      Start                Service     Report
                                          DEFAULTS: FAST        ________
 ____   1 TN         POST      ___                  IBMUSER     ________
 ____   1 TC         CGI       ___                  SLOW        ________
 ____   1 SPM        009.009.  ___                  MEDIUM      ________
 ____   2   SPM       129.*    ___                  ________    ________
 ____   1 UI         WEBSRV    ___                  FASTPER3    ________
 ____   1 TC         SCBRDIS   ___                  SCBRDIS     NCBRDIS
 ____   1 TC         SCMISC    ___                  SCMISC      NCMISC
 ____   1 TC         SCREG     ___                  SCREG       NCREG
 ____   1 TC         SCORDER                        SCORDER     NCORDER
```

Step 7. Create application environments for the Net.Commerce workload. Go to the main WLM panel and select **9** to create new application environments.

```
  File  Utilities  Notes  Options  Help
 ----------------------------------------------------------------------
 Functionality LEVEL003         Definition Menu         WLM Appl LEVEL004
 Command ===> ___________________________________________________________

 Definition data set  . . : none

 Definition name  . . . . . WEB_GOAL  (Required)
 Description  . . . . . . . Web Service Definition

 Select one of the
 following options. . . . . 9   1.  Policies
                                2.  Workloads
                                3.  Resource Groups
                                4.  Service Classes
                                5.  Classification Groups
                                6.  Classification Rules
                                7.  Report Classes
                                8.  Service Coefficients/Options
                                9.  Application Environments
                               10.  Scheduling Environments
```

Type a **1** in the Action field to create a new application environment.

```
  Application-Environment  Notes  Options  Help
 ----------------------------------------------------------------------
                  Application Environment Selection List       Row 1 to 9
 Command ---> ___________________________________________________________

 Action Codes: 1=Create, 2=Copy, 3=Modify, 4=Browse, 5=Print, 6=Delete,
               /=Menu Bar

 Action  Application Environment Name      Description
   1     WEBCGI                            HTTP Environment
  __     WEBCICS                           HTTP Test Environment
  __     WEBHTML                           HTTP Test Environment
  __     WEBICAPI                          HTTP test environment
```

Define an application environment definition for the Net.Commerce ;browse and ;display functions called NCBRDIS. Select the **Application-Environment** pulldown and choose Exit to save.

```
  Application-Environment  Notes  Options  Help
 ----------------------------------------------------------------------
                     Create an Application Environment
 Command ===> ___________________________________________________________

 Application Environment Name . : NCBRDIS
 Description  . . . . . . . . . . Net.Commerce ;browse + ;display cmds
 Subsystem Type . . . . . . . . . IWEB
 Procedure Name . . . . . . . . . IMWIWM
 Start Parameters . . . . . . . . IWMSN=&IWMSSNM,IWMAE=NCBRDIS
                                  ________________________________
                                  _____________________________

 Limit on starting server address spaces for a subsystem instance:
 1   1.  No limit
     2.  Single address space per system
     3.  Single address space per sysplex
```

Define an application environment definition for Net.Commerce miscellaneous commands. Select the **Application-Environment** pulldown and choose Exit to save.

```
  Application-Environment  Notes  Options  Help
 ----------------------------------------------------------------------
                     Create an Application Environment
 Command ===> ___________________________________________________________

 Application Environment Name . : NCMISC
 Description  . . . . . . . . . . Net.Commerce miscellaneous cmds
 Subsystem Type . . . . . . . . . IWEB
 Procedure Name . . . . . . . . . IMWIWM
 Start Parameters . . . . . . . . IWMSN=&IWMSSNM,IWMAE=NCMISC
                                  ________________________________
                                  _____________________________

 Limit on starting server address spaces for a subsystem instance:
 1   1.  No limit
     2.  Single address space per system
     3.  Single address space per sysplex
```

Define an application environment definition for the Net.Commerce ;register command. Select the **Application-Environment** pulldown and choose Exit to save.

```
  Application-Environment  Notes  Options  Help
 ----------------------------------------------------------------------
                     Create an Application Environment
 Command ===> ___________________________________________________________

 Application Environment Name . : NCREG
 Description  . . . . . . . . . . Net.Commerce ;register cmd
 Subsystem Type . . . . . . . . . IWEB
 Procedure Name . . . . . . . . . IMWIWM
 Start Parameters . . . . . . . . IWMSN=&IWMSSNM,IWMAE=NCREG
                                  ________________________________
                                  _____________________________

 Limit on starting server address spaces for a subsystem instance:
 1   1.  No limit
     2.  Single address space per system
     3.  Single address space per sysplex
```

Define an application environment definition for the Net.Commerce ;order command. Select the **Application-Environment** pulldown and choose Exit to save.

```
  Application-Environment  Notes  Options  Help
 ----------------------------------------------------------------------
                     Create an Application Environment
 Command ===> ___________________________________________________________

 Application Environment Name . : NCORDER
 Description  . . . . . . . . . . Net.Commerce ;order cmd
 Subsystem Type . . . . . . . . . IWEB
 Procedure Name . . . . . . . . . IMWIWM
 Start Parameters . . . . . . . . IWMSN=&IWMSSNM,IWMAE=NCORDER
                                  ________________________________
                                  _____________________________

 Limit on starting server address spaces for a subsystem instance:
 1   1.  No limit
     2.  Single address space per system
     3.  Single address space per sysplex
```

Step 8. Use the *Utilities* pulldown to first **Install definition**, then **Activate server policy to** activate your new WLM definitions for Net.Commerce.

```
  File  Utilities  Notes  Options  Help
 ----- EssssssssssssssssssssssssssssssssssssssssssssssN --------------
 Funct e    1. Install definition                      e  Appl LEVEL004
 Comma e    2. Extract definition                      e  ____________
       e    3. Activate service policy                 e
 Defin e    4. Allocate couple data set                e
       e    5. Allocate couple data set using CDS values e
 Defin DssssssssssssssssssssssssssssssssssssssssssssssM
 Description  . . . . . . . Web Service Definition

 Select one of the
 following options. . . . . ___  1.  Policies
                                 2.  Workloads
                                 3.  Resource Groups
                                 4.  Service Classes
                                 5.  Classification Groups
                                 6.  Classification Rules
                                 7.  Report Classes
                                 8.  Service Coefficients/Options
                                 9.  Application Environments
                                10.  Scheduling Environments
```

Step 9. For added security protection, define a SERVER class profile for each application environment in RACF. The profile names are of the form:

```
IWEB.ssname.aename
```

where `ssname` is the subsystem name and `aename` is the application environment name. For example, for the application environments shown in Figure 89, and assuming a subsystem name of `IMWE`, we would define the following RACF profiles:

```
SETR CLASSACT(SERVER) RACLIST(SERVER) GENERIC(SERVER)
RDEFINE SERVER IWEB.IMWE.NCBRDIS UACC(NONE) NOTIFY(WEBSRV)
RDEFINE SERVER IWEB.IMWE.NCMISC UACC(NONE) NOTIFY(WEBSRV)
RDEFINE SERVER IWEB.IMWE.NCREG UACC(NONE) NOTIFY(WEBSRV)
RDEFINE SERVER IWEB.IMWE.NCORDER UACC(NONE) NOTIFY(WEBSRV)
PERMIT IWEB.IMWE.NCBRDIS CLASS(SERVER) ID(WEBSRV) ACC(READ)
PERMIT IWEB.IMWE.NCMISC CLASS(SERVER) ID(WEBSRV) ACC(READ)
PERMIT IWEB.IMWE.NCREG CLASS(SERVER) ID(WEBSRV) ACC(READ)
PERMIT IWEB.IMWE.NCORDER CLASS(SERVER) ID(WEBSRV) ACC(READ)
SETROPTS RACLIST(SERVER) REFRESH
```

For more information, see *MVS Planning: Workload Management*, GC28-1761.

Note: On our system we had the SERVER class active, but failed to define a RACF profile for one particular application environment. We got the following message when we accessed this resource for the first time:

```
IWM034I PROCEDURE IMWIWM STARTED FOR SUBSYSTEM IMWE 912
APPLICATION ENVIRONMENT NCBRDIS
PARAMETERS IWMSN=IMWE,IWMAE=NCBRDIS
$HASP100 IMWIWM   ON STCINRDR
$HASP373 IMWIWM   STARTED
PID: 117 40529 SERVER STARTING
ICH408I USER(WEBSRV  ) GROUP(IMWEB   ) NAME(WEB DAEMON USER
  IWEB.IMWE.NCBRDIS CL(SERVER  )
  PROFILE NOT FOUND - REQUIRED FOR AUTHORITY CHECKING
  ACCESS INTENT(READ   )  ACCESS ALLOWED(NONE   )
$HASP395 IMWIWM   ENDED
IWM032I INTERNAL STOP FOR NCBRDIS COMPLETED
```

8.2.2.3 Configuration File Setup

This phase of the setup tasks is illustrated in Figure 86 on page 167 by the dotted line box with a label "Configuration file ApplEnv setup." It involves building a mapping between incoming Web requests and the definitions you have done for WLM. The `ApplEnv` directives will tell the queue server to pass "matched" requests to the appropriate WLM application environment queue and tell WLM what the goal for the application environment is.

```
                     1                      2          3
APPLENV /cgi-bin/msrvr/;browse/*       NCBRDIS    SCBRDIS
APPLENV /msprotect/msrvr/;browse/*     NCBRDIS    SCBRDIS
APPLENV /cgi-bin/msrvr/;display/*      NCBRDIS    SCBRDIS
APPLENV /msprotect/msrvr/;display/*    NCBRDIS    SCBRDIS
APPLENV /cgi-bin/msrvr/;register/*     NCREG      SCREG
APPLENV /msprotect/msrvr/;register/*   NCREG      SCREG
APPLENV /cgi-bin/msrvr/;order/*        NCORDER    SCORDER
APPLENV /msprotect/msrvr/;order/*      NCORDER    SCORDER
APPLENV /cgi-bin/msrvr/;execmacro/*    NCMISC     SCMISC
APPLENV /msprotect/msrvr/;execmacro/*  NCMISC     SCMISC
APPLENV /cgi-bin/msrvr/;shipto/*       NCMISC     SCMISC
APPLENV /msprotect/msrvr/;shipto/*     NCMISC     SCMISC
APPLENV /cgi-bin/msrvr/;shopcart/*     NCMISC     SCMISC
APPLENV /msprotect/msrvr/;shopcart/*   NCMISC     SCMISC
```

Figure 89. Examples of ApplEnv Directives in the /etc/httpd.conf File

Notes for Figure 89:

1 This specifies the mapping rule. In this case, all requests for Net.Commerce commands: ;browse, ;display, ;register, ;order, ;execmacro, ;shipto, and ;shopcart will be classified.

2 Specifies the WLM application environment name that the request will run with. This matches a definition in the WLM policy, which you set up in the steps described by 8.2.2.2, "WLM Setup Definitions" on page 168.

3 Specifies the transaction class that you defined previously. You defined the transaction class when you modified the IWEB subsystem definition. The transaction class is mapped to a service class. Again, goals are defined in the WLM policy.

You need to define application environment (`ApplEnv`) directives which correspond to the application environments you defined to WLM. The `ApplEnv` directives are specified in the configuration file. There is a sample provided in the configuration file installed when the server was installed.

When a request meets the criteria specified in the directive, WLM determines if there are enough queue servers active to handle the requests of that application type, so that WLM can meet the goals in its policy. The initial request for a certain application will start the first occurrence of the queue server for that application (if your system in running in WLM goal mode). Therefore, the first request of a particular type will suffer a delay while a queue server is started. You may find it appropriate to pre-start at least one queue server of each type to avoid this delay. The delay experienced on our system was in the order of a few seconds.

8.2.2.4 Checking Your WLM Configuration

Before starting or modifying your Domino Go Webserver, you (or your operator automation tool) must be aware of the WLM mode and the status of any ApplEnv's that have been defined to WLM. Figure 90 shows the commands that can be used to check your WLM setup.

```
D WLM,SYSTEMS
IWM025I  14.20.44  WLM DISPLAY 564
  ACTIVE WORKLOAD MANAGEMENT SERVICE POLICY NAME: WEB_RAL
  ACTIVATED: 1998/03/26  AT: 17:45:55  BY: WELLIE2   FROM: SC59
  DESCRIPTION: Web Service Policy for Raleigh
  RELATED SERVICE DEFINITION NAME: WEB_GOAL
  INSTALLED: 1998/03/26  AT: 17:45:44  BY: WELLIE2   FROM: SC59
  WLM VERSION LEVEL: LEVEL004
  *SYSNAME*  *MODE*  *POLICY*  *WORKLOAD MANAGEMENT STATUS*
  SC59       GOAL    WEB_RAL   ACTIVE



D WLM,APPLENV=*
IWM029I  14.21.51  WLM DISPLAY 566
  APPLICATION ENVIRONMENT NAME     STATE     STATE DATA
  NCBRDIS                          AVAILABLE
  NCMISC                           AVAILABLE
  NCORDER                          AVAILABLE
  NCREG                            AVAILABLE
  WEBCGI                           AVAILABLE
  WEBCICS                          AVAILABLE
  WEBHTML                          AVAILABLE
  WEBICAPI                         AVAILABLE
```

Figure 90. Checking WLM Status

Any kind of operational error with your application environment will cause it to go into a stopped state. If it goes into a stopped state you will get the following message on your console:

```
IWM032I INTERNAL STOP FOR NCBRDIS COMPLETED
```

In order to use this particular application environment it will need to be resumed. You can go this by issuing the following command:

```
V WLM,APPLENV=NCBRDIS,RESUME
```

where NCBRDIS is the name of our application environment.

8.2.2.5 Starting Your Scalable Server while in Goal Mode

When configured as a scalable server, the IMWEBSRV procedure will have a `-SN`, subsystem name parameter coded. In our case we defined a subsystem name of IMWE. This subsystem name is defined in our IEFSSNxx member of parmlib, so when IMWEBSRV starts it will be identified to WLM. When running in scalable mode, the IMWEBSRV process is called the queue manager (QM). Figure 91 on page 182 shows the IMWEBSRV address space starting as a queue manager. Message IMW3536I identifies the PID number (1090519056), the port number this particular server is listening on (80), and the subsystem name (IMWE).

```
S IMWEBSRV
$HASP100 IMWEBSRV ON STCINRDR
IEF695I START IMWEBSRV WITH JOBNAME IMWEBSRV IS ASSIGNED TO USER WEBSRV
 , GROUP IMWEB
$HASP373 IMWEBSRV STARTED
IMW3534I PID: 1090519056 ICSS STARTING
IMW3536I QM 1090519056 0.0.0.0:80 IMWE * READY
```

Figure 91. Queue Manager Start Up from Syslog

Figure 92 shows a section from the server's very verbose trace log. In the trace we can see a GET request for a GIF image called `/demomall/met_plac.gif`. There is no matching ApplEnv directive defined for this request, so this request will be handled by the queue manager address space.

```
Client sez.. GET /demomall/met_plac.gif HTTP/1.0
WorkQueue... ApplEnv NCBRDIS /cgi-bin/msrvr/;browse/* matching URL /demomall/met_plac.gif => failed.
WorkQueue... ApplEnv NCBRDIS /cgi-bin/msrvr/;display/* matching URL /demomall/met_plac.gif => failed.
WorkQueue... ApplEnv NCORDER /cgi-bin/msrvr/;order/* matching URL /demomall/met_plac.gif => failed.
WorkQueue... ApplEnv NCREG /cgi-bin/msrvr/;register/* matching URL /demomall/met_plac.gif => failed.
WorkQueue... ApplEnv NCMISC /cgi-bin/msrvr/;execmacro/* matching URL /demomall/met_plac.gif => failed.
WorkQueue... ApplEnv NCMISC /cgi-bin/msrvr/;shipto/* matching URL /demomall/met_plac.gif => failed.
WorkQueue... ApplEnv NCMISC /cgi-bin/msrvr/;shopcart/* matching URL /demomall/met_plac.gif => failed.
WorkQueue... no matching ApplEnv found, keeping work in current process.
```

Figure 92. Domino Go Webserver Work Running in the Queue Manager Address Space

Figure 93 shows a section from the server's very verbose trace log. In the trace we see a GET request executing a Net.Commerce macro called `/cgi-bin/msrvr/;display`. We have an ApplEnv directive defined for all /cgi-bin/msrvr/;display/* requests, so this work is passed to WLM to be put on its queue. This request will be processed by a queue server address space.

```
Client sez.. GET /cgi-bin/msrvr/;display/item?prmenbr=2065&prrfnbr=38 HTTP/1.0
WorkQueue... ApplEnv NCBRDIS Transaction class SCBRDIS => passed.
WorkQueue... ApplEnv NCBRDIS Transaction name    GET => passed.
WorkQueue... ApplEnv NCBRDIS Transaction userid WEBSRV => passed.
WorkQueue... ApplEnv NCBRDIS SUBSPM     IMWE 000.002.004.003 000.001.002
WorkQueue... Daemon putting a request on WLM queue.
WorkQueue... successfully put on WLM queue.
```

Figure 93. Domino Go Webserver Work Being Put on a WLM Queue

The GET request for the macro `/cgi-bin/msrvr/;display` came from a Web browser. This is the first request since we brought up our Domino Go Webserver. Since we are running in goal mode, WLM will automatically start a queue server (QS) address space to service the work that was just put on the queue. Figure 94 shows a QS address space being started by WLM.

```
IWM034I PROCEDURE IMWIWM STARTED FOR SUBSYSTEM IMWE C70
APPLICATION ENVIRONMENT NCBRDIS
PARAMETERS IWMSN=IMWE,IWMAE=NCBRDIS
$HASP100 IMWIWM   ON STCINRDR
$HASP373 IMWIWM   STARTED
PID: 181 939350 SERVER STARTING
QS 18119 9350 0.0.0.0:80 IMWE NCBRDIS READY
```

Figure 94. Queue Server Start Up from Syslog

Note: Domino Go Webserver can take several seconds or even minutes to initialize, depending on what is in the configuration file and how many static files are locally cached in memory. This overhead is seen as latency on the first

request if the queue server address space is started by WLM in response to load. If queue server address spaces are pre-started, initialization is completed (or at least in progress) before the first request is scheduled. Figure 95 on page 183 shows an example of pre-starting queue server address spaces.

```
S IMWIWM,JOBNAME=NCBRDIS,IWMSN=IMWE,IWMAE=NCBRDIS
$HASP100 NCBRDIS  ON STCINRDR
IEF695I START IMWIWM   WITH JOBNAME NCBRDIS  IS ASSIGNED TO USER
WEBSRV  , GROUP IMWEB
$HASP373 NCBRDIS  STARTED
PID: 164 167210 SERVER STARTING
QS 16441 7210 0.0.0.0:80 IMWE NCBRDIS READY

S IMWIWM,JOBNAME=NCORDER,IWMSN=IMWE,IWMAE=NCORDER
$HASP100 NCORDER  ON STCINRDR
IEF695I START IMWIWM   WITH JOBNAME NCORDER  IS ASSIGNED TO USER
WEBSRV  , GROUP IMWEB
$HASP373 NCORDER  STARTED
PID: 166 944426 SERVER STARTING
QS 16609 4426 0.0.0.0:80 IMWE NCORDER READY
```

Figure 95. Pre-Starting the Queue Server Address Spaces

8.2.2.6 Monitoring and Reporting on Net.Commerce Workload

An essential part of running any application is to be able to monitor the system resources it is consuming. This information is used as input to both performance tuning and capacity planning.

Resource Management Facility (RMF) is used to monitor the activity of the OS/390 system. It is used for capacity planning, performance tuning and problem diagnosis.

RMF is an IBM program product that when started, collects performance data and creates reports. RMF works together with the system management facility (SMF) component of MVS to collect performance data. RMF collects the performance data, writes that data in SMF records 70 through 79, and uses those SMF records to create its reports. SMF records 70 through 79 contain such information as:

- CP (CPU) activity
- Paging activity
- Workload activity
- Channel path activity

You define what record types SMF will store by coding them in the SMFPRMxx member of SYS1.PARMLIB.

You can use the RMF Postprocessor utility to produce various kinds of printed reports based on data gathered by the RMF monitors. The RMF Postprocessor can be used, for example to produce reports on Net.Commerce workload broken out by the service classes that you defined in 8.2.2.2, "WLM Setup Definitions" on page 168. If you are running in WLM goal mode, running the RMF Postprocessor with the following keywords

```
SYSRPTS(WLMGL(WGPER,SCLASS,SCPER,POLICY,WGROUP(NETCOMM)))
```

will produce a workload activity report as shown in Figure 96 on page 184.

Figure 96. RMF Report

Details on producing RMF reports can be found in *OS/390 Resource Measurement Facility User's Guide*, SC28-1949 and *OS/390 Resource Measurement Facility Report Analysis*, SC28-1950.

Note: If you run a persistent session, all the requests are lumped into the same enclave and will not be reported correctly in RMF. To remedy this, you need to set `MaxPersistRequest=1` in your httpd.conf file. By default the `MaxPersistRequest` directive is set to 5. This problem is being addressed by IBM.

See Appendix B, "Sample RMF Postprocessor JCL" on page 187 for sample JCL to run the RMF Postprocessor utility.

Appendix A. Net.Commerce System Error Page Descriptions

In this appendix we describe each system error message and the macro or HTML file that generates it is also provided. You can use this information to modify the message text. The operator message number is provided as a cross-reference to the corresponding message that appears on the operator console. The HTML files are stored in the /html/en_US/ncerror directory.

```
CMN0152E (noconffile.html)
    CONFIGURATION/SETUP FAILURE
    Cannot open the mserver.conf file.
CMN1350I (nocookiesupport.html)
    BROWSER DEFICIENCY
    Cookie support from the browser is required.
CMN0950E (cmdinc.html)
    COMMAND STRUCTURE FAILURE - Unable to complete
    command. The command syntax is not correct, or parameters
    required by the system were not passed in.
CMN0953E (datapop.html)
    DATA POPULATION FAILURE. Data which is expected to
    be in the database, such as a macro or a task, is not found due
    to a system configuration problem.
CMN0957E (sql.html)
    SQL FAILURE - An error occurred during the execution of an
    SQL statement. DB2 may be down, or there may be a
    problem in the database.
CMN0958E (config.html)
    CONFIGURATION FAILURE - MSERVER DOWN / SETUP
    FAILURE.
        Unable to find or open a dynamic library specified by the
        merchant.
        Unable to find a function in a dynamic library specified
        by the merchant.
        The base page for the store is not valid or is
        unobtainable.
        Director is unable to communicate with server.
CMN0959E (oom.html)
    MEMORY FAILURE. Memory allocation failure
CMN0960E (env.html)
    ENVIRONMENT FAILURE. One or more values are missing
    in file mserver.conf.
CMN0961E (cmsexe.html)
    COMMAND EXECUTION FAILURE - Unable to complete
    command. A command could not execute.
CMN0962E (auth.html)
    AUTHORIZATION FAILURE. A user has attempted to
    execute an administrative command without being logged on
    to an administrative user ID.
```

Appendix B. Sample RMF Postprocessor JCL

The following is sample JCL to run the RMF Postprocessor utility.

```
//RMFPOST JOB (POK,999),RMF,MSGLEVEL=(1,1),MSGCLASS=X,
//  CLASS=A,NOTIFY=&SYSUID
//*
//SMFDMP   EXEC  PGM=IFASMFDP
//DUMPIN   DD    DSN=SYS1.SC59.MANA,DISP=SHR
//DUMPOUT  DD    DISP=(NEW,PASS),UNIT=SYSDA,SPACE=(TRK,(200,200))
//SYSPRINT DD    SYSOUT=H
//SYSIN    DD    *
    INDD(DUMPIN,OPTIONS(DUMP))
    OUTDD(DUMPOUT,TYPE(70:78))
    START(1500)
    END(1800)
//RMFSORT  EXEC PGM=SORT,REGION=4M
//SORTIN   DD   DSN=*.SMFDMP.DUMPOUT,DISP=(OLD,DELETE)
//SORTOUT  DD   DISP=(NEW,PASS),UNIT=SYSDA,SPACE=(TRK,(200,200))
//SORTWK01 DD   DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(10))
//SORTWK02 DD   DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(10))
//SORTWK03 DD   DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(10))
//SYSPRINT DD   SYSOUT=*
//SYSOUT   DD   SYSOUT=*
//SYSIN    DD   *
    INDD(DUMPIN,OPTIONS(DUMP))
    OUTDD(DUMPOUT,TYPE(70:78))
    START(1500)
    END(1800)
//RMFSORT  EXEC PGM=SORT,REGION=4M
//SORTIN   DD   DSN=*.SMFDMP.DUMPOUT,DISP=(OLD,DELETE)
//SORTOUT  DD   DISP=(NEW,PASS),UNIT=SYSDA,SPACE=(TRK,(200,200))
//SORTWK01 DD   DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(10))
//SORTWK02 DD   DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(10))
//SORTWK03 DD   DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(10))
//SYSPRINT DD   SYSOUT=*
//SYSOUT   DD   SYSOUT=*
//SYSIN    DD   *
  SORT FIELDS=(11,4,CH,A,7,4,CH,A),EQUALS
  MODS E15=(ERBPPSRT,500),E35=(ERBPPSRT,500)
//SYSOUT   DD   SYSOUT=H
//SYSPRINT DD   SYSOUT=H
//RMFPOST1 EXEC PGM=ERBRMFPP,REGION=17M
//MFPINPUT DD   DISP=(OLD,DELETE),DSN=*.RMFSORT.SORTOUT
//MFPMSGDS DD   SYSOUT=H
//SYSOUT   DD   SYSOUT=H
//PPXSRPTS DD   SYSOUT=H
//SYSPRINT DD   SYSOUT=H
//SYSIN    DD *
 SYSOUT(H)
 SYSRPTS(WLMGL(WGPER,SCLASS,SCPER,POLICY,WGROUP(NETCOMM)))
//*
```

Appendix C. Splitit and Join ISPF Macros

The Domino Go Webserver and Net.Commerce each have a file where they store their environment variable definitions. *Environment variables* are strings of characters usually made available to a program running under UNIX System Services. Environment strings are usually of the form *name=value*. For example, the LIBPATH environment variable is usually set to a number of directories in the HFS where a program would find DLL libraries. Depending on how many products you have installed, these path strings can be quite long. If using the ISPF editor, editing these long path strings can be cumbersome and error-prone.

Two ISPF edit macros called SPLITIT and JOIN have been written to help when editing long path names in the Domino Go Webserver and Net.Commerce envvars files.

C.1.1.1 SPLITIT

Path strings in an envvars file are always separated by colons (:). You can use SPLITIT to split a long line at each colon into multiple lines so you can more easily view and edit it. If you type in

```
SPLITIT :
```

and select the line to split, SPLITIT will split the line after the colon character. It will scan the rest of the line repeating the split process for each colon character, as shown in Figure 97. The ISPF block command, C or CC, is used to control the number of lines to split.

```
  File  Edit  Confirm  Menu  Utilities  Compilers  Test  Help

EDIT       mserver.envvars                                 Columns 00001 0C072
Command ===> SPLITIT :                          Scroll ===> CSR
****** *************************** Top of Data ******************************
000001 PATH=/bin:.:/usr/lpp/internet/bin
000002 SHELL=/bin/sh
000003 TZ=EST5EDT
000004 LANG=en_US
000005 NLSPATH=/usr/lpp/NetCommerce/msg/%L/%N:/usr/lpp/NetCommerce/msg/en_US/%N
====== ============== Original Line (1)======================================
C00006 LIBPATH=/usr/lpp/internet/bin:/usr/lpp/NetCommerce/lib:/usr/lpp/db2/db251C/lib
====== ============== Start of Split Lines (1)===============================
000007 LIBPATH=/usr/lpp/internet/bin:
000008 /usr/lpp/NetCommerce/lib:
000009 /usr/lpp/db2/db2510/lib
====== ============== End of Split Lines (1)=================================
000010 LD_LIBRARY_PATH=/usr/lpp/db2/db2510/lib:/usr/lpp/java/J1.1/lib/mvs
000011 CLASSPATH=/usr/lpp/db2/db2510/classes/db2jdbcclasses.zip:/usr/lpp/internet/server_root/cgi-bir/icsclass.zip
000012 DSNAOINI=DB2V510U.DB2CLI.CLIINI
000013 STEPLIB=DB2V510.SDSNEXIT:DB2V510.SDSNLOAD
****** ************************** Bottom of Data ***************************
```

Figure 97. Example of SPLITIT Macro

Figure 98 on page 190 contains the source for the ISPF SPLITIT edit macro.

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Figure 98 (Part 1 of 2). ISPF Edit Macro, SPLITIT

Figure 98 (Part 2 of 2). ISPF Edit Macro, SPLITIT

C.1.1.2 JOIN

Now that the line has been split, you are free to edit changes and add lines. When you are done, you need to use the JOIN macro to reassemble the multiple lines back into one line. You could use the text flow (TF) edit line command of ISPF, but you still need to eliminate the blank space left between the joined lines. The JOIN macro removes the blank space and trailing blanks as it joins the lines together into one line. Enter JOIN on the command line and enter the ISPF block commands, C or CC to control the number of lines to join together as shown in Figure 99. The JOIN macro also checks to see if the new line length is larger than the LRECL of the file and displays a message if that is the case. If you get a message that the lrecl is too small, see 4.10.2, "Editing a HFS File With Records Greater Than 255 Characters" on page 72.

```
  File  Edit  Confirm  Menu  Utilities  Compilers  Test  Help

EDIT       mserver.envvars                                 Columns 00001 0C072
Command ===> JOIN                                    Scroll ===> CSR
****** *************************** Top of Data ******************************
000001 PATH=/bin:.:/usr/lpp/internet/bin
000002 SHELL=/bin/sh
000003 TZ=EST5EDT
000004 LANG=en_US
000005 NLSPATH=/usr/lpp/NetCommerce/msg/%L/%N:/usr/lpp/NetCommerce/msg/en_US/%N
====== ============== Original Line (1)======================================
000006 LIBPATH=/usr/lpp/internet/bin:/usr/lpp/NetCommerce/lib:/usr/lpp/db2/db251C/lib
====== ============== Start of Split Lines (1)===============================
CC000007 LIBPATH=/usr/lpp/internet/bin:
000008 /usr/lpp/NetCommerce/lib:
000009 /usr/lpp/db2/db2510/lib:
CC000010 /usr/lpp/internet/sbin
====== ============== End of Split Lines (1)=================================
000011 LD_LIBRARY_PATH=/usr/lpp/db2/db2510/lib:/usr/lpp/java/J1.1/lib/mvs
000012 CLASSPATH=/usr/lpp/db2/db2510/classes/db2jdbcclasses.zip:/usr/lpp/internet/server_root/cgi-bir/icsclass.zip
000013 DSNAOINI=DB2V510U.DB2CLI.CLIINI
000014 STEPLIB=DB2V510.SDSNEXIT:DB2V510.SDSNLOAD
****** ************************** Bottom of Data ***************************
```

Figure 99. Example of JOIN Macro

Figure 100 on page 192 contains the JOIN source.

Figure 100. ISPF Edit Macro, JOIN

Appendix D. Special Notices

This publication is intended to help technical support staff and webmasters install, configure, and use Net.Commerce for OS/390. The information in this publication is not intended as the specification of any programming interfaces that are provided by Net.Commerce for OS/390. See the PUBLICATIONS section of the IBM Programming Announcement for Net.Commerce for OS/390 for more information about what publications are considered to be product documentation.

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Appendix E. Related Publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this redbook.

E.1 International Technical Support Organization Publications

For information on ordering these ITSO publications see "How to Get ITSO Redbooks" on page 197.

- *Enterprise Web Serving with the Internet Connection Secure Server for OS/390*, SG24-2074
- *WOW! DRDA Supports TCP/IP: DB2 Server for OS/390 and DB2 Universal Database*, SG24-2212
- *Integrating Net.Commerce with Legacy Applications*, SG24-4933

E.2 Redbooks on CD-ROMs

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Application Development Redbooks Collection	SBOF-7290	SK2T-8037

E.3 Other Publications

These publications are also relevant as further information sources:

- *Domino Go Webserver, Planning for Installation*, SC31-8642
- *Domino Go Webserver, Webmaster's Guide*, SC31-8643
- *DB2 Installation Guide*, GC26-8970
- *DB2 for OS/390 Administration Guide*, SC26-8957
- *DB2 for OS/390 Application Programming and SQL Guide*, SC26-8958
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- *IBM DB2 Connect Personal Edition: Quick Beginnings*, S10J-8162
- *OS/390: Planning for Installation*, GC28-1726
- *eTill Administrator's Guide*, SC24-5869
- *OS/390 OpenEdition Planning*, SC28-1890
- *Language Environment for OS/390 & VM Programming Guide*, SC28-1939
- *TCP/IP Performance Tuning Guide*, SC31-7188

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- *OS/390 eNetwork Communications Server: CSM Guide*, SC31-8575 (Available on SK2T-6700-09, OS/390 Collection Kit)
- *MVS Planning: Workload Management*, GC28-1761
- *OS/390 Resource Measurement Facility User's Guide*, SC28-1949
- *OS/390 Resource Measurement Facility Report Analysis*, SC28-1950
- *Net.Data Reference*
- *Net.Data Language Environment Reference*
- *Net.Data Administration and Programming Guide*

Note: Net.Data books are available in electronic form at the following URL:

```
http://www.software.ibm.com/data/net.data/library.html
```

How to Get ITSO Redbooks

This section explains how both customers and IBM employees can find out about ITSO redbooks, CD-ROMs, workshops, and residencies. A form for ordering books and CD-ROMs is also provided.

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  ```
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  TOOLS SENDTO CANVM2 TOOLS REDPRINT GET SG24xxxx PACKAGE (Canadian users only)
  ```

  To get BookManager BOOKs of redbooks, type the following command:

  ```
  TOOLCAT REDBOOKS
  ```

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  ```
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  ```

  To register for information on workshops, residencies, and redbooks, type the following command:

  ```
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  ```
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IBM Direct Publications Catalog	http://www.elink.ibmlink.ibm.com/pbl/pbl

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Help

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Using CompuServe®

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Chapter 1: Introduction

1.1 Purpose of the Document
1.2 Prerequisites to Implementing HMI
1.3 Additional Documentation
1.4 Contents of the HMI Definition Document
1.5 What is HMI?
1.6 Logging Onto CompuServe
1.7 Host/Micro Escape Sequences
1.8 General Packet Format
1.9 Examples
1.10 Appendix

1.1 Purpose of the Document

This document defines the Host-Micro Interface (HMI) Protocol, including the data types and primitives used throughout the protocol. It also defines each of the HMI transactions and packets.

1.2 Prerequisites to Implementing HMI

The prerequisites for implementing the HMI protocol include an understanding of the following:

- components of one or more information service related applications such as forums (messages and sections) or news (stories and folders)
- the CompuServe Information Service (from a user and implementer perspective)
- standard requirements for communications models, such as rigorous data sequencing, timing, and so forth.
- C-style hexadecimal representation of ASCII characters.

1.3 Additional Documentation

Procedures for implementing the Protocol from either the Host or the Micro side are outside the scope of this document. For more information, refer to any of the following resources:

- **CompuServe Communications Toolbox Document** . The CompuServe Communications Toolbox (CCT) is a utility that allows a micro developer to create his or her own CompuServe interface. This document is a reference for CCT users and it provides some background for implementing HMI as it relates to CCT.
- **Enhanced Text Object Documentation .** This draft document describes the use and implementation of ETO's in the CompuServe Service.
- **Financial Protocol.** This draft document describes the Financial Protocol, which is obsolete.
- **Secure Connection Document.** This describes the secure login procedure.

1.4 Contents of the HMI Definition Document

The following lists a brief description of each of the chapters.

Chapter 1: Introduction, which you are reading, contains an overview of the document, a description of the HMI Protocol, flow information on initiating an HMI session, packet format and data type definitions.

Chapter 2: Common Packets, describes the transactions that are common to all application protocols and may be used across the entire HMI Protocol. This chapter is frequently referenced from other chapters, especially in those transactions in which at least one possible response to a request is a common response packet.

Chapter 3: Forum Application Protocol, describes the packets that make up the Forum Applications Protocol (FAP).

Chapter 4: Electronic Mail Protocol, describes the packets that make up the Electronic Mail Protocol (EMP).

Chapter 5: Display Application Protocol, describes the packets that make up the Display Application Protocol (DAP).

Chapter 6: Real-time Communications Protocol, describes the packets that make up the Real-Time Communications Protocol (RTC).

1.4 Contents of the HMI Definition Document, *continued*

Chapter 7: CB, describes the packets that make up the CB Protocol (CB).

Chapter 8: News Service Protocol, describes the packets that make up the News Service Protocol (NSP).

Chapter 9: Dialog Presentation Protocol describes the packets that make up the Dialog Presentation Protocol (DPP).

Chapter 10: Supplemental Local Application Protocol, describes the packets that make up the Supplemental Local Application Protocol (SLAP).

1.5 What is HMI?

The HMI Protocol is an application-level protocol that defines a set of client and server transactions. (In this document, the client is the Micro and the server is referred to as the Host.)

HMI is a transaction-based protocol in which the Micro (in most cases) submits a request to the Host, and the Host responds with a related response. (Less frequently, the Host submits the request for information from the Micro.)

To transport the packets, HMI assumes the use of some reliable underlying transport such as CompuServe B Protocol or TCP/IP – transport services that provide sequenced and more error-free delivery.

Providing data to the Micro via HMI Protocol transactions allows a micro application to use and display data more effectively. Information can be stored locally and displayed in a way that is appropriate to the platform, the application, and the target audience. For example, information such as menus and message boards that remains static during a user session is stored on the Micro during a session so that the Micro does not have to repeatedly request it from the Host, a process that would use network resources inefficiently. These static data structures can be released from memory when they're no longer needed or they can be stored locally on the Micro.

1.5.1 CompuServe Application Protocols

The HMI Protocol consists of a set of application protocols called CompuServe Application Protocols (CAPs). A CAP, such as E-Mail or News, consists of a set of application-specific packets and transactions. In addition, the HMI Protocol has a set of common packets that can be used within any CAP.

Each CAP has an associated identifier called a CAP ID, which is a number between 0 and 127 (inclusive) that uniquely identifies the CAP. The Host uses CAP IDs to query the Micro about the applications it supports; the Micro uses CAP IDs to tell the Host which applications it supports and to initialize CAP sessions. (A CAP session is one in which a CAP governs the interaction between the Host and Micro.)

1.5.1 CompuServe Application Protocols, *continued*

The table below lists the CAPs, their abbreviations, and the CAP IDs in both hexadecimal and decimal form.

CAP Name	Abbreviation	CAP ID (in hex)
Forum Application Protocol	FAP	0x03
Electronic Mail Protocol	EMP	0x02
Display Application Protocol	DAP	0x01
CB	CB	0x08
Signup Protocol	SIGNUP	0x09
News Service Protocol	NSP	0x06
Dialog Presentation Protocol	DPP	0x0A
Supplemental Local Application Protocol	SLAP	0x0B
Financial (See **NOTE**.)		0x07

NOTE: The Financial Application Protocol is not defined in this document.

In addition to these CAPs, HMI includes two other sets of packet definitions: Real-Time Communications (RTC) packets and Common Packets.

RTC packets define transactions that allow for communication between users in real-time. The RTC Protocol is a support protocol that operates along with a defined CAP or parent protocol such as FAP or CB.

1.5.1 CompuServe Application Protocols*continued*

Common Packets define transactions that are common to all application protocols. They can be used with any of the defined CAPs.

1.5.2 Protocol Versions

Each CAP has an assigned version number to maintain a history of modifications to the application. A new version number is assigned when changes made to the application warrant changes to the Micro software. The Micro can continue to operate under earlier versions although they cannot use the new functionality.

Whenever possible, changes are made in such a way that existing micro applications can continue to function without requiring an upgrade. A CAP can be upgraded at any time.

1.6 Logging Onto CompuServe

1.6.1 Starting an HMI Session

The following procedures describe how to log onto CompuServe.

1. Connect to the CompuServe network using the appropriate procedure for the connection path.
2. Send CR `(0x0D)`, wait for the **Host Name:** prompt.
3. Send **CPS** and CR `(0x0D)`, wait for **User ID:** prompt.
4. The Micro sends the subscriber's User ID followed by the interrogation switch **/INT** followed by a carriage return **`(0x0D)`.**
5. The Host prompts for the subscriber's password.
6. The Micro sends the password followed by a CR `(0x0D)`.
7. The Host responds with two ACK characters (**`0x06`**) to confirm the logon.
8. When the Micro successfully logs on using the interrogation request switch, the Host sends the General Interrogation Sequence. (For more information, refer to **1.7.1 Obtaining Micro Characteristics and Capabilities**.)

1.7 Host/Micro Escape Sequences

The Host sends escape sequences to the Micro to

- obtain the characteristics and capabilities of the Micro and the Micro application; this includes whether the Micro recognizes and responds to CAP escape sequences
- identify the CAPs that the Micro supports
- iniate a CAP session
- resume a CAP session.

See **Appendix 1.10.2** for a comprehensive reference to the meaning of CompuServe interrogation escape sequences.

1.7.1 Obtaining Micro Characteristics and Capabilities

After a user logs onto CompuServe, the Host sends two **ACK** characters (hexadecimal value `0x06`) followed by the General Interrogation Sequence (GIS), also called the Automatic Terminal Recognition Sequence or **`ESC-I`**.

GIS Request, Host → Micro

The format of the GIS is as follows:

Format	Hexadecimal Representation
`ESC I`	`0x1B 0x49`

NOTE: In some cases, the Host may send the GIS regardless of whether the interrogation request switch (**`/INT`**) was included when the user logged on. Any Micro application should force CompuServe to carry out general interrogation using the interrogation request switch.

1.7.1 Obtaining Micro Characteristics and Capabilities*continued*

GIS Response, Micro → Host

In its response to the general interrogation, the Micro must include the AP option which indicates that the Micro recognizes and responds to the CAP escape sequences that follow in the HMI startup procedure. This option does not imply that the Micro actually supports any CAPs, only that it can respond to any queries that determine which, if any, CAPs it supports.

1.7.2 Querying the Micro

The Host sends the following private ANSI CSI sequence to the Micro to ask it to identify the CAPs it supports. The Host may ask the Micro if it supports a particular CAP, or it may ask for a list of all CAPs it supports. The Host sends this sequence only if the Micro has stated that it supports CAPs. (This is the *AP* option in the Micro's response to the General Interrogate escape sequence).

NOTE: This transaction is abbreviated as CSIQAP, in which CSI refers to the **`ESC [`** which is the ANSI Control Sequence Introducer.

1.7.2 Querying the Micro,*continued*

CSIQAP Request, Host → Micro

The format of the CSIQAP sequence is:

Format	**Hexadecimal Representation**
`ESC [ > Pn q`	`0x1B 0x5B 0x3E <Pn> 0x71`

where the `Pn` is an ASCII character number which may be:

0 = Provide a list of all CAPs supported, or

CAP ID = Specific CAP; Host asks Micro if it supports this CAP

NOTE: All descriptions that include values of the form **`Px`** in CSI sequences are ASCII decimal numbers.

1.7.2 Querying the Micro,*continued*

CSIQAP Response, Micro → Host

The Micro's response to the CSIQAP sequence depends on the value of **`Pn`** and what (if any) CAPs it supports. The following lists the possible responses from the Micro.

- If `Pn` is 0 and if the Micro supports one or more CAPs, the Micro sends the following response string:

Format	**Hexadecimal Representation**
`# Pi , ... CR`	`0x23 <Pi> 0x2C ... 0x0D`

where `Pi` is the CAP ID of any and all CAPs that the Micro supports

➢EXAMPLE

If the Micro supports Display, E-Mail, News, and DPP, the response would be:

```
# 1 , 2 , 6 , 10 CR
```

which in hexadecimal representation is

```
0x23 0x31 0x2C 0x32 0x2C 0x36 0x2C 0x31 0x30 0x0D
```

1.7.2 Querying the Micro,*continued*

- If **`Pn`** is 0 and if the Micro does not support CAPs, it sends the following response string:

Format	**Hexadecimal Representation**
`# CR`	`0x23 0x0D`

- If `Pn` is a specific CAP ID and the Micro supports the CAP, the Micro sends the following response string:

Format	**Hexadecimal Representation**
`# Pn CR`	`0x23 <Pn> 0x0D`

where `Pn` is the CAP ID in the CSIQAP sequence received from Host.

1.7.2 Querying the Micro,*continued*

- If **`Pn`** is equal to a specific CAP ID and the Micro does not support it, the Micro sends this response string:

Format	**Hexadecimal Representation**
`# CR`	`0x23 0x0D`

1.7.3 Initiating a CAP Session

The Host sends the following private ANSI CSI sequence to the Micro to ask it to go into a specified CAP. The Host sends this sequence only if the Micro has stated that it supports CAPs (the *AP* option in the Micro's response to the General Interrogate escape sequence).

NOTE 1: This transaction is abbreviated as CSIIAP, in which CSI refers to the **`ESC [`** which is the ANSI Control Sequence Introducer.

NOTE 2 The CAP is sent twice for verification.

1.7.3 Initiating a CAP Session,*continued*

CSIIAP Request, Host → Micro

The format of the CSIIAP sequence is:

Format	**Hexadecimal Representation**
`ESC [ > Pn ; Pn p`	`0x1B 0x5B 0x3E <Pn> 0x3B <Pn> 0x70`

where `Pn` = identifier of requested CAP:

0 = illegal
1 = Display Application Protocol
2 = Electronic Mail Protocol
3 = Forum Application Protocol
4 = obsolete
5 = obsolete
6 = News Service Protocol
7 = Financial Protocol
8 = CB Protocol
9 = Signup Protocol
10 = Dialog Presentation Protocol
11 = Supplemental Local Application Protocol

NOTE: All other values are reserved for future CAPs.

1.7.3 Initiating a CAP Session,*continued*

CSIIAP Response, Micro → Host

If the Micro supports the requested CAP, it responds with the following IAP sequence:

`# Pn , Pv , Pt , Pp , Ps , Pm , Pz ; Pc CR`

where:

```
Pn =      CAP identifier.
Pv =      Version number of the given CAP supported by the Micro
Pt =      Transport layer requirements
          0 = No transport layer required
          1 = Use B-protocol
          2 = Use single-session TCP/IP Protocol
          3 = Use multi-session TCP/IP Protocol
Pp =      Version number of the common application protocol supported
          by the Micro
Ps =      String format
          0 = ASCII (7-bit); compaction on
          1 = ASCII (7-bit); compaction off
          2= ISO (8-bit); compaction on
          3 = ISO (8-bit); compaction off
```

1.7.3 Initiating a CAP Session,*continued*

```
Pm =      CompuServe hypertext object version
Pz =      HMI packet size in 4K units; optional; default = 1; size of
          Micro's received buffer for HMI packets
Pc =      Checksum.  Arithmetic sum of the preceding characters
          including the '#', ';', and commas, and is represented as
          ASCII decimal digits.'
```

If the Host receives a valid response, it sends two ACK characters to the Micro. Both the Host and the Micro are prepared to send and receive HMI packets. The specific protocol determines whether the Host or the Micro starts first. If the Host receives an invalid response (for example, wrong checksum; invalid version number, transport layer, or debug mode), it sends a NAK **`(0x15)`** character to the Micro.

If the Micro does not support the requested CAP or does not wish to enter protocol mode at the current time, it responds with the following IAP sequence:

Format	**Hexadecimal Representation**
`# CR`	`0x23 0x0D`

1.7.4 Resuming a CAP Session

The Host sends the following private ANSI CSI sequence to resume the previous CAP when the Micro is operating in terminal-emulation mode during an HMI session either because the CompuServe application does not support HMI or the Micro does not support the CAP used by the Host application.

NOTE: This transaction is abbreviated as CSIRAP, in which CSI refers to the **`ESC [`** which is the ANSI Control Sequence Introducer.

CISRAP Request, Host → Micro

The format of the CSIRAP sequence is:

Format	**Hexadecimal Representation**
`ESC [ > r`	`0x1B 0x5B 0x3E 0x72`

CISRAP Response, MIcro → Host

The Micro responds with the following:

Format	**Hexadecimal Representation**
`ACK CR`	`0x06 0x0D`

1.8 General Packet Format

```
         Bits
  7   6   5   4   3   2   1   0
+---+---+---+---+---+---+---+---+
| E |         CAP ID            |
+---+---+---+---+---+---+---+---+
| packet type identifier (PTI)  |
+---+---+---+---+---+---+---+---+
|        PTI extension          | (optional)
+---+---+---+---+---+---+---+---+
|            data (1)           |
+---+---+---+---+---+---+---+-  --+
.                               .
.                               .
.                               .
+---+---+---+---+---+---+---+---+
|            data (n)           | n = length
+---+---+---+---+---+---+---+---+
```

1.8 General Packet Format, *continued*

Note the following about the packet layout format.

- The “E” bit denotes that the packet is to be encrypted. The encryption method is not yet specified and this bit must be zero.
- The minimum length of a packet is two bytes; the default maximum is 4095 bytes. (refer to the `Pz` field in **1.7.3 Initiating a CAP Session** for more information.)
- PTIs are encoded as follows:

  reserved
  `0x01 .. 0x1E` Common
  `0x1F` Common extender
  `0x20 .. 0xFE` CAP specific
  `0xFF` CAP extender

- The PTI extension byte is present ONLY if the PTI is `0x1F` or `0xFF`. The resulting values are encoded as follows:

  `0x1F00 .. 0x1FFF` Extended common PTIs
  `0xFF00 .. 0xFFFF` Extended CAP specific PTIs

1.8 General Packet Format, *continued*

1.8.1 Packet Body

The body of each HMI packet is described as a Pascal-style data structure, as shown:

```
RECORD
   ...
END;
```

1.8.2 Primitive Data Types

The primitive data types are shown in the table below.

Data Type	Value	Description
BYTE	0 .. 255	1 byte
WORD	0 .. 65535	2 bytes (least significant byte first)
DWORD	0 .. 4294967295	4 bytes (least significant byte first)
STRING	encoded SIXBIT string	Depends on the `Ps` field in **1.7.3 Initiating a CAP Session**; (See **1.10.1 Appendix** for SIXBIT encoded string.)
XCOUNT	0 .. 127 or 0 .. 16383	1 or 2 bytes (See **XCOUNT** explanation below)
COUNT24	0 .. 16777215	3 bytes (least significant byte first)

BYTE or WORD

The following syntax is used to describe bit positions within a BYTE or WORD data type:

BIT first_bit [.. last_bit]

1.8.2 Primitive Data Types,*continued*

XCOUNT

An XCOUNT value is either one or two bytes. If the high bit in the first byte is zero, then it is a one-byte (7-bit) value ranging from 0 to 127. If the high bit in the first byte is set, then it is a two-byte (15-bit) value. The high bit is stripped off and replaced by the byte that follows. The result is a 15-bit value ranging from 0 to 16383.

b7 b6 b5 b4 b3 b2 b1 b0
b15 b14 b13 b12 b11 b10 b9 b8

Byte 1 Byte 2

If **b7** = 0, then value = **b6** ... **b0**

If **b7** = 1, then value = **b15** ... **b8** **b6** ... **b0**

Note that the high order order bit in the first byte gets dropped.

1.8.2 Primitive Data Types,*continued*

➢EXAMPLE

Byte 1 = 0 0 1 1 0 0 0 0 1

b7 = 0 => one-byte value = 1 1 0 0 0 0 1 = 97

Byte 2 = 1 1 1 0 0 0 0 1 **Byte 2** = 0 0 0 0 0 1 0 0

b7 = 1 => two-byte value = 0 0 0 0 0 1 0 0 1 1 0 0 0 0 1 = 609

1.8.3 Layout Formats

VARIANT

A variant is described as:

```
CASE test OF
  WHEN match1 =>
    field;
    ...
  WHEN match2 =>
    field;
    ...
  WHEN OTHERS =>
    NULL;
END CASE;
```

OPTIONAL FIELDS

An optional field is described as:

name: type IF condition;

An optional group of fields is described as:

```
IF condition THEN
    field;
    ...
END IF;
```

1.8.4 Common Types

The following compound data types are used throughout the entire HMI Protocol.

```
Date =                              | 2 bytes
  RECORD
    day: BIT 0 .. 4;                | 1 .. 31
    month: BIT 5 ..8;               | 1 .. 12
    year: BIT 9 .. 15;              | + 1970
  END;

TimeStamp4 =                        | 4 bytes
  RECORD
    second: BIT 0 .. 4;             | 2-second resolution
    minute: BIT 5 .. 10;            | 0 .. 59
    hour: BIT 11 .. 15;             | 0 .. 23
    day: BIT 16 .. 20;              | 1 .. 31
    month: BIT 21 .. 24;            | 1 .. 12
    year: BIT 25 .. 31;             | + 1970
 END;

UserID = STRING;
```

1.8.4 Common Types,*continued*

```
Currency: XCOUNT;        | 0 = (USA) 1/100 of a U S Dollar ($123.45)
                         | 1 = (UK) 1/100 of a Pound (#123.45)
                         | 2 = (Germany) 1/100 of a Deutsche Mark (DM123.45)
                         | 3 = (France) 1/100 of French Franc (123.45 F)
                         | 4 = (Switzerland) 1/100 of Swiss Franc (Fr. 123.45)
                         | 5 = (Italy) Lira (L. 123)
                         | 6 = (Canada) 1/100 of a Canadian Dollar ($123.45)
                         | 7 = (Australia) 1/100 of a dollar ($123.45)
                         | 8 = (Japan) Yen (Y 123)
                         | 9 = (Austria) 1/100 of a Schilling (S 123,45)
                         | 10 = (Belgium) 1/100 of a Belgian Franc (123,45 BF)
                         | 11 = (Denmark) 1/100 of a Danish Krone (kr 123,45)
                         | 12 = (Finland) 1/100 of a Markka (123,45 Mk)
                         | 13 = (Ireland) 1/100 of a Punt (#123.45)
                         | 14 = (Netherlands) 1/00 of a Netherland Guilder (G
                         | 123,45)
                         | 15 = (New Zealand) 1/00 of a New Zealand Dollar
                         | ($123.45)
                         | 16 = (Norway) 1/100 of a Norwegian Krone (kr123,45)
                         | 17 = (Poland) 1/100 of a Zloty (Zl123,45)
                         | 18 = (Portugal) 1/100 of a Escudo (123$45 Esc.)
                         | 19 = (Spain) Spanish Peseta (Pts 123)
                         | 20 = (Sweden) 1/100 of a Swedish Krona (123,45 kr)
                         | [more to be specified]
```

1.8.4 Common Types,*continued*

```
FileType:BYTE;                  | 1 = text (7-bit ASCII)
                                | 2 = binary (8-bit data)
                                | 4 = RLE; (OBSOLETE)
                                | 5 = NAPLPS; (OBSOLETE)
                                | 6 = GIF (raster graphics)
                                | 7 = JPEG (JFIF) graphics
                                | 8 = ETO
                                | 9 = HTML
                                | 10 = PNG
```

1.8.4 Common Types,*continued*

```
file_size: Count24;             | In bytes

ImageID =                       | 4 bytes
  RECORD
    is_sheet: BIT 0;
    IF is_sheet = 1 THEN
      image: BIT 1.. 4;         | Ignored by Host; the number of
                                | possible sheets
                                | is a 22-bit number (8,388,607); the
                                | number of
                                | possible pictures is a 26-bit number
                                | (134,217,727)
      sheet: BIT 5 .. 27;
    ELSE
      picture: BIT 1 .. 27;
    END;
    zero_value: BIT 28 .. 31;   | Must be zero
  END;
```

1.8.4 Common Types,*continued*

```
ImageRef =                      | 5 bytes
  RECORD
    is_sheet: BIT 0;            | Image is part of a "sheet"
    IF is_sheet = 1 THEN
        image: BIT 1 .. 4;      | 0 .. 15;
        sheet: BIT 5 .. 27;     | 0 .. 8,388,607
    ELSE
        picture: BIT 1 .. 27;   | 0 .. 134,217,727
    END;
    version: BIT 28 .. 39;      | Version of sheet or picture
  END;

Color =
  RECORD
    red: BYTE
    green: BYTE
    blue: BYTE
  END;
```

1.9 Examples

Several packet layout examples are shown below.

1.9.1 Example 1

```
bogus_response =
  RECORD
    msg_no_base: COUNT24;
    last_access: TimeStamp4;
    last_msg_read: WORD;
    newest_msg: WORD;
    alerts:                           | 2 bytes
      RECORD
        waiting_msgs: BIT 0;
        new_bulletin: BIT 1;
        conference: BIT 2;
        not_member: BIT 3;
        reserved: BIT 4 .. 15;        | Must be zero
      END;
```

1.9.1 Example 1, *continued*

```
    restrictions:                   |2 bytes
      RECORD
        no_message_read: BIT 0;
        no_message_send: BIT 1;
        no_library_read: BIT 2;
        no_library_send: BIT 3;
        no_conference: BIT 4;
        no_private_msgs: BIT 5;
        no_EasyPlex: BIT 6;
        reserved: BIT 7 .. 15;      |Must be zero
      END;
    forum_name:  STRING;
    user_id: UserID;
    user_name: STRING;
    max_msg_size: WORD;
    max_abstract_size: WORD;
  END;
```

Example 2

```
msg_sections_response =
  RECORD
    num_sections: BYTE;
    section: ARRAY [1 .. num_sections] OF
      RECORD
        section_id:                            |1 byte
          RECORD
            msg_section_no: BIT 0 .. 4;
            reserved: BIT 5 .. 6;              |Must be zero
            selected: BIT 7;
          END;
        section_title: STRING;
        total_msgs: XCOUNT;
    ..END;
  END;
```

1.10 Appendix

1.10.1 SIXBIT encoding

The HMI Protocol SIXBIT encoding is handled as follows:

There are 64 tokens in the SIXBIT character set. These tokens are numbered from 0 to 63, and have names which map directly to Latin-1 characters. Characters in a SIXBIT character stream are packed 4 SIXBIT characters to 3 BYTES.

These are the 64 tokens defined in the SIXBIT character set:

Space

```
  ! " # $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ a b c d e f g h i j k l m n o p q r s t u v w x y z [ \ ] ^ _
```

Latin-1 characters are are generated using the SIXBIT scheme by using these 64 tokens and a quoting scheme to generate Latin-1 characters not in this set.

1.10.1 SIXBIT encoding, *continued*

The following table shows the mapping of Latin-1 characters to SIXBIT tokens. Note that many Latin-1 characters are delivered as two or three SIXBIT token sequences.

```
Latin-1        SIXBIT
Characters in the Control range (0x00 to 0x1F)
     NUL           Space
      ^A             # A     |(Number sign, A)
     ...             ...
      ^I             #I      |(Number sign, I)
      ^J              %
      ^K             # K     |(Number sign, K)
     ...             ...
      ^_             # _     |(Number sign, Underscore)
```

1.10.1 SIXBIT encoding,*continued*

Characters in the range 0x20 to 0x5F

Space	$	
!	!	
"	"	
#	^ ,	(Circumflex accent, Comma)
$	^-	(Circumflex accent, Hyphen)
%	^.	(Circumflex accent, Period)
&	&	
...	...	
@	@	
A	^ a	(Circumflex accent, A)
...	...	
Z	^ z	(Circumflex accent, Z)
[	[	
\	^ <	(Circumflex accent, Less-than sign)
]	]	
^	^ >	(Circumflex accent, Greater-than sign)
_	_	(Underscore)

1.10.1 SIXBIT encoding,*continued*

Characters in the range 0x60 to 0x7F

`	^ @	(Circumflex accent, At-sign)
a	a	mapped directly
...	...	
z	z	
{	^ [	(Circumflex accent, Left bracket)
|	^ \	(Circumflex accent, Backslash)
}	^]	(Circumflex accent, Right bracket)
~	^ ^	(Circumflex accent, Circumflex accent)
DEL	# ?	(Number sign, Question mark)
80	# @ @	(Number sign, At-sign, At-sign)
...	...	
9F	# @ _	(Number sign, At-sign, Underscore)
A0	# @ ?	(Number sign, At-sign, Question mark)
A1	^ !	(Circumflex accent, Exclamation mark)
...	...	
AB	^ +	(Circumflex accent, Plus sign)
AC	\ [	(Backslash, Left bracket)
AD	^ =	(Circumflex access, Equal sign)
AE	\ \	(Backslash, Backslash)
AF	^ /	(Circumflex accent, Slash)

1.10.1 SIXBIT encoding,*continued*

B0	^ 0	(Circumflex accent, 0)
...	...	
BB	^ ;	(Circumflex accent, Semicolon)
BC	\ ]	(Backslash, Right bracket)
BD	\ ^	(Backslash, Circumflex accent)
BE	\ _	(Backslash, Underscore)
BF	^ ?	(Circumflex accent, Question mark)
C0	\ @	(Backslash, At-sign)
C1	\ !	(Backslash, Exclamation mark)
...	...	
DF	\ ?	(Backslash, Question mark)
E0	^ _	(Circumflex accent, Underscore)
E1	# !	(Number sign, Exclamation mark)
...	...	
FE	# >	(Number sign, Greater-than sign)
FF	# J	(Number sign, J)

Notice that upper case Latin-1 characters are mapped into the sequence consisting of a SIXBIT caret ('^') character followed by the equivalent lowercase SIXBIT token.

1.10.1 SIXBIT encoding,*continued*

In addition, the character pair (backslash, letter) denotes a caps lock state. The first pair enables caps lock, and the second pair disables caps lock. The letter is part of the character stream. For example, the following sequence of SIXBIT tokens maps to ASCII as shown:

```
    ^the \red barn \is on fire.    =>    The RED BARN is on
fire.
```

The following character pairs are never used:

# Space	(Number sign, Space)
^ Space	(Circumflex accent, Space)
\ Space	(Backspace, Space)

1.10.2 General Interrogation

CompuServe General Interrogation is a sequence of characters sent by the CompuServe host to query the micro application about its capabilities. The micro's response to CompuServe General Interrogation provides information to CompuServe about the various options supported by the communications program, including the terminal emulation it uses, the graphics format(s) it supports, the hardware on which it is running, which file-transfer protocols it supports, and whether it responds to the CompuServe CAP Query sequence (which requests either a list of supported CAPs or confirmation of support for a specific CAP).

In particular, it is critical that any CompuServe HMI micro application specify its support for CAP Query, because without information on supported CAPs, CompuServe cannot initiate an HMI session.

Note on past usage: CompuServe General Interrogation is also known as "CompuServe Automatic Terminal Recognition (ATR)," and the General Interrogation sequence (see below), sent from the host to the micro, is often simply referred to as the "ESC-I" sequence.

1.10.2 General Interrogation,*continued*

The CompuServe General Interrogation Sequence

After the micro logs onto CompuServe with the interrogation request switch (described in CompuServe Host Micro Interfaces Toolboxes), CompuServe sends the following sequence:

```
<ESC> <I>          (0x1B 0x49)
```

Responding To General Interrogation

When the terminal program receives the General Interrogation sequence, it should transmit a General Interrogation Response string, specifying its capabilities, according to the following syntax:.

```
<#><AppID>:<Vers>:<Platform>,<<F-code>,<F-code>,...>,<+><Check> <CR>
```

Note: If your application is using the Connect Toolbox, it should call the CONSendESCIResponse function to send the response to General Interrogation.

1.10.2 General Interrogation,*continued*

General Interrogation Response String Components

Each of the bracketed components in the General Interrogation Response string is explained in this section, along with the valid values which they can take. Each "F-code" field is delimited by a comma. Other fields do not use delimiters.

Note: Do not include the angle-brackets ("<" and ">") in the actual string: they are simply used in the string-formatting definition (above) to separate different component types, making it easier for you to distinguish among them.

Response String Prefix

<#>	When sent by the micro in response to the host's General Interrogation sequence, the "pound" sign (#) identifies the characters that follow it as the a General Interrogation Response string (terminated with a carriage-return character) whose components define the micro application's capabilities as well as those of the micro.

1.10.2 General Interrogation,*continued*

Micro Software Product Specifier

<AppID>	Specifies the micro communications software. It may contain from one to six characters; these may be letters (both upper- and lower-case), digits (0-9), and periods (.).

Code	**Meaning**
DOSCIM	DOS CompuServe Information Manager

Micro Software Version Specifier

<Vers>	Specifies the version of the micro communications software. It may contain from zero to twelve characters (inclusive); these may be letters, digits, and periods.

Code	**Meaning**
3.2.b3	Version 3.2, beta 3

1.10.2 General Interrogation,*continued*

Platform Specifier

<Platform> Specifies the specific hardware or operating system, or a generic class of software. This is can be up to three characters in length. At this time, the following codes have been defined:

Code	**Platform**
W	Windows
U	Unix
WNT	WinNT
D	DOS
O	OS/2
W32	Win32
M	Mac
N	NeXT

Note: Contact CompuServe to register any platform or class of software not included in the list above.

1.10.2 General Interrogation,*continued*

Screen and Cursor Control Types Specifier

<F-codes> A series of codes giving the screen and cursor-control options supported. The currently recognized F-codes are:

Code	**Meaning**
AC	ANSI color
CA	ANSI/VT100 cursor control
CC	VIDTEX/VT52 cursor control
CW	Wide mode (double-width characters invoked during session by: <ESC> <m>. Can be turned off by <ESC> <l> (lower-case "L"; ASCII 0x6C)
SSyx	Screen Size: the character value of y equals the number of lines + 31 (decimal); x equals the number of columns plus 31. Thus, the code SS7o identifies a screen height of 24 lines (the character "7" = ASCII 0x37, or decimal 55; and 55-31=24) and 80 columns (ASCII "o" = 111 decimal; 111-31=80).

Note: The SS code is not necessary in applications using HMI.

1.10.2 General Interrogation,*continued*

Graphics Formats Specifier

<F-codes> The type(s) of graphics formats supported by the application can also be included in the response string as two-letter F-codes.

Code	**Meaning**
GF	GIF graphics (see GIF Version and Graphics Resolution Specifications)
GH	High-resolution RLE graphics
GJ	JPEG graphics
GJP	Progressive JPEG
GM	Medium-resolution RLE graphics
GP	Portable Network graphics (PNG)
NF	Full NAPLPS graphics

1.10.2 General Interrogation,*continued*

Protocol Types and CAP-Query Request

<F-codes> These two-letter F-codes apply to several different classes of protocols: error-correction (low-level) protocols, such the XMODEM file-transfer and the CompuServe B+ Protocol (which is used for both file transfers and, under HMI, data-packet error correction); and capture-buffer capabilities.

Code	**Meaning**
AP	Application responds to the CompuServe Application Protocol (CAP) Query escape sequences, indicating recognition of the Host-Micro Interface (HMI) Protocol
CB	Capture Buffer
PB	B+ Protocol file transfers
PX	XMODEM Protocol file transfers

Note: Your application must include the AP F-code in the response string if it will be operating under HMI. Otherwise, the host computer will not request a list of supported CAPs from the micro.

1.10.2 General Interrogation,*continued*

Miscellaneous Specifiers

<F-codes> Various micro and application capabilities or functions that don't fall under any particular category. CompuServe reserves the right to add items to this or any other list of F-codes in the future, at which time they will be added to this Appendix.

Code	**Meaning**
HC	Hard Copy (printer connected)
XX	Ignored
DT	B+ Protocol disk tranfers

1.10.2 General Interrogation,*continued*

Language Prefererence Specifier

<F-codes> Language preference; "LA#", where # is one of the following values:

Modifier	**Language**
0	unknown (default)
1	American English
2	British English
3	Danish
4	Dutch
5	Finnish
6	French
7	German
8	Icelandic
9	Italian
10	Norwegian
11	Portuguese
12	Spanish
13	Swedish

1.10.2 General Interrogation,*continued*

Character Set Specifier

<F-codes> Character set; "CH#", where # is one of the following character sets:

Modifier	**Character Set**
0	7-bit ASCII (ISO646) (default character set)
1	LATIN-1 (ISO8859-1)

Country Preference Specifier

<F-codes> Country preference; "CO#", where # is the ISDN/X.121 country number:

Identifier	**Country**
313	USA
208	France
218	Germany
234	United Kingdom

1.10.2 General Interrogation,*continued*

GIF Version and Graphics Resolution Specifications

If the micro application supports GIF (specified with the "GF" Graphics Formats F-code), you can also specify the GIF version supported as well as screen dimensions (pixel height and width, bits per pixel, etc.).

<GI#> The code "GI" followed immediately by a number of the format: "`vcpwwwhhh<cpwwwhhh >...`", where:

Digit(s)		**Denotes**
v		highest GIF version supported; defined values are:
	Value	GIF Version #
	0	87a
	1	89a
c		color bits; number of bits-per-pixel supported (the number of supported colors is therefore 2c)
p		color resolution; number of bits-per-color component supported in the hardware color palette (if p=0, then no hardware palette table is available)

1.10.2 General Interrogation,*continued*

GIF Version and Graphics Resolution Specifications, *continued*

www	three-digit number, in hexadecimal, denoting pixel width of the image; limited to 4095 (decimal), although GIF specification allows resolution widths of up to 64K. If the www value equals FFF (4K), this indicates resolutions equal to or greater than 4K horizontal.
hhh	three-digit number, in hexadecimal, denoting pixel height of the image (same assumptions apply as for pixel width value, above)

Note: The GI modifier string can continue with optional resolution specifications for the micro, each of the form "cpwwwhhh". For example, the string "GI1462801E0861400C8" indicates GIF version 89a, with two resolutions: four bits per pixel (16 colors), with a color resolution of six bits per primary and a screen resolution of 640x480 pixels (0x280 by 0x1E0); and a resolution of 8 bits per pixel (256 color VGA), with a color resolution of six bits per primary and a screen resolution of 320x200 pixels (0x140 by 0x0C8).

1.10.2 General Interrogation,*continued*

Interrogation Response Checksum

<+><Check>	A check value derived by adding together all characters in the General Interrogation Response string (up to and including the "+"), truncating the sum to 16 bits, and converting it to an ASCII digit string.

String Terminator

<CR>	The ASCII carriage-return character (0x0D), which signifies the end of the HMI General Interrogation Response string.

1.10.2 General Interrogation,*continued*

Code Sample

The following code sample constructs an interrogation response sequence, including checksum, for the application CCTEX (version 200, Windows), which supports CompuServe B+ Protocol for file transfers ("PB"), disk transfers ("DT"), ANSI/VT100 cursor control ("CA"), CompuServe's GIF graphics format ("GF"), the ability to respond to the CAP Query sequence ("AP"), the Latin-1 character set ("LA1"), and GIF version 89a in standard VGA resolution ("GI146..."):

```
{
LPSTR lpEscI = "#CCTEX:200:W,PB,DT,CA,GF,AP,LA1,GI1462801E0861400C8,+"
WORD wCheck = 0, i;
char szBuf[20];
      while (*lpEscI)
      {
       wCheck += *lpEscI;
       SIOPutChar (lpSio, *lpEscI++);
      }
     sprintf(szBuf, "%u\r", wCheck);
      for (i = 0; szBuf[i]; I++)
      SIOPutChar (lpSio, szBuf[i]);
}
```

Chapter 9: Dialog Presentation Protocol

9.1 Overview
9.2 Query Packets
9.3 Dialog Packets
9.4 Interact Packets
9.5 File Packets

9.1 Overview

DPP is the acronym for the Dialog Presentation Protocol. The CAP ID of the Dialog Presentation Protocol is 0x0A.

DPP differs from other application protocols in that the typical client/server roles are reversed. In DPP, the Host is in control and initiates transactions with the Micro. When the Host needs feedback from the Micro (i.e., user), it initiates an *interact*, which allows the user to provide input to the active DPP dialog. (The user cannot initiate any other HMI transactions at this point; the Micro can only interact with the dialog.) When the user finishes providing input, the Micro terminates the interact, data is returned to the Host, and the Host resumes control of the session.

9.1.1 Summary of Packets

The DPP packets are organized functionally by the following categories:

- *Query Packets* allow the Host to identify itself to the Micro and obtain workspace size and a list of applications dialogs that the Micro has remembered.
- *Dialog Packets* allow the Host to add, show, hide, update, or read the current contents of a specified dialog.
- *Interact Packets* allow the user to interact with a dialog, request additional dialog-related information from the Host, send the contents of the dialog back to the Host, and receive verification from the Host as to whether the dialog values sent back were valid.
- *File Packets* allow for the transfer of files from the Host to the Micro and from the Micro to the Host.

9.1.1 Summary of Packets,*continued*

The table below lists the following information:

- functional categories
- packet transactions within categories
- packets within each transaction
- PTI and transmittal direction for each packet
- page numbers for more information on each packet.

9.1.1 Summary of Packets,*continued*

Functional Category	Transaction	Packet	PTI	Direction
Query	QUERY	QUERY Request	0x20	Host → Micro
		QUERY Response	0x21	Micro→ Host
Dialog	ADD-DIALOG	ADD-DIALOG Request	0x22	Host → Micro
	ADD-ADF-DIALOG	ADD-ADF-DIALOG Request	0x34	Host → Micro
	SHOW-DIALOG	SHOW-DIALOG Request	0x23	Host → Micro
	HIDE-DIALOG	HIDE-DIALOG Request	0x24	Host → Micro
	UPDATE-DIALOG	UPDATE-DIALOG Request	0x2B	Host → Micro
	READ-DIALOG	READ-DIALOG Request	0x2D	Host → Micro

9.1.1 Summary of Packets,*continued*

Functional Category	Transaction	Packet	PTI	Direction
Interact	INTERACT	INTERACT Request	0x25	Host → Micro
		INTERACT Response	0x26	Micro→ Host
		RESEND Request	0x27	Host → Micro
	SEND-HELP	SEND-HELP Request	0x2C	Micro→ Host
	EXPAND LIST	EXPAND-LIST Request	0x28	Micro→ Host
		EXPAND-LIST Response	0x29	Host → Micro
	SEND-EDIT	SEND-EDIT Request	0x2A	Micro→ Host
	SEND-EDITBOX	SEND-EDITBOX Request	0x35	Micro→ Host
	UPDATE-BOX	UPDATE-BOX Request	0x36	Host → Micro

9.1.1 Summary of Packets,*continued*

Functional Category	Transaction	Packet	PTI	Direction
File	SEND-FILENAME	SEND-FILENAME Request	0x2E	Host → Micro
	SEND-FILE	SEND-FILE Request	0x2F	Host → Micro
		SEND-FILE Response	0x30	Micro→ Host
	GET-FILENAME	GET-FILENAME Request	0x31	Micro→ Host
		GET-FILENAME Response	0x32	Micro→ Host
	RECEIVE-FILE	RECEIVE-FILE Request	0x33	Host → Micro

NOTE: Some requests, such as the DIALOG requests, do not have a corresponding response specified in this table. Rather, they receive one of the Common Packet Responses such as a DATA, SUCCESS, or FAILURE Response packet. In addition, any request can have a FAILURE Response returned to it. For more information on the Common Response packets, refer to *Chapter 2: Common Packets*.

9.1.2 DPP Versions

The following lists the version numbers and version descriptions for DPP.

DPP Version	Description
0	Initial Version
1	Added extra features (longer lists, expanded update capabilities, etc.)
2	New interpretation of selected bit in UPDATE-DIALOG packet
3	Includes ADF version of ADD-DIALOG Transaction; also SEND-EDITBOX Transaction and UPDATE-BOX Transaction

NOTE: Version 3 includes very recent protocol changes. Those changes are noted in this document as (V3).

9.1.3 List of DPP Terms

The following list of DPP terms appear throughout the chapter.

Application ID

An *application ID* uniquely defines a DPP Host application. It may be used by the Micro to associate dialog descriptions with a particular DPP application. A list of IDs for all DPP Host applications is maintained along with the DPP Host Libraries. Prior to developing a DPP application, Host developers must request an ID to assign to their DPP application.

Control

A *control* is used either to display information or to obtain information from the user. A dialog contains one or more controls. For information about the type of controls that can be used in a dialog, refer to the `ADD-DIALOG Transaction`

9.1.3 List of DPP Terms, *continued*

Control ID

A *control ID* is used to identify a particular control in a dialog. Control ID values range from 1 to 63.

Dialog

A *dialog* is an outlined rectangle containing one or more controls. If the dialog has a title, the title will be displayed centered at the top edge of the rectangle. The size of a dialog must be such that it fits within the workspace size specified by the Micro. A dialog definition may be stored locally on the Micro and be reused across DPP sessions and across HMI sessions.

9.1.3 List of DPP Terms, *continued*

Dialog Definition

A *dialog definition* includes everything it would take for the Micro to display a dialog, including size; placement; number of controls; type, placement, and content of each control, etc.

For versions prior to Version 3, the dialog is defined only in terms of a grid consisting of rows and columns. (Controls are defined in terms of size and placement on that grid.) For Versions 3 and later, dialogs can also be defined in terms of hints. The Host defines what controls the dialog contains and where the controls are placed relative to each other. The Micro determines the exact size and placement of each control.

Dialog ID

A *dialog ID* is used to identify a particular dialog associated with an application. It is defined in the ADD-DIALOG packet used to create the dialog. Dialog ID values range from 1 to 255.

9.1.3 List of DPP Terms, *continued*

Workspace

A *workspace* is an area on the Micro's screen within which a dialog must be displayed. The Micro specifies its workspace size in terms of lines and columns in the response to the QUERY Request packet. The Micro is required to provide a workspace of at least 20 lines and 72 columns. The actual workspace it specifies may be larger.

If any dialogs in the DPP application exceed the workspace size specified by the Micro, the Host must either provide alternative dialogs that fit within the workspace or else restrict the user from entering the application.

9.1.4 Failure Reason Codes

The following table lists the reason codes returned when a general failure occurs in DPP.

Reason Code	Meaning
1	No memory
2	Invalid dialog identifier
3	Dialog visible
4	Dialog hidden
5	Invalid control identifier
6	Dialog error; invalid fields
7	DPP Failure

The following table lists the reason codes returned when a file transfer failure occurs in DPP.

9.1.4 Failure Reason Codes,*continued*

Reason Code	Meaning
0	Unspecified error
1	Micro does not support file transfers
2	User canceled the request
3	Insufficient resources
4	Invalid file ID
5	File error

9.1.5 Common Definitions

Each packet description contains record layouts that, in turn, contain various components in a specified order. The following lists the common component definitions used in packet layout descriptions throughout the chapter. (For more information on common definitions that apply to the entire HMI Protocol, refer to ***Chapter 1: Introduction***.)

```
DialogVersion =
  RECORD                    | 3 bytes
    minutes: BIT 0 .. 9;    | 0 .. 719; minutes in the day, units of 2 minutes
    day: BIT 10 .. 14;      | 1 .. 31
    month: BIT 19 .. 18;    | 1 .. 12
    year: BIT 19 .. 23;     | 1988 .. 2019; this value is offset for 1988
  END;
```

9.1.6 Documentation Conventions

The following documentation conventions are used throughout this chapter.

[#]	In some packet layouts, the comments show a number in brackets, such as **[24].** This number represents a suggested minimum presentation length of the field. It is an indication that the data associated with this field fits in a presentation space of the specified length. There is, however, no protocol restriction on the length of the data transmitted. Both sides must assume that the length of the actual data transmitted may exceed this suggested value.
OBSOLETE	Certain transactions, packets, or fields are listed in the document as being OBSOLETE. This means that these obsolete items should not be implemented in *clients* for the current version. The Host still must implement these items to support older clients. However, new clients must not use them. Obsolete items can be handled in other ways, either within or outside the existing protocol. Obsolete items will be deleted from the Protocol in a future version without notice.

9.2 Query Packets

Query Packets allow the Host to identify itself to the Micro. They are also used to obtain workspace size and a list of application dialogs that the Micro has remembered.

Upon entering DPP, the Micro must wait for either a QUERY or RESUME Request packet from the Host. The Host begins a DPP session by initiating a QUERY Transaction.

9.2.1 QUERY Transaction

The QUERY Transaction allows the Host to identify itself to the Micro and to obtain information from the Micro. It is the initial transaction of a DPP session.

QUERY Request (PTI = 0x20, Host → Micro)

Definition

The QUERY Request packet is sent by the Host to the Micro to identify the Host. The Micro responds with a QUERY Response packet. This request packet must be the first packet that the Host sends. It is sent only once.

9.2.1 QUERY Transaction,*continued*

Packet Layout

```
query_request =
  RECORD
    application_id: WORD;     | Must be unique
    use_title:  BIT 0 .. 1;   | See Packet Layout Note 1 (V3)
                              | 0 = no title
                              | 1 = title in caption bar
                              | 2 = big title in workarea
                              | 3 = title in caption bar and big title in workarea
    use_logo: BIT 2 .. 3;     | See Packet Layout Note 1 (V3)
                              | 0 = no logo
                              | 1 = centered
                              | 2 = stretchable
    reserved: BIT 4 .. 7;     | Must be zero; (V3)
    IF use_title > 0 THEN     | (V3)
      title: STRING;
    END IF;
    IF use_logo > 0 THEN      | (V3)
      image: DPPImage;
    END IF;
  END;
```

9.2.1 QUERY Transaction,*continued*

Packet Layout Notes

Note 1

The **use_title** and **use_logo** fields are ignored for nonframed DPP (CAP ID 0X0C).

9.2.1 QUERY Transaction,*continued*

QUERY Response (PTI = 0x21, Micro → Host)

Definition

The Query Response packet contains the size of the available work area and a list of dialogs for this application that the Micro has remembered from a previous session. It is sent in response to a QUERY Request packet.

Packet Layout

```
query_response =
  RECORD
    lines: BYTE;                    | Total lines of workarea (min=20)
    columns: BYTE;                  | Total columns of work area (min=72)
    count: BYTE;
    dialog: ARRAY [1 .. count] OF   | Dialogs remembered by the Micro from a
      RECORD                        | previous session
    id: BYTE;
    version: DialogVersion;         | See Common Definitions
      END;
  END;
```

9.3 Dialog Packets

Dialog Packets allow the Host to add, show, hide, update, or read the current contents of a specified dialog.

9.3.1 ADD-DIALOG Transaction

The ADD-DIALOG Transaction is used to create a dialog. It includes options to show the dialog and initiate an interact with the dialog.

ADD-DIALOG Request (PTI = 0x22, Host → Micro)

Definition

The ADD-DIALOG Request packet causes the Micro to create a specified dialog. Any existing dialog with the same identifier is superseded. Optionally, it may indicate that the dialog be shown and that the user be allowed to interact with it.

A dialog definition includes a list of controls. For information about specific control types, see the Control Definitions section which follows the Packet Notes for this packet.

If the dialog could not be created, the Micro responds with a SUCCESS or FAILURE Response packet.

9.3.1 ADD-DIALOG Transaction, *continued*

The FAILURE Response reason codes include:

1 no memory
3 the existing dialog is still visible
6 invalid fields

Packet Layout

```
add_dialog_request =
  RECORD
    dialog_id: BYTE;                 | Identifies which dialog
    version: DialogVersion;          | See Common Definitions section.
    title: STRING;
    box_height: BIT 0 .. 5;          | Range 3 .. min(workarea_height,
                                     | 63); see Packet Layout Note 1
    priority: BIT 6 .. 7;            | See Packet Layout Note 2
                                     | 0 = default
                                     | 1 = retain across DPP session
                                     | 2 = retain across HMI session
                                     | 3 = persistent object
    box_width: BIT 0 .. 6;           | Range 3 .. min(workarea_width,
                                     | 127); see Packet Layout Note 3
    reserved_1: BIT 7;               | Must be zero
    focus: BIT 0 .. 5;               | Control ID that gets the initial
                                     | "focus";  see Packet Layout Note 4
```

9.3.1 ADD-DIALOG Transaction, *continued*

Packet Layout, *continued*

```
    is_help: BIT 6;                  | Dialog is a help dialog
    has_help: BIT 7;                 | Help for dialog is available
    num_controls: BIT 0 .. 5;        | Range 1 .. 63;
    show_dialog: BIT 6;              | Same as the SHOW-DIALOG Request
    interact: BIT 7;                 | Same as the INTERACT Request.  If
                                     | set
                                     |    then show_dialog must be set
    IF show_dialog = 1 THEN          | See Packet Layout Note 5

      row: BYTE;                     | Location of the upper left corner
                                     | of the dialog relative to the
                                     | workarea
      column: BYTE;                  | Location of the upper left corner
                                     | of the dialog relative to the
                                     | workarea
    END IF;
```

9.3.1 ADD-DIALOG Transaction, *continued*

Packet Layout, *continued*

```
  controls: ARRAY [1 .. num_controls] OF
    RECORD
      kind: BIT 0 .. 3;              | Type of control
                                     | 0 = static text
                                     | 1 = edit field
                                     | 2 = check box
                                     | 3 = radio button
                                     | 4 = push button
                                     | 5 = group box
                                     | 6 = list box
                                     | 7 = text box
                                     | 8 = edit box
                                     | 9 = protected edit field
                                     | 10 = date edit field
      disabled: BIT 4;
      selected: BIT 5;               | For Checkbox, RadioButton, or
                                     | ListBox
      CASE kind OF
        WHEN 0 =>                    | Static field
          style: BIT 6 .. 7;         | 0 = left flush
                                     | 1 = right flush
                                     | 2 = centered
                                     | 3 = reserved
```

9.3.1 ADD-DIALOG Transaction, *continued*

Packet Layout, *continued*

```
        WHEN 1, 9, 10 =>             | Edit, protected edit, or date edit
                                     | field
          required: BIT 6;           | Value is required; see  Packet
                                     | Layout Note 6
          verifiable: BIT 7;         | Value can be verified by a Send-
                                     | Edit

        WHEN 3 =>                    | Radio button
          end_group: BIT 6;          | Denotes end of radio button group

        WHEN 4 =>                    | Push button
          default_button: BIT 6;     | Denotes default action;
                                     | cancel_button cannot be set
          cancel_button: BIT 7;      | Denotes cancel action;
                                     | default_button

        WHEN 6 =>                    | List box
          multiple_select: BIT 6;
          want_tab_stops: BIT 7;

        WHEN 7 =>                    | Text box
          text_object: BIT 6;
          want_tab_stops: BIT 7;
      END CASE;
```

9.3.1 ADD-DIALOG Transaction, *continued*

Packet Layout, *continued*

```
control_row: BIT 0 .. 4;                | Range 1 .. 31; see  Packet
                                        | Layout Note 7
control_ column: BIT 5 .. 11;           | Range 1 .. 127; see  Packet
                                        | Layout Note 7
height: BIT 12 .. 16;                   | Range 1 .. 31; see  Packet
                                        | Layout Note 7
width: BIT 17 .. 23;                    | Range 1 .. 127; see  Packet
                                        | Layout Note 7
value: STRING;                          | See Packet Layout Note 8
CASE kind OF
  WHEN 6, 7, 8 =>                       | List, text, or edit box
    total_items: XCOUNT;                | 0 if total_items is unknown
                                        | Total_items for edit box =
                                        | max lines; see  Packet Layout
                                        | Note 9
    num_items: BYTE;
    items: ARRAY [1 .. num_items] OF STRING;
    IF want_tab_stops THEN
        num_stops: BIT 0 .. 5;          | Range 0 .. 63
        num_titles: BIT 6 .. 7;         | Range 0 .. 3
        tab_stops: ARRAY [1 .. num_stops] OF BYTE;

        titles: ARRAY [1 .. num_titles] OF STRING;
    END IF;
```

9.3.1 ADD-DIALOG Transaction, *continued*

Packet Layout, *continued*

```
        IF selected = 1 THEN
            selections: BIT 0 .. total_items - 1;
        END IF;

      WHEN OTHERS =>
        NULL;
    END CASE;
  END;
END;
```

9.3.1 ADD-DIALOG Transaction, *continued*

Packet Layout Notes

Note 1

The **box_height** field includes the number of rows within the dialog plus the top and bottom borders. Therefore, the minimum value of **box_height** must be 3, allowing for at least one row plus the top and bottom borders. The maximum value of the **box_height** field is either 63 (packet limitation) or the number of lines in the workspace, whichever is less. (The height of the dialog cannot exceed the height of the workspace.)

Note 2

The **priority** field indicates to the client that this dialog should be disposed of at the end of the DPP session, retained across DPP sessions, retained across HMI sessions, or saved on the Micro for use in subsequent HMI sessions. This is a *suggestion* only; the Micro is not required to comply.

Note 3

The **box_width** field includes the number of columns within the dialog plus the left and right borders. Therefore, the minimum value of **box_width** must be 3, allowing for at least one column plus the left and right borders. The maximum value of the **box_width** field is either 127 (packet limitation) or the number of columns in the workspace, whichever is less. (The width of the dialog cannot exceed the width of the workspace.)

9.3.1 ADD-DIALOG Transaction, *continued*

Packet Layout Notes, *continued*

Note 4

The **focus** field indicates which control receives focus. Focus implies that the control is highlighted and becomes the active or current control within the dialog. The actual behavior will depend on the platform. Platforms that have no concept of focus will ignore this field.

Note 5

Dialog coordinates are offsets from the upper left corner of the work area.

assert:

0 <= column <= workarea_width - box_width
0 <= row <= workarea_height - box_height

Note 6

The **required** field indicates whether or not the associated edit field is required by the Host application. All required fields must be filled before the contents of the dialog is considered complete. The Micro may use this information to avoid sending an incomplete dialog contents to the Host. This is a *suggestion* only. The Micro may choose to ignore this information.

9.3.1 ADD-DIALOG Transaction, *continued*

Packet Layout Notes, *continued*

Note 7

Control coordinates are offsets from the upper left corner of the dialog.

assert:

1 <= control_row <= (box_width - width - 1)
1 <= control_column <= (box_height - height - 1)
width <= (box_width - 2)
height <= (box_height - 2)

Note 8

The meaning of the **value** field depends on the control type. For StaticText, EditField, CheckBox, RadioButton, PushButton, ProtectedEditField, and DateEditField controls, it is the contents of the control. For GroupBox, ListBox, TextBox, and EditBox controls, it is the title in the top edge of the specified rectangle.

Within the **value** field, the ampersand (&) prefix indicates quick key. To insert an actual ampersand, use two ampersands (&&).

9.3.1 ADD-DIALOG Transaction, *continued*

Packet Layout Notes, *continued*

Note 9

If selection set is specified, the value of **total_items** must be greater than 0 (length of list must be known).

assert:

selected = 1 and total_items > 0

Control Definitions

The control definitions are listed below.

NOTE: Although the examples show one way for displaying the corresponding control, others are possible. The Micro developer is responsible for determining the most appropriate and effective way to display each control based on the platform.

StaticText – *StaticText* is used to present information to the user and/or to prompt the user for information. It appears on the screen as an area one row high by **width** columns wide. The text contained in the **value** field displays flush-left by default. The **height** field is ignored. This control is not selectable.

➢**EXAMPLE** `File name:`

9.3.1 ADD-DIALOG Transaction, *continued*

Control Definitions, *continued*

EditField – An *EditField* is a one-line field in which the user can enter and/or edit text. It is used to gather textual information from the user. It appears on the screen as an area one row high by **width** columns wide. The text contained in the **value** field displays flush-left. The **height** field is ignored.

➢**EXAMPLE** `File name:________________`

CheckBox – A *CheckBox* represents an option with only two values, (e.g., **on/off** or **yes/no**). It appears on the screen as an area one row high by **width** columns wide. A check box followed by the text contained in the **value** field displays. Four columns are reserved for the check box. An *X* displays in the check box when the control is selected. The **height** field is ignored.

➢**EXAMPLE**

```
[x] Disconnect
 [ ] Show clock
```

9.3.1 ADD-DIALOG Transaction, *continued*

Control Definitions, *continued*

RadioButton – A *RadioButton* represents a mutually exclusive set of selections. It appears on the screen as an area one row high by **width** columns wide. A small circle followed by the text contained in the **value** field displays. Four columns are reserved for the circle. A dot displays in the circle when the control is selected. The **height** field is ignored.

When one control in the group is selected, the remaining controls in the group are deselected.

RadioButton controls always appear in a group. A RadioButton group must contain at least two RadioButton controls. In the last control, the **end_group** flag is set.

PushButton – A *PushButton* represents an action. By selecting a pushbutton, the user initiates the corresponding action. It appears on the screen as a rectangle three rows high by **width** columns wide. The text contained in the **value** field is used as a button label and displays centered in the rectangle.

If the **value** field is null and the **cancel_button** flag is set, the word *Cancel* is used. If the **cancel_button** flag is set, the button represents a CANCEL operation.

If the **value** field is null and the **default_button** flag is set, the word *OK* is used. If the **default_button** flag is set, the button should appear as a standard default button on that platform. For example, in a character-cell-grid-based DPP application, the outline of the rectangle is bold.

9.3.1 ADD-DIALOG Transaction, *continued*

Control Definitions, *continued*

(**RadioButton** *continued)* A dialog can have at most one cancel button and one default button. A single button cannot act as both cancel and default.

The **height** field is ignored. Selecting a PushButton control terminates interaction with the user.

➢EXAMPLE

```
+========+          +---------+
|   OK   |          | Cancel |
+========+          +---------+
```

GroupBox – A *GroupBox* is a rectangular frame with an optional title and is used to group related controls. It appears on the screen as an area **height** rows high by **width** columns wide. The text contained in the **value** field displays in the top edge of the rectangle.

NOTE: This control is not selectable and is used only to group other controls together visually.

➢EXAMPLE

```
+- Baud Rate -+
|  ( )  300   |
|  (*) 1200   |
|  ( ) 2400   |
+-------------+
```

9.3.1 ADD-DIALOG Transaction, *continued*

Control Definitions, *continued*

ListBox – A *ListBox* is a set of selection items. It appears on the screen as a rectangle **height** rows high by **width** columns wide. A ListBox is either *single-select* or *multi-select*. Items in a single-select ListBox are mutually exclusive. If the **multiple_select** flag is set, the user can select more than one item from the list. The text contained in the **value** field is displayed in the top edge of the rectangle. The **height** field includes the number of list items plus the top and bottom border. The contents of the list may be longer than can be displayed (**total_items > height - 2**).

A ListBox may have up to three **title** lines that display above the rectangle. These use the same tab stops as the ListBox items and are assumed to be a logical part of the list or text box for local printing.

```
 tttttttttttttttttttttttttttttt  \
 tttttttttttttttttttttttttttttt   | optional
 tttttttttttttttttttttttttttttt  /
+------------------------------+
| item 1                       |
| item 2                       |
| ...                          |
| item n                       |
+------------------------------+
```

9.3.1 ADD-DIALOG Transaction, *continued*

Control Definitions, *continued*

A ListBox item consists of one or more lines separated by line-feed characters in the item string. The number of lines in a single list item must be less than the number of lines visible in the list (so that more than one list item is visible at any given time.)

(maximum number lines per item) < **height - (num_titles + 2)**

➢EXAMPLE

```
+---Message Sections---+
|  Software Forums     |
|  Hardware Forums     |
|  Download a File     |
|  Upload a File       |
+----------------------+
```

9.3.1 ADD-DIALOG Transaction, *continued*

Control Definitions, *continued*

TextBox – A *TextBox* is used to display a multiple-line text field that a user can read but not edit. It appears on the screen as a rectangle **height** rows high by **width** columns wide. The text contained in the **value** field displays in the top edge of the rectangle. The rectangle contains a list of strings for display. The list may be longer than can be displayed (**total_items > height - 2**). This control is not selectable. It can have up to three **title** lines that display above the rectangle. (For more information on title lines, see the `ListBox control definition`)

EditBox – An *EditBox* is used for multiple-line text input. It appears on the screen as a rectangle **height** rows high by **width** columns wide. The text contained in the **value** field displays in the top edge of the rectangle. The number of lines to be edited may be longer than can be displayed (**total_items > height - 2**). It can have up to three **title** lines that display above the rectangle. (For more information on title lines, see the `ListBox control definition`)

ProtectedEditField – A *ProtectedEditField* is similar to an EditField but is displayed like a password field in which the value is not visible.

DateEditField – A *DateEditField* is similar to an EditField but is used only to display a date. A DateEditField control value is always sent in the following format:

yyyymmdd

The minimum width of a DateEditField control is 8.

9.3.2 ADD-ADF-DIALOG Transaction

The ADD-ADF-DIALOG Transaction is used to create an ADF dialog. It includes options to show the dialog and initiate an interact with the dialog.

NOTE: This transaction was introduced in Version 3.

ADD-ADF-DIALOG Request (PTI = 0x34, Host → Micro)

Definition

The ADD-ADF-DIALOG Request packet causes the Micro to create the specified dialog, superseding an existing dialog with the same identifier about which the Micro knew. Optionally, the dialog may be shown to and interact with the user.

If the dialog could not be created, the Micro responds with a SUCCESS or FAILURE Response packet.

The FAILURE Response reason codes include:

1	no memory
3	the existing dialog is still visible
6	invalid fields

9.3.2 ADD-ADF-DIALOG Transaction*continued*

NOTE: The ADD-ADF-DIALOG Request has a variety of common types that are shared among different controls. These are defined following the packet layout in a separate section called *ADD-ADF-DIALOG Common Types.*

Packet Layout

```
add_adf_dialog_request =
  RECORD
    dialog_id: BYTE;              | Which dialog
    version: DialogVersion;
    title: STRING;
    focus: BYTE;                  | Control id that gets the initial
                                  | "focus"
    priority: BIT 0 .. 1;         | 0 = default
                                  | 1 = retain across DPP session
                                  | 2 = retain across HMI session
                                  | 3 = persistent object
    is_help: BIT 2;               | Dialog is a "help" dialog
    has_help: BIT 3;              | Help for dialog is available
    reserved_1: BIT 4 .. 5;       | Must be zero
    show_dialog: BIT 6;           | Same as the SHOW-DIALOG request
    interact: BIT 7;              | Same as the INTERACT request. If
                                  | set
                                  | show_dialog must be set.
```

9.3.2 ADD-ADF-DIALOG Transaction*continued*

Packet Layout, *continued*

```
    IF show_dialog = 1 THEN
      row: BYTE;                      | Location of the upper left corner
                                      | of the dialog relative to the
                                      | workarea
      column: BYTE;                   | Location of the upper left corner
                                      | of the dialog relative to the
                                      | workarea
    END IF;
    children: BYTE;
    child: ARRAY [1 .. children] OF
      RECORD
        type: BYTE;
        CASE type OF
          WHEN 0 => item: StaticText;
          WHEN 1 => item: EditField;
          WHEN 2 => item: CheckBox;
          WHEN 3 => item: RadioButton;
          WHEN 4 => item: PushButton;
          WHEN 5 => item: Group;
          WHEN 6 => item: ListBox;
          WHEN 7 => item: TextBox;
          WHEN 8 => item: EditBox;
```

9.3.2 ADD-ADF-DIALOG Transaction*continued*

Packet Layout, *continued*

```
          WHEN 9 => item: ProtectedEditField;
          WHEN 10 => item: DateEditField;
          WHEN 11 => item: VirtualGroup;
          WHEN 12 => item: DropList;
          WHEN 13 => item: Picture;
          WHEN 14 => item: PictureButton;
        END CASE;
      END;
  END;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types

The ADD-ADD-DIALOG common types are listed below.

```
Control =
  RECORD
    id: BYTE;
    components: WORD;                 bit 0 = reserved
                                      bit 1 = horizontal position hint
                                      bit 2 = vertical position hint
                                      bit 3 = width relative 1
                                      bit 4 = width relative 2
                                      bit 5 = min chars
                                      bit 6 = max chars
                                      bit 7 = height relative 1
                                      bit 8 = height relative 2
                                      bit 9 = min lines
                                      bit 10 = max lines
                                      bit 11 = font
                                      bit 12 = initializer ID
                                      bit 13 .. 15 = reserved
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
    title: STRING;                    May be null
                                      Use newline (0x0A) to separate
                                      lines
                                      On controls that support tab stops,
                                      use tab (0x09)
                                      To separate tab-fields in the title
                                      field, the title field follows the
                                      tabbing associated with the rest of
                                      the control

    flags: BYTE;                      bit 0 = disabled
                                      bit 1 = selected
                                      StaticText
                                         bit 2 = right justify text
                                         bit 3 = center text
                                      EditField
                                         bit 2 = value is required
                                         bit 3 = value can be verified
                                      PushButton
                                          bit 2 = default button
                                          bit 3 = cancel button
                                      ListBox
                                          bit 2 = multiple select
                                          bit 3 = want tab stops
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
                                      TextBox
                                          bit 3 = want tab stops
                                      DropList
                                          bit 2 = reserved
                                          bit 3 = want tab stops
                                      Picture
                                          bit 2 = elastic (stretch/shrink
                                      to fit)
                                             if not elastic, then
                                      scrolled
                                      PictureButton
                                         bit 2 = default button
                                         bit 3 = cancel button
                                         bit 4.. 5 = title alignment
                                             0 = bottom
                                             1 = top
                                             2 = right
                                             3 = left
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
    IF components[1] = 1 THEN
      h_pos_hint_type: BYTE;          0 = no hint
                                      1 = left justified
                                      2 = right justified
                                      3 = left of
                                      4 = right of
                                      5 = horizontal center
      h_pos_hint_rel_to: BYTE;        Relative to sibling (0 .. 63)
                                      relative to parent (255)
    END IF;
    IF components[2] = 1 THEN
      v_pos_hint_type: BYTE;          0 = no hint
                                      1 = top justified
                                      2 = bottom justified
                                      3 = above
                                      4 = below
                                      5 = vertical center
      v_pos_hint_rel_to: BYTE;        Relative to sibling (0 .. 63)
                                      Relative to parent (255)
    END IF;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
    IF components[3] = 1 THEN
      width_hint_percent: BYTE;
      width_hint_rel1: BYTE;
      width_hint_rel2: BYTE IF components[4] = 1 ;
    END IF;
    min_chars: XCOUNT IF components[5] = 1;
    max_chars: XCOUNT IF components[6] = 1;
    IF components[7] == 1 THEN
      height_hint_percent: BYTE;
      height_hint_rel1: BYTE;
      height_hint_rel2: BYTE IF components[8] = 1;
    END IF;
    min_lines: XCOUNT IF components[9] == 1;
    max_lines: XCOUNT IF components[10] = 1;
    font: Font IF components[11] = 1;
    initializer_ID: WORD IF components[12] = 1;         | See Packet Layout
                                                        | Note 1
  END;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
StaticText =
  RECORD
    common: Control;                  | Title is contents of control
                                      | Newline (0x0A) is line break
                                      | character
  END;
EditField =
  RECORD
    common: Control;                  | Contents are delivered in title
                                      | string.
  END;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
CheckBox =
  RECORD
    common: Control;
  END;

RadioButton =
  RECORD
    common: Control;
  END;

PushButton =
  RECORD
    common: Control;
  END;

BoxInfo =
  RECORD
    total_items: XCOUNT;             | 0 if total_items is unknown
    num_items: BYTE;
    item: ARRAY [1 .. num_items] OF STRING;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
    IF common.flags[3] = 1 THEN      | Want tab stops
      num_stops: BIT 0 .. 5;
      reserved: BIT 6 .. 7;          | Must be zero

      tab_stops: ARRAY [1 .. num_stops] OF XCOUNT;
                                     | Units correspond to one
                                     | Average character width for this
                                     | control
    END IF;
    IF common.flags[1] = 1 THEN
      selections: BIT 0 .. total_items - 1;      | total_items > 0
    END IF;
  END;

ListBox =
  RECORD
    common: Control;
    info: BoxInfo;
  END;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
TextBox =
  RECORD
    common: Control;
    format: BYTE;                      | 0 = plain text
                                       | 1 = TO/ETO/CHT
                                       | 2 = HTML
                                       | 3 .. 255 = reserved
    info: BoxInfo;
  END;

EditBox =
  RECORD
    common: Control;
    info: BoxInfo;
  END;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
ProtectedEditField =
  RECORD
    common: Control;                   | Contents are delivered in title
                                       | string
  END;

DateEditField =
  RECORD
    common: Control;                   | Contents are delivered in title
                                       | string
  END;

DropList =
  RECORD
    common: Control;                   | Title is ignored
    info: BoxInfo;
  END;

Picture =
  RECORD
    common: Control;
    image: DPPIMage;                   | 40-bit image reference
  END;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
PictureButton =
  RECORD
    common: Control;
    image: DPPImage;                   | 40-bit image reference
  END;

VirtualGroup =
  RECORD
    item: Group;
  END;

Group =
  RECORD
    common: Control;
    components: WORD;                  | bit 0 = horizontal position hint
                                       | bit 1 = vertical position hint
                                       | bit 2 = width relative 1
                                       | bit 3 = width relative 2
                                       | bit 4 = min chars
                                       | bit 5 = max chars
                                       | bit 6 = height relative 1
                                       | bit 7 = height relative 2
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
                                       | bit 8 = min lines
                                       | bit 9 = max lines
                                       | bit 10 = rows
                                       | bit 11 = columns
                                       | bit 12 .. 15 = reserved
    IF components[0] = 1 THEN
      h_pos_hint_type: BYTE;           | 0 = no hint
                                       | 1 = left justified
                                       | 2 = right justified
                                       | 3 = left of
                                       | 4 = right of
                                       | 5 = horizontal center
      h_pos_hint_rel_to: BYTE;
    END IF;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
    IF components[1] = 1 THEN
      v_pos_hint_type: BYTE;           | 0 = no hint
                                       | 1 = top justified
                                       | 2 = bottom justified
                                       | 3 = above
                                       | 4 = below
                                       | 5 = vertical center
      v_pos_hint_rel_to: WORD;
    END IF;

    IF components[2] = 1 THEN
      width_hint_percent: BYTE;
      width_hint_rel1: BYTE;
      width_hint_rel2: BYTE IF components[3] = 1 ;
    END IF;

    IF components[4] = 1 THEN
      min_chars: XCOUNT;
      max_chars: XCOUNT IF components[5] = 1;
    END IF;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
    IF components[6] == 1 THEN
      height_hint_percent: BYTE;
      height_hint_rel1: BYTE;
      height_hint_rel2: BYTE IF components[7] = 1;
    END IF;
    IF components[8] == 1 THEN
      min_lines: XCOUNT;
      max_lines: XCOUNT IF components[9] = 1;
    END IF;

    IF components[10] = 1 XOR components[11] = 1 THEN
      rows: XCOUNT IF components[10] = 1;
      columns: XCOUNT IF components[11] = 1;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
      matrix_hints: WORD;              | bit 0 = row order
                                       | bit 1 = column order
                                       | bit 2 = left justify
                                       | bit 3 = right justify
                                       | bit 4 = center pairs left
                                       | bit 5 = center pairs right
                                       | bit 6 = horizontal center
                                       | bit 7 = top justify
                                       | bit 8 = bottom justify
                                       | bit 9 = vertical center
                                       | bit 10 = horizontal evenly spaced
                                       | bit 11 = vertical evenly spaced
                                       | bit 12 = normal width
                                       | bit 13 = all same width
                                       | bit 14 = normal height
                                       | bit 15 = all same height
    END IF;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

ADD-ADF-DIALOG Common Types, *continued*

```
    children: BYTE;
    child: ARRAY [1 .. children] OF
      RECORD
        type: BYTE;
        CASE type OF
          WHEN 0 => item: StaticText;
          WHEN 1 => item: EditField;
          WHEN 2 => item: CheckBox;
          WHEN 3 => item: RadioButton;
          WHEN 4 => item: PushButton;
          WHEN 5 => item: Group;
          WHEN 6 => item: ListBox;
          WHEN 7 => item: TextBox;
          WHEN 8 => item: EditBox;
          WHEN 9 => item: ProtectedEditField;
          WHEN 10 => item: DateEditField;
          WHEN 11 => item: VirtualGroup;
          WHEN 12 => item: DropList;
          WHEN 13 => item: Picture;
          WHEN 14 => item: PictureButton;
        END CASE;
      END;
  END;
```

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

Packet Layout Notes

Note 1

Each **StaticText, EditField, CheckBox, RadioButton, ListBox, TextBox, EditBox, ProtectedEditField, DateEditField** and **DropList** control may have associated with it an optional default initialization ID. These IDs will be assigned sequentially as needed. When used, the Micro application can use them to initialize the contents of a field prior to displaying it to the end-user. These values would supercede initialization values provided by the host if both exist.

Possible initialization codes are:

0 - None
1 - User's Name
2 - User's Phone Number
3 - User's Street Address
4 - User's City
5 - User's State/Province
6 - User's Country
7 - User's Postal code.
8 - Signup Serial Number
9 - Signup Agreement Number
10 - User's Time Zone

9.3.2 ADD-ADF-DIALOG Transaction, *continued*

Packet Layout Notes, *continued*

An additional side behavior that would be reasonable for the Micro to implement is to record the contents of the pre-defined edit field initialization values such that it would be remembered for future references. A side benefit of this approach is that even if the Micro does not explicitly know about the particular initialization value, it can still benefit from it in future references to it.

As long as the Host is universally consistent about its use of these initialization values, the Host can use and extend them at will, without requiring the Micro to be checked for version support, etc. If the Micro has explicit knowledge of an ID (e.g., User's Name) it will use it; otherwise, the ID will be ignored. In subsequent uses of this ID, however, the Micro should retain the last sent value.

It is the responsibility of the Micro to record and associate the initializer values. If the value is inconsistent with the control, the Micro should ignore the initialization request. For example, if the Host tries to initialize a **DateEditField** with an ID of "4" (User's City), this should be ignored.

9.3.3 SHOW-DIALOG Transaction

The SHOW-DIALOG Transaction is used to show a dialog. It includes an option to initiate an interact with the dialog.

It assumes that the dialog exists and is not visible. Therefore, it must follow either an ADD-DIALOG or a QUERY Response packet indicating that the Micro knows about the dialog. Once a dialog exists, it can be shown multiple times. However, because SHOW-DIALOG assumes the dialog is not visible, a HIDE-DIALOG packet must occur between SHOW-DIALOG packets.

SHOW-DIALOG Request (PTI = 0x23, Host → Micro)

Definition

The SHOW-DIALOG Request packet causes the Micro to display the specified dialog. It optionally causes the Micro to interact with the user.

If the Micro does not know about or cannot display the dialog, it responds with a SUCCESS or a FAILURE Response packet. The FAILURE Response reason codes include:

2	invalid dialog identifier (This failure can occur if the Micro had to dispose of the dialog because of memory limitations)
3	the dialog is already visible

9.3.3 SHOW-DIALOG Transaction, *continued*

Packet Layout

```
show_dialog_request =
  RECORD
    dialog_id: BYTE;              | Identifies which dialog
    row: BIT 0 .. 6;              | Row at which upper left corner
                                  | should be displayed; see  Packet
                                  | Layout Note 1
    interact: BIT 7;              | Same as the INTERACT Request
    column: BYTE;                 | Column at which upper left corner
                                  | should be displayed; see  Packet
                                  | Layout Note 1
  END;
```

Packet Layout Notes

Note 1

The **row** and **column** fields refer to the location of the upper left corner of the dialog relative to the workarea

assert:

0 <= column <= workarea_width - box_width

0 <= row <= workarea_height - box_height

9.3.4 HIDE-DIALOG Transaction

The HIDE-DIALOG Transaction is used to hide a dialog. HIDE-DIALOG assumes that the dialog exists and is visible and therefore can only follow either a SHOW-DIALOG or an ADD-DIALOG Response packet that has the show option turned on.

HIDE-DIALOG Request (PTI = 0x24, Host → Micro)

Definition

The HIDE-DIALOG Request packet causes the Micro to hide the specified dialog.

If the Micro does not know about the dialog or if the dialog is hidden, it responds with a SUCCESS or a FAILURE Response packet.

The FAILURE Response reason codes include:

2 invalid dialog identifier

4 dialog is not visible

Packet Layout Notes

```
hide_dialog_request =
  RECORD
    dialog_id: BYTE;                    | Identifies which dialog
  END;
```

9.3.5 UPDATE-DIALOG Transaction

The UPDATE-DIALOG Transaction is used to update the contents of a dialog. It assumes that a dialog exists and therefore can only follow either an ADD-DIALOG or QUERY Response packet indicating that the Micro knows about the dialog. A dialog may be either visible or not visible when an update occurs.

UPDATE-DIALOG Request (PTI = 0x2B, Host → Micro)

Definition

The UPDATE-DIALOG Request packet causes the Micro to update the contents of the specified controls of the given dialog. It requires that the dialog exist. The dialog may or may not be visible.

If the Micro does not know about the dialog or if the contents of the packet are invalid, it responds with a SUCCESS or FAILURE Response packet. If the update fails, no control values are modified.

The FAILURE Response reason code is:

2 invalid dialog identifier

9.3.5 UPDATE-DIALOG Transaction, *continued*

Packet Layout

```
update_dialog_request =
  RECORD
    dialog_id: BYTE;                  | Identifies which dialog
    count: BIT 0 .. 5;
    reserved_1: BIT 6 .. 7;           | Must be zero
    focus: BIT 0 .. 5;                | Control ID that gets the new
                                      | "focus"; see Packet Layout Note 1
    reserved_2: BIT 6 .. 7;           | Must be zero
    control: ARRAY [1 .. count] OF
      RECORD
        id: BIT 0 .. 5;               | Identifies which control CheckBox,
                                      | RadioButton,
        selected: BIT 6;              | ListBox, TextBox, or EditBox
        disabled: BIT 7;
        IF
        value: STRING;                | Same meaning as the value field in
                                      | the add_dialog_request; see  Packet
                                      | Layout Note 2
        num_items: BYTE;
```

9.3.5 UPDATE-DIALOG Transaction, *continued*

Packet Layout, *continued*

```
        IF num_items > 0 THEN         | ListBox, TextBox, or EditBox
            total_items: XCOUNT       | 0 if total_items unknown; See
                                      | Packet Layout Note 3
            IF selected THEN          | Multi-select ListBox; assume that
                                      | if num_item > 0, then selected is
                                      | set only if ListBox is multi-select
                selection: BIT 0 .. total_items - 1;

                                      | See Packet Layout Note 4
            ELSE
                items: ARRAY [1 .. num_items] OF STRING;
            END IF;
        ELSE
            IF not selected THEN
                NULL;                 | Clear the list; version 2 and above
            END IF;
        END IF;
      END;
  END;
```

9.3.5 UPDATE-DIALOG Transaction, *continued*

Packet Layout Notes

Note 1

The **focus** field indicates which control receives focus. Focus implies that the control is highlighted and becomes the active or current control within the dialog. The actual behavior will depend on the platform. Platforms that have no concept of focus will ignore this field.

Note 2

If the **value** field is null, it is ignored except in the case of EditField , ProtectedEditField, and DateEditField controls. In these cases, a null **value** field is an indication to clear the field.

Note 3

The **total_items** field must be greater than zero for multiple-select ListBox.

Note 4

In Version 2 and above, If the control is a Listbox , TextBox, or EditBox and **num_items** = **0**, then:

- If the **selected** bit is set, then leave the box contents alone.
- If the **selected** bit is not set, then clear the box contents.

9.3.6 READ-DIALOG Transaction

The READ-DIALOG Transaction is used to obtain the current contents of a specified dialog on the Micro.

This Transaction assumes that the specified dialog exists. Therefore, it must follow either an ADD-DIALOG or QUERY Response packet indicating that the Micro knows about the dialog. A dialog may be either visible or not visible during a read.

READ-DIALOG Request (PTI = 0x2D, Host → Micro)

Definition

The READ-DIALOG Request packet causes the Micro to send an INTERACT Response packet or a FAILURE Response packet if the object does not exist. (For more information on the `INTERACT Response packet`) The INTERACT Response packet must contain:

- the contents of each edit field and edit box
- the state of each checkbox
- each selected radio button
- the selection(s) of each listbox

9.3.6 READ-DIALOG Transaction, *continued*

Packet Layout

```
read_dialog_request =
  RECORD
    dialog_id: BYTE;                    | Identifies which dialog
  END;
```

9.4 Interact Packets

Interact Packets allow the user to interact with a dialog, request additional dialog-related information from the Host, send the dialog back to the Host, and receive verification from the Host as to whether the dialog values sent back were valid.

During an interact, the Host must wait for the Micro to respond. If the Micro cannot proceed with the interact, it will immediately fail. Within the interact, the Micro may initiate an EXPAND-LIST or SEND-EDIT Request. Alternatively the Micro may terminate an interact via a CANCEL, SEND-HELP, RESUME, TERMINATE, or DISCONNECT Request packet.

If the Host chooses to terminate the interact at any point, it may do so by sending a CANCEL Request packet, in which case the Micro must respond with a CANCEL packet.

9.4.1 INTERACT Transaction

The INTERACT Transaction causes the Micro to interact with the user. It consists of the INTERACT Request packet, the INTERACT Response packet, and the RESEND Request packet. The INTERACT Response sends the contents of the dialog back to the Host. The RESEND Request packet informs the Micro that all dialog values were good and that the INTERACT is complete, or that certain specified ones were bad and the INTERACT should continue.

9.4.1 INTERACT Transaction,*continued*

INTERACT Request (PTI = 0x25, Host → Micro)

Definition

The INTERACT Request packet causes the Micro to interact with the user.

If the Micro does not know about the dialog or the dialog is not visible, it responds immediately with a FAILURE Response packet. Otherwise, the user is allowed to interact with the dialog and the host shall wait for a:

- CANCEL Response, or
- INTERACT Response, or
- SEND-HELP Request, or
- EXPAND-LIST Request, or
- SEND-EDIT Request, or
- RESUME, TERMINATE, or DISCONNECT Request.

If at any point the Host decides to terminate the INTERACT Transaction, it may do so by sending a CANCEL packet, in which case the Micro will respond with a CANCEL, which completes the INTERACT Transaction.

9.4.1 INTERACT Transaction,*continued*

If the user selects a push button, the Micro sends:

- a CANCEL Response if the PushButton control has the **cancel** flag set, which completes the INTERACT Transaction. (For more information on the CANCEL Response packet, refer to **Chapter 2: Common Packets**.)
- an INTERACT Response containing a subset of the requested values. The Host responds with a RESEND Request packet. A zero count completes the INTERACT transaction. A positive count indicates which of the requested values were incorrect and causes the Micro to continue interacting with the user.

9.4.1 INTERACT Transaction,*continued*

Optionally, the Micro may send:

- A SEND-HELP Request, which completes the INTERACT transaction
- An EXPAND-LIST Request to extend a scrolled ListBox or TextBox control. The Host responds with an EXPAND-LIST Response and the Micro continues interacting with the user.
- A SEND-EDIT Request to send and verify a single edit field. The Host responds with either SUCCESS or FAILURE Response packet and the Micro continues interacting with the user.
- A RESUME, TERMINATE or DISCONNECT Request which terminates the DPP session. (For more information on the RESUME, TERMINATE, and DISCONNECT Response packets, refer to **Chapter 2: Common Packets**.)

The FAILURE Response reason codes include:

2	invalid dialog identifier
4	dialog is hidden

9.4.1 INTERACT Transaction,*continued*

Packet Layout

```
interact_request =
  RECORD
    dialog_id: BYTE;                    | Identifies which dialog
  END;
```

9.4.1 INTERACT Transaction,*continued*

INTERACT Response (PTI = 0x26, Micro → Host)

Definition

The INTERACT Response is used to send some or all of the contents of a dialog from the Micro to the Host. It is sent in response to an INTERACT Request packet or a READ-DIALOG Request packet. Controls may be sent in any order. A PushButton control in the list of Control IDs means that this is a response to an INTERACT Request packet and indicates which button activated the response. One exception to this is when a text control contains an embedded link. In this case, if the user clicks on a link, the interact is terminated and the selected link is delivered in this packet; also, no pushbutton ID is sent in this response.

9.4.1 INTERACT Transaction,*continued*

Packet Layout

```
dialog_response =
  RECORD
    count: BYTE;
    control: ARRAY [1 .. count] OF
      RECORD
        id: BIT 0 .. 5;               | Identifies which control
        kind: BIT 6 ..7;              | 0 = other
                                      | 1 = selected CheckBox
                                      | 2 = EditField/EditBox
                                      | 3 = ListBox
                                      | 4 = TextBox (embedded HotLink)
        CASE kind OF
          WHEN 0, 1 =>
            NULL;

          WHEN 2 =>                   | Edit field or box
            lines: XCOUNT;            | Always 1 for EditField
            lines: ARRAY [1 .. lines] OF STRING;

          WHEN 3 =>                   | ListBox
            items: XCOUNT;
```

9.4.1 INTERACT Transaction,*continued*

Packet Layout, *continued*

```
            IF items > 1 THEN         | Selected ListBox items
                selection: BIT 0 .. items - 1;
            ELSE
                selection: XCOUNT;    | If 0, then nothing selected
            END IF;
          WHEN 4 =>                   | TextBox
            selection: STRING;        | Selected HotLink for this text
                                      | control
        END CASE;
      END;
  END;
```

9.4.1 INTERACT Transaction,*continued*

Packet Layout Notes

Note 1

If **items** < **total_items**, then unspecified items are assumed to be unselected.

Note 2

If ListBox is single-select, then **items** = 1

If ListBox is multi-select, then

- If selection set is available, then **items** = **total_items**

  else **items** = current number of items in the ListBox
- If a selection set is available then **items = total_items**

  else **items** = current number of items in the ListBox

9.4.1 INTERACT Transaction,*continued*

Packet Layout Notes, *continued*

Additional Notes: Keeping the Host and Micro in Sync

When the user interacts with a dialog box and changes the values in the dialog, the Host is unaware of these changes until an INTERACT Response packet is sent. Thus, if the Micro sends a CANCEL or a SEND-HELP Response packet in the middle of an interact, the interact may be interrupted with the Host and Micro out of sync In other words, the Host and Micro may disagree on the dialog box contents).

Therefore, if the Micro sends a CANCEL or a SEND-HELP Response packet in the middle of an interact, and the dialog box is not hidden by the Host, any values the user changes during the interact remain visibly changed and are sent to the Host in the next INTERACT Response packet if one is sent.

If the Micro sends a CANCEL or a SEND-HELP Response packet in the middle of an interact and the dialog box is hidden by the Host, any values the user changes during the interact are reset such that the Host and Micro agree on the contents of the dialog.

Generally if the Micro sends a CANCEL Response packet, the Host responds with a HIDE-DIALOG; if the Micro sends a SEND-HELP Response packet, the Host displays one or more help dialogs and then initiates a new interact with the original dialog, which should still be visible.

9.4.1 INTERACT Transaction,*continued*

The following assumptions apply:

- When a DPP dialog box is shown, the visible contents of the dialog and the Host image of the dialog are identical.
- When a dialog box is hidden, every value that has been changed by the user but not transmitted to the Host is reset to the value of the control from the perspective of the Host. This can be any of the following:
  - the initial value
  - the last value sent by the Host as part of an UPDATE packet
  - the last value entered by the user and sent to the Host in an INTERACT Response packet or a SEND-EDIT Request packet.
- The INTERACT Response packet must contain all values that the user has changed since the dialog was shown but which have not yet been transmitted to the Host via an INTERACT or a SEND-EDIT Response packet. The INTERACT Response packet may, but does not necessarily, contain values that have not been changed by the user.

9.4.1 INTERACT Transaction,*continued*

RESEND Request (PTI = 0x27, Host → Micro)

Definition

The RESEND Request packet is used to inform the Micro that either the preceding INTERACT Response packet contained correct values, in which case the interact is complete or some number of values were incorrect, in which case the interact is to continue. The Host sends it following an INTERACT Response packet at the end of an INTERACT transaction.

If the interact is complete, the RESEND Request packet may also be used to inform the Micro to hide the current dialog.

9.4.1 INTERACT Transaction,*continued*

Packet Layout

```
resend_request =
  RECORD
    count: BIT 0 .. 5;                  | Range 0 .. 63; see  Packet Layout
                                        | Note 1
    reserved: BIT 6;                    | Must be zero
    hide: BIT 7;                        | Same as the HIDE-DIALOG Request
    control: ARRAY [1 .. count] OF
      RECORD
        id: BYTE;                       | Identifies which control
        reason: STRING;                 | Indicates what's wrong
      END;
  END;
```

Packet Layout Notes

Note 1

The **count** field is the number of incorrect values returned in the INTERACT Response packet. If **count** is 0, the interact is complete. If **count** is not 0, the interact continues and the **hide** flag is ignored.

9.4.2 SEND-HELP Transaction

The SEND-HELP Transaction is used to request help from the Host during an interact.

SEND-HELP Request (PTI = 0x2C, Micro → Host)

Definition

The SEND-HELP Request packet is sent by the Micro to request help about the specified control or the current dialog in general. It terminates the interaction of the current dialog. This packet can be sent only during an interact.

Packet Layout

```
send_help_request =
  RECORD
    id: BYTE;                   | Identifies which control.  (A value of zero
                                | denotes the dialog itself)
  END;
```

9.4.3 EXPAND-LIST Transaction

The EXPAND-LIST Transaction is used to obtain additional ListBox or TextBox items.

EXPAND-LIST Request (PTI = 0x28, Micro → Host)

Definition

The EXPAND-LIST Request packet causes the Host to send an EXPAND-LIST Response packet containing additional **ListBox** or **TextBox** items. This packet can be sent only during an interact.

Packet Layout

```
expand_list_request =
  RECORD
    id: BYTE;                         | Which ListBox or TextBox
    count: BYTE;                      | Number of items wanted
    start_pos: XCOUNT;                | Starting position; one-based
  END;
```

9.4.3 EXPAND-LIST Transaction,*continued*

EXPAND-LIST Response (PTI = 0x29, Host → Micro)

Definition

The EXPAND-LIST Response packet contains a list of items to be added to a ListBox or TextBox control. It is sent in response to an EXPAND-LIST Request packet.

Packet Layout

```
expand_list_response =
  RECORD
    count: BYTE;                      | 0 = end of list

    item: ARRAY [1 .. count] OF STRING;
  END;
```

9.4.4 SEND-EDIT Transaction

The SEND-EDIT Transaction allows the Micro to verify the value of a specified edit field in the current dialog.

SEND-EDIT Request (PTI = 0x2A, Micro → Host)

Definition

The SEND-EDIT Request packet causes the Host to accept or reject a single EditField control. The Host sends a SUCCESS Response packet if the edit field is correct or a FAILURE Response packet otherwise. If the edit field is accepted, the new value replaces the old value on the Host.

NOTE: This request can only be sent while in the "interact" state, prior to an INTERACT Response packet.

Packet Layout

```
send_edit_request =
  RECORD
    ID: BYTE;                 | Identifies which EditField, ProtectedEditField, or
                              | DateEditField control
    value: STRING;
  END;
```

9.4.5 SEND-EDITBOX Transaction

The SEND-EDITBOX Transaction allows the Micro to inform the Host that an EditBox control will be sent from the Micro.

NOTE: This transaction was introduced in Version 3.

SEND-EDITBOX Request (PTI = 0x35, Micro → Host)

Definition

The SEND-EDITBOX Request packet informs the Host to prepare to receive the contents of an EditBox control from the Micro.

The Host responds with either a SUCCESS Response packet or a FAILURE Response packet. If the response is a SUCCESS Response packet, then the Micro sends one or more DATA Response packets that contain the EditBox control.

A DATA Response packet with a data field length of zero is considered an *end of data* condition.

NOTE: This request can only be sent while in the "interact" state, prior to an INTERACT Response packet.

9.4.5 SEND-EDITBOX Transaction, *continued*

Packet Layout

```
send_editbox_request =
  RECORD
    id: BYTE;                    | Identifies which EditBox control
    size: DWORD;                 | Total size in bytes
  END;
```

9.4.6 UPDATE-BOX Transaction

The UPDATE-BOX Transaction allows the Micro to verify the value of a specified edit field in the current dialog.

NOTE: This transaction was introduced in Version 3.

UPDATE-BOX Request (PTI = 0x36, Host → Micro)

Definition

The UPDATE-BOX Request packet causes the Micro to update the specified Box control of the given dialog. The Micro response with either a FAILURE response packet or a SUCCESS response packet. If the response is a SUCCESS Response packet, then the Host sends one or more DATA Response packets that contains the Box Control.

A DATA Response packet with a data field length of zero is considered an *end of data* condition.

To initialize a large Box, the Host should leave the Box empty in the ADD-DIALOG or ADD-ADF-DIALOG Request packet and then use the UPDATE-BOX Request packet to completely fill the Box Control.

9.4.6 UPDATE-BOX Transaction, *continued*

Packet Layout

```
update_box_request =
  RECORD
    dialog_id: BYTE;                          | Identifies which dialog
    control_id: BYTE;                         | Identifies which Box control
    size: DWORD;                              | Total size in bytes
  END;
```

9.5 File Packets

File packets allow for the transfer of files from the Host to the Micro and from the Micro to the Host.

9.5.1 SEND-FILENAME Transaction

The SEND-FILENAME Transaction is used to obtain permission from the Micro to transfer a file to the Micro.

SEND-FILENAME Request (PTI = 0x2E, Host → Micro)

Definition

The SEND-FILENAME Request packet is used to obtain permission from the Micro to transfer a file to the Micro. It contains information about the file and a file reference ID used to identify the file during the actual transfer.

The Micro responds with a SUCCESS Response packet indicating it wants to accept the file or a FAILURE Response packet indicating the Micro does not want to transfer files.

9.5.1 SEND-FILENAME Transaction, *continued*

The FAILURE Response reason codes include:

0 unspecified

1 Micro does not support file transfers

2 User canceled the request

3 insufficient resources

NOTE: The Host must wait at least two minutes for the response from the Micro.

9.5.1 SEND-FILENAME Transaction, *continued*

Packet Layout

```
send_filename_request =
  RECORD
    reference: WORD;               | Identifies the file for the SEND-
                                   | FILE Request.  Value must be unique
                                   | for the DPP session.
    options: BYTE;                 | bit 0 = graphic file is
                                   | "interactive"
                                   | bit 1 = graphic file is "dynamic"
                                   | (OBSOLETE)
    file_name: STRING;             | default file name
    file_type: FileType;
    file_size: COUNT24;
  END;
```

Packet Layout Notes

The **interactive** flag is a hint from the Host that the GIF file is intended to be viewed.

9.5.2 SEND-FILE Transaction

The SEND-FILE Transaction is used to transfer a file to the Micro.

SEND-FILE Request (PTI = 0x2F, Host → Micro)

Definition

The SEND-FILE Request packet is sent to the Micro requesting transfer of the specified file.

The Micro responds with a SEND-FILE Response packet. The Host then sends the contents of the specified file to the Micro in one or more DATA Response packets.

A DATA Response packet with a data field length of zero is considered an *end of data* condition. The Host then waits for a SUCCESS Response packet from the Micro to indicate that all DATA packets have been consumed.

If the file reference is invalid, the Micro responds with a FAILURE Response packet.

After the successful completion of the SEND-FILE, the associated file reference becomes invalid and cannot be reused during the DPP session. If a write error, receive error, or a user cancel occurs during data transfer, the Micro may send a CANCEL Response packet to the Host to terminate the transfer.

9.5.2 SEND-FILE Transaction,*continued*

Packet Layout

```
send_file_request =
  RECORD
    reference: WORD;              | Same value as in the SEND-FILENAME
                                  | Request
    options: WORD:                | Bit 0 = view file upon completion,
                                  | see Packet Layout Note 1
                                  | Bits 1 .. 15 reserved; must be zero
  END;
```

9.5.2 SEND-FILE Transaction,*continued*

SEND-FILE Response (PTI = 0x30, Micro → Host)

Definition

The SEND-FILE Response packet is used to inform the Host that the Micro is ready to receive a file. It is sent in response to a SEND-FILE Request packet.

Packet Layout

```
send_file_response =
  RECORD
    max_bytes: WORD;              | Max number of bytes per DATA
                                  | Response
    packet (64 .. 4093)
    start_pos: COUNT24;           | Starting byte position; one-based
    GIF_capabilities: STRING;       (OBSOLETE)
  END;
```

9.5.2 SEND-FILE Transaction,*continued*

Packet Layout Note 1

The client should make a reasonable attempt to view this file upon completion of the transfer using local viewing capability selected by the file_type, file_name or as determined by the Micro. For example, DOS machines would use the file extension to determine how to view the file.

9.5.3 GET-FILENAME Transaction

The GET-FILENAME Transaction is used to obtain the name of a file to be transferred from the Micro to the Host.

GET-FILENAME Request (PTI = 0x31, Host → Micro)

Definition

The GET-FILENAME Request packet causes the Micro to send a GET-FILENAME Response packet or a FAILURE Response packet if the Micro does not want to transfer a file. It contains a default name and description along with a file reference ID used to identify the file during the actual transfer.

NOTE: The Host must wait for at least two minutes for the GET-FILENAME Response packet before timing out.

9.5.3 GET-FILENAME Transaction*,continued*

Packet Layout

```
get_filename_request =
  RECORD
    reference: WORD;                        | Identifies the file for the RECEIVE-
                                            | FILE Request.
                                            | This value must be unique for the
                                            | DPP session.
    name: STRING;                           | [24] default filename
    subject: STRING;                        | [39]
  END;
```

9.5.3 GET-FILENAME Transaction*,continued*

GET-FILENAME Response (PTI = 0x32, Micro → Host)

Definition

The GET-FILENAME Response contains a name, size, and type information related to a file that is intended to be transferred to the Host.

Packet Layout

```
get_filename_response =
  RECORD
    name: STRING;                        | [24]
    reference: WORD;                     | Same value as in the GET-FILENAME
                                         | Request
    file_type: FileType;
    file_size: COUNT24;
  END;
```

9.5.4 RECEIVE-FILE Transaction

The RECEIVE-FILE Transaction is used to send file contents to the Host.

RECEIVE-FILE Request (PTI = 0x33, Host → Micro)

Definition

The RECEIVE-FILE Request packet causes the Micro to send the contents of the specified file to the Host in one or more DATA Response packets. A DATA Response packet with a data field length of zero is considered an *end of data* condition.

If the Micro cannot send the file, it returns a FAILURE Response packet.

After the RECEIVE-FILE Request packet completes successfully, the associated file reference becomes invalid and cannot be reused during the DPP session. If a read error, send error, or user cancel occurs during data transfer, the Micro may send a CANCEL Response packet to the Host to terminate the transfer.

Packet Layout

```
receive_file_request =
  RECORD
    reference: WORD;                     |Same value as in the GET-FILENAME
                                         |Response
  END;
```

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Chapter

14

Automated Software Alternatives

In this chapter...

Typical features of automated software
Programs for IBM and compatibles
Apple Software
Commodore Amiga Automation
Atari Software
Programs for Other Systems

Steve Sneed has spent many hours trying to make CompuServe easier for the rest of us. Now he has committed his thoughts to software, creating OzCIS, one of the exciting new breeds of automated terminal programs. Is it hot? It was downloaded nearly 10,000 times in the first five months it was available in the IBM Network (GO IBMNET) data libraries. That qualifies the bright, fast, colorful public domain program as a major hit on-line.

"I didn't push it or anything," Sneed told a writer with *CompuServe Magazine* recently. "It's just developed its own life. I'm still somewhat amazed."

OzCIS began evolving two years ago, when Sneed was an assistant sysop in IBMNET. "When I began maintaining the library catalogs for the forums, I realized I needed some tools to assist me." A professional programmer with TurboPower Software, Sneed, who lives in Colorado Springs, Colorado, opted to write his own tools. Later he added features as he thought of them—such as a message board manager—until the software started looking like a full-fledged navigation program.

Sneed had not planned to release his program publicly, but word sp on-line from friends and co-workers about how the software combin friendly interface with the speed and flexibility of legendary existing a mated programs like TapCIS and Autosig. More and more, Sneed was b urged to "cut it loose" and release OzCIS for public use. Some suggeste make it a commercial venture. However, Sneed said he had neither the nor the inclination to start a company or to run a shareware operation, s — to many people's surprise — he released OzCIS for free. He uploaded it t libraries of the IBM Communications Forum (GO IBMCOM) and sat bac watch the world beat a path to the door. Within weeks, OzCIS was alread international program, being shared by CompuServe users in Australia, Germ and throughout Europe.

Many may have been first attracted by the software's name. Was the refer to "Oz," as in "The Wizard of . . ."? (No, actually — technically — it prob ought to be "ohhhs," as in the Ozark Mountains of north central Arkan where Sneed grew up.) Then rave reviews by the program's first wave of attracted even more fans.

These days, it is a big job supporting a major system like OzCIS — Sn spends several hours a day answering questions on the IBMCOM mess board. But a group of volunteers, calling themselves Team Oz, has assem around him to help out with fielding questions (some 400 questions a w are posted) and with future developments.

"This is what makes it worthwhile to me," Sneed told the magazine, "h the users are coming in, spending their time, effort and connect dollar help other users. That's really made CompuServe what it is today, that sp of people helping people."

Software Overview

Whether you start out using the CompuServe Information Manager or a eral third-party communications program, chances are once you h CompuServe for a while you will notice you have settled into a iting the same key forums and features and pushing some of the sa in the same sequence each time you log on. Computers are mas forming routines that are tedious to humans. So, why couldn't y computer where to go on CompuServe and what to do *before* you l send it on its merry way?

Well, the fact is, you can.

If you are using CIM, you already have an introduction to such a in how the program handles CompuServe Mail, for instance, ena write messages, place them in your Out-Basket, then go on-line a them all at once. This handy feature is just the tip of the iceberg wh to what is available in automated terminal programs these days. Th ternatives this chapter describes can be customized to automate large por- ons of your CompuServe use. Automated programs are available for most latforms; some are commercial, some are shareware, and some are freeware ublic domain). Most are available for downloading on CompuServe or can e ordered through the system.

pical Features

A fundamental characteristic of most automated programs is that they are tended to work *only* with CompuServe. They are customized to work inti- mately with the system; the automation works by anticipating CompuServe rompts. So in most cases, the program will not work with your local computer ulletin board system or another information service.

What can automated programs do? Here are some typical features basic to most all of them:

- Capture messages to read and compose replies off-line.
- Capture mail to read and compose replies off-line.
- Save messages and mail, with a searching mechanism.
- Keep an address book of other users and their IDs.
- Build forum library directories for browsing off-line.
- Store preferences for several forums so that several may be visited during a single logon.

Addition...

Many of these programs also have:

- Scripts to help you automatically join a forum.
- Multiple session configuration files. This feature is helpful if you have more than one CompuServe ID, want to specify different download paths for different sessions, or regularly visit certain collections of forums.
- Support for gateway services, such as ZiffNet.
- Support for the CompuServe B+ protocol for uploading and downloading.
- A viewer or decoder for Graphics Interchange Format (GIF), the standard for platform-independent graphic image exchange.
- Support non-English languages (German, French, Spanish, etc.).

Since some automated programs do not have all these features, you should hop for the right program to meet your needs. This chapter is the place to egin. After you have read these sections, visit forums that support your spe- ific hardware and talk to other subscribers to see what they are using to communicate. When a new program comes on-line, many forum users become he first test audience.

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Log On to the Information Age

This is the ultimate user's guide to CompuServe, the world's most popular commercial information network. Whether you're a first-time user, a business subscriber, a free-lance hacker, or an infotainment hobbyist, CompuServe insiders Bowen and Peyton will guide you through the many corridors of the system while helping you to keep an eye on your purse strings. Screen-by-screen instructions map out the entire service, including full coverage of CompuServe Information Manager and third-party communications programs, such as TapCIS and Navigator.

How to Get the Most Out of CompuServe, 5th Edition, is the only guide you'll need to access this incredible information resource efficiently. Included are instructions and guidelines for:

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- Using CompuServe's fabulous electronic mail services
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- Shopping in CompuServe's fabulous Electronic Mall
- Exploring CompuServe's many hardware, software, and special interest forums
- Downloading free programs from the system
- Using the powerful I-Quest gateway to worldwide databases
- Taking part in on-line conferences
- Accessing thousands of articles from magazines and newspapers

Charles Bowen and David Peyton are two of the foremost experts on CompuServe Information Service. Recognized as authorities in the field, they both write regularly for *CompuServe Magazine* and are authors of the best-selling previous editions of this book, as well as of *The Complete Electronic Bulletin Board Starter Kit* and *CompuServe Information Manager: The Complete Sourcebook*. In addition, Bowen is the author of the best-selling and critically acclaimed *CompuServe from A to Z*.

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DPP-Build Program Usage Guide
for Version 2

6/26/92

Preface

Over a year ago, I was asked to create a design tool for creating dialogs for use by DPP. Since that time, several requests have been made to add various enhancements to DPP-BUILD.

Originally, BUILD was just simply a design tool to provide an idea of how dialogs would appear in a host application. I have been surprised at the number of suggestions for enhancements and additions to the program since its original release, and pleased to discover that it was and continues to be a beneficial design tool for developers.

With this latest version of BUILD, the overall design and coding process will now become more streamlined than ever. I am pleased to say that this latest version of BUILD contains numerous enhancements, among them support for the latest version of the DPP protocol (including a tab stop entry screen), extra field input areas for assisting in more automated source code generation, as well as an application PROTOTYPING facility.

I would like to especially thank Tom Mlay for his continued enthusiasm and interest in BUILD and DPPGEN, as well as for his beta testing assistance and for the perserverance to make sure that these project enhancement got on my official docket. I also wish to officially thank Rita Grell for her feedback in BUILD's initial stages of development, as well as all other programmers who have contributed to BUILD through their input / feedback / enhancement ideas.

Please feel free to direct questions on DPP-BUILD to me at IPX code SDA. Questions for DPPGEN, the host source code generator programmer, should be directed to T.MLAY.

Scott

Introduction

BUILD.EXE is for designing dialogs for use by HMI products under CompuServe's Dialog Presentation Protocol (DPP). This program allows for host developers to design DPP application dialogs, actually VIEW the end result of the dialog's appearance, generate SOURCE CODE for use by the host,
and now PROTOTYPE entire host applications using a single design platform.

Creating a Dialog

The control that is currently active is shown by a blinking cursor in the upper left corner of the control. To switch to a different control,
either click on the control of interest once using the left mouse button, or press the TAB key. (SHIFT+TAB will also work to move the highlight, but in the reverse order.)

New controls are created by using the Control pull-down menu. Simply select
the control type of interest, and press ENTER. The control will be created
near the center of the dialog. You may then use either the keyboard arrow
keys or the mouse to move the control.

Removing a control

A control may be removed from a dialog by either 1 of 3 methods:

1. Use the Remove Control option under the Edit pull-down menu.
2. Press CTRL+R
3. Double click the control using the RIGHT mouse button.

Styling a control

Styling a control refers to changing the way a control acts and/or appears.
A control may be styled using 1 of 3 methods:

1. Use the Style option under the Edit pull-down menu.
2. Press CTRL+S
3. Double click the control using the LEFT mouse button.

A style dialog box will then be presented showing the options pertaining to the control you selected. Use the ampersand (&) character before a letter to cause that letter to appear highlighted and act as a "quick-key" within the dialog.

Changing the order of controls within a dialog

The item labelled ORDER CONTROLS located under the Options pull-down menu is used to define the order of traversal for the interior controls of a dialog. The Order Controls dialog presents a listing of all the controls within the dialog in their currently defined order.

To change the order:

1. Move the menu highlight to the control you wish to move.
2. Press the MARK push-button. A marking indicator will appear next to the control you have marked that you are about to move.

   NOTE: If the MARK push button is currently highlighted, you may also simply double click the left mouse button within the menu to mark an item.

   The MARK push-button will now change to say MOVE.
3. Move the menu highlight to the location where you wish to insert the marked control.
4. Press the MOVE push-button.

To cancel moving a control after is has been marked, move the menu highlight to the marked item and press the MOVE button.

Changing the focus control and radio button groups

To change the FOCUS control, use the order controls dialog and select a menu item. Press the FOCUS push-button to set the control that the dialog will use as the starting point for the cursor. An asterisk in the menu designates the focus control.

Select a radio button control and press the GROUP button to define the end of a radio button group. The start of the radio button group is determined automatically by the BUILD program. The letter 'G' will appear to designate the end of a radio button group.

A group of radio buttons defines a collection in which only 1 radio button may be selected at any given time. (These buttons are then said to be mutually exclusive.)

Testing a dialog

Under the Options pull-down menu, you may choose the Test Dialog item. This will allow you to test the functionality, traversal order, and true appearance of a dialog under design. As a safety precaution, a copy of the current dialog design will be saved in a file called WORK.DLG.

*** NEVER USE THE FILENAME WORK.DLG FOR YOUR OWN DIALOG CREATIONS! ***

Changing Colors in BUILD

The CIM.CF2 file distributed with BUILD contains color definitions different from the default colors used by CIM Version 2.0. If you wish to use CIM's standard colors, simply delete the CIM.CF2 file. If you wish to use your own color scheme, you may customize the colors used by the BUILD program by using the latest CIMUTIL program in the color setting mode.

****

* NEW FEATURES in Version 2 of DPP-BUILD *

****

Project Level Development Support

A new pull-down menu has been added to DPP-BUILD called Project. The Project pull-down menu items allow for you to define the contents of a given project. You may either define a new project, load an existing project file (*.PRJ), or view and/or change the current project definitions.

All changes made to a project are automatically saved out to disk whenever a push-button labelled SAVE is pressed.

Press the push-button labelled DIALOG LIST allows for changing the list of dialog filenames that encompass this project.

When you create a new project, BUILD will automatically define the list of dialogs for that project as being all filenames ending with the extension DLG found in the current sub-directory. Please note that the file WORK.DLG is not included in this default starting list.

As you create and SAVE new dialog (*.DLG) files, the name of the dialog file is automatically added to the current project. In addition, as you create new dialogs, certain default characteristics of that dialog's style are initialized to that of the project defaults. (See the section titled STYLING DIALOGS below for more information.)

Project files are always written using an extension of PRJ, regardless of the extension actually submitted. This is a safety mechanism so that DLG files will never become confused with PRJ files.

A recommended method or organizing projects for DPP-BUILD is to simply dedicate a separate sub-directory for each project.

Styling Dialogs

The background dialog itself may also be styled just like any other interior dialog control. The method to start styling is the same as for any control:

1. Use the Style option under the Edit pull-down menu.
2. Press CTRL+S
3. Double click the control using the LEFT mouse button. In this particular case, double click on a space within the dialog that is not being used by another control item.

A slightly different style dialog will now appear. The parameters that may be specified at this level are primarily to assist in source code generation through the DPPGEN program.

Tab Stop Support

For list and text boxes, DPP-BUILD now allows for specifying tab stops. To specify tabs, you must first STYLE the control. Next, press the ADD ITEMS push-button. Third, press the TABS push button. You will be presented with a dialog that shows a "ruler".

To set a tab stop, move the cursor to the location of interest and press either the space bar or the enter key. A tab may also be cleared in this fashion.

The SET TAB INTERVAL button is used to set a tab stop every n spaces, where n is a number. The CLEAR ALL push-button simply clears all tab stops currently set.

You may use the Title Entry edit area in order to enter up to 3 additional title lines for the list or text box. These titles, as well as the true appearance of tabs settings in the list and text boxes, will be shown to you when you use the Test Dialog item under the Options pull-down menu.

Multi-line Listbox Items

It is now possible to have multiple physical lines dedicated for each logical line in a listbox. To do so, you must enter the linefeed character code manually when specifying the contents of the listbox. You may enter a linefeed character by first pressing and holding down the ALT key, type 010 on the numeric keypad, and then release ALT.

Note that the first line in the listbox defines the number of physical lines dedicated for every logical line in the listbox.

Prototyping!

Version 2 of DPP-BUILD will now allow developers to get an ever better idea of how there applications will appear by allowing them to actually view several dialogs in a sequence via. the new project prototype facility located under the Special pull-down menu.

The prototyper allows for the developer to associate a mapping between pressing a push-button, and what dialog will appear as a result. To use the prototyper, a project file (*.PRJ) must have a section added to it by an external text editor. The section name that needs to be added is called [Prototype], and is to be followed by items denoting the starting dialog and the "rules" for mapping push buttons to dialogs.

The following example project file will be used to demonstrate how the prototyper works:

```
[Dialogs]
1=First.DLG
2=Second.DLG
3=Third.DLG

[Vars]
AppID=Application_Number_1
HelpLibName=Generic_Dialog_Help
NumDlgs=3

[Callbacks]
Accept=
Verify=
Expand=
Validate=
Help=
Exit=

[Prototype]
Start=1
1=2,0
2=3,0
3=1,0
```

In this simple example, each of the 3 dialogs has 2 push-buttons, an OK button and a CANCEL button, in that order. The first dialog shown during prototyping is defined by "Start=1", which tells BUILD that Dialog Number 1, (FIRST.DLG), will be the starting point.

Whenever a push button is pressed within a dialog, BUILD first determines if it is the 1st, 2nd, 3rd, 4th, etc. push button in the dialog. Then, BUILD looks up the corresponding position in the [Prototype] section for the current dialog. This number is the dialog that will be shown next.

For example, if the developer presses the 1st push button defined in FIRST.DLG, BUILD looks at the definition:

```
"1=2,0"
```

BUILD then looks at the 1st number after the equal sign, which is 2. This means that pressing the first push-button is a mapping to dialog #2, also known as SECOND.DLG in this example. BUILD then would show SECOND.DLG.

Continuing the example:

If the 1st push button defined in SECOND.DLG is pressed, THIRD.DLG is shown.
If the 1st push button defined in THIRD.DLG is pressed, FIRST.DLG is shown.
If the 1st push button defined in FIRST.DLG is pressed, SECOND.DLG is shown.

. .
. .
. .

and so on...

In this example, if the 2nd push button were pressed in any of the dialogs being prototyped, this is translated to the number zero, which simply ends the prototyping session. Pressing the ESC key, or pressing a push button that does not map to a dialog number, will also end the prototyping session.

Of course, the actual mappings provided in the [Prototype] section can be as simple or as complex as you wish.

Miscellaneous Enhancements

- Explicit support has been added for protected fields. They are defined as a new control type found under the Control pull-down menu.

- Date Fields have also been added to the Control pull-down menu.

- The following fields have been added to the style control dialog to allow for specifying additional items useful for source code generation:

    - Variable and Constant names for all control types
    - Maximum number of items for list, text, and edit boxes
    - Current number of items for list, text, and edit boxes
    - A list of Format masks for edit fields

- A mechanism has been added to allowing spawning DPPGEN within BUILD automatically. DPPGEN is the program used to generate source code from a DLG file definition.

    NOTE: Final implementation of this feature is pending an upgrade to DPPGEN to accommodate the new DLG file format.

- You may now specify project level default values for dialog callback functions.

- Project level support allows for keeping track of dialogs belonging to the same application.

- A DOS Shell has been added to BUILD.

- ID bytes have been added to the DLG format.

- You may now specifically designate that a dialog is a HELP dialog. You may do so by STYLING the dialog and checking the appropriate option. (See the section "Styling Dialogs" above for more information.)

- Static text may now be defined as 1 of 3 alignments: Left, Right, or Center.

- BUILD now confirms the overwriting of existing DLG and PRJ files if they are not the current filename.

- PRJ files are written in ascii text INI format

- BUILD will automatically detect older DLG file formats, and notify you of the need to convert the file

- The length of a static text field may now be specified

- The meaning of double clicking with the left and right mouse buttons has been switched to be more consistent with other design tools similar to DPP-BUILD.

DLG File Format ! = Denotes new items since original DLG format
----

****
DLG Data File Definition
****

Flags: (one or more of the following)

Disabled	0x0001	
Selected	0x0002	
Required	0x0004	
Verifiable	0x0008	
Default_Button	0x0010	
Cancel_Button	0x0020	
Multiple_Select	0x0040	
End_Group	0x0080	
Left_Align	0x0100	; presently applies to static text ONLY !
Right_Align	0x0200	; presently applies to static text ONLY !
Center_Align	0x0400	; presently applies to static text ONLY !
Text_Object	0x0800	; presently applies to textboxes ONLY !

Type: (one and only one of the following)

DialogBorder	0	
StaticText	1	
EditField	2	
CheckBox	3	
RadioButton	4	
PushButton	5	
GroupBox	6	
ListBox	7	
TextBox	8	
EditBox	9	
ProtectedField	10	!
DateField	11	!

```
DLG FILE FORMAT:

UBYTE           Major_Revision          /* 255 = Signup, 254 = Build */
          !
UBYTE           Minor_Revision          /* 0 */
!
UBYTE            Number_Of_Controls     /* # of interior controls */
UBYTE       Focus_Control
UBYTE           Dialog_Version                                 !

UBYTE           Dialog_Flags                                   !
               Bit 0:  Auto_Hide           /* 1 = yes, 0 = no */   !
               Bit 1:  Auto_Destroy        /* 1 = yes, 0 = no */   !
               Bit 2:  Auto_Display_Results    /* 1 = yes, 0 = no */   !
               Bit 3:  Is_Help_Dialog          /* 1 = yes, 0 = no */   !

PString (35)    CALLBACK FUNCTION NAME:  Accept                !
PString (35)    CALLBACK FUNCTION NAME:  Verify
!
PString (35)    CALLBACK FUNCTION NAME:  Expand
!
PString (35)    CALLBACK FUNCTION NAME:  Validate              !
PString (35)    CALLBACK FUNCTION NAME:  Help                  !
PString (35)    CALLBACK FUNCTION NAME:  Exit                  !

Control_List     array [0..Number_Of_Controls] of
                       /* 0 denotes the background dialog box itself */
     {
     UBYTE             Row
     UBYTE             Col
     UBYTE             Height
     UBYTE             Width
     UBYTE             Type        /* see DEFINTIONS */
     UWORD             Flags       /* see DEFINTIONS */
     UBYTE             Title_Len
     PString    (Title_Len) Title

     UBYTE             Var_Len                                 !
     PString    (Title_Len) Variable_Name                        !

     UBYTE                  Constant_Len                       !
     PString (Constant_Len)  Constant_Name
!
```

```
      switch (Type)
          {
          case ListBox or TextBox or EditBox:
            {
           UWORD            Current_Num_Items                 !
           UWORD            Max_Num_Items                          !

           UWORD       Item_Count

           ListItems           array [1..Item_Count] of
               {
               UBYTE              Len
               PString(Len)       List_Item_Text
               }

           if (Type = ListBox or Type = TextBox)                   !
               {                                        !
               UBYTE   Num_Tab_Stops             ;range 0 to 63    !
                                                        !
               Tabs           array [1..Num_Tab_Stops] of
!
                    {                                   !
                   UBYTE                Tab_Position
          !
                    }                                   !
                                                        !
               UBYTE   Num_Titles                       !
                                                        !
               Titles           array [1..Num_Titles] of              !
                 {                                      !
                 UBYTE                  Title_Len                  !
                 PSTRING (Title_Len)    Title                   !
                 }                                      !
                }                                       !
            }                                           !

          case EditField:                                     !
            {                                           !
           UWORD       Format_Count                           !
                                                        !
           Format_Masks            array [1..Format_Count] of      !
               {                                        !
               UBYTE              Len                         !
               PString(Len)       Format_Mask                 !
               }                                        !
            }                                           !
          }
      }
```

NOTE: In the old DLG formats, a protected field could be defined as an EDITFIELD with flag type 0x0100. This type of control must be converted to a control type of PROTECTEDFIELD under the new DLG format.

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Week of 14-Jul-96 thru 20-Jul-96

* * * Category: Electronic Mall * * *

		<---Free Usage--->		<---Billable Usage--->						
Name	Description	Unique ppns	HH:MM	#Runs	Unique ppns	HH:MM	Time$	$ Surchg.	Adjusted Due IP	Net Revenue
DI.GM	! 800 Flowers, Gifts & More/DIS		4:05	900		38:35	441.98			441.98
FD.GM	! 800 Flowers, Gifts & More/FDF		0:00	4		0:12	2.45			2.45
OE.GM	! 800 Flowers, Gifts & More/ORD		0:00	2		0:11	4.18			4.18
DI.ACU	! Accutrade		1:04	468		12:28	137.25			137.25
OE.ACU	! Accutrade		0:00	2		0:03	.59			.59
DI.AIF	! Adventures in Food/DIS		0:00	189		8:35	99.89			99.89
FD.AIF	! Adventures in Food/FDF		0:00	1		0:01	.11			.11
DI.DB	! Advisor Publications Store		0:02	217		4:16	49.53			49.53
DI.AF	! Air France		0:01	155		7:42	87.24			87.24
DI.AQP	! Airline Svcs Unlimited - Private/DI		0:00	9		0:08	1.49			1.49
OE.AQP	! Airline Svcs Unlimited - Private/OR		0:00	1		0:02	.21			.21
DI.ASU	! Airline Svcs Unlimited - Public/DIS		0:02	218		1:00	9.83			9.83
DI.AIC	! Allstate Insurance		0:00	2		0:02	.22			.22
DI.AC	! Americana Clothing/DIS		0:20	353		13:56	164.91			164.91
DI.AS	! As Seen on CompuServeCD		0:00	92		0:59	11.29			11.29
DI.CDA	! Atlantic Canada		0:02	222		10:58	127.97			127.97
DI.AB	! Audio Book Club/DIS		0:00	15		0:02	.22			.22
DI.AM	! Auto Magazine Store		0:01	395		6:40	75.82			75.82
DI.ATE	! Auto-By-Tel		0:40	2119		45:34	505.25			505.25
DI.AV	! AutoVantage Online/DIS		0:17	1624		19:35	221.05			221.05
DI.AI	! Automobile Information		1:31	1250		65:50	739.26			739.26
OE.AI	! Automobile Information/ORD		0:00	4		0:34	7.25			7.25
DI.AOS	! Aviation Mall Store		0:09	416		9:30	109.60			109.60
DI.ATN	! Axion Tech Network		0:03	24		0:58	10.31			10.31
DI.CDQ	! BMG Existing Member Store/DIS		0:27	2224		57:25	645.45			645.45
FD.CDQ	! BMG Existing Member Store/FDF		0:00	59		1:16	14.25			14.25
OE.CDQ	! BMG Existing Member Store/ORD		0:00	11		1:02	13.22			13.22
DI.BFC	! Bassett Furniture Co/DIS		0:05	125		4:20	53.48			53.48
OE.BFC	! Bassett Furniture Co/ORD		0:00	1		0:01	.21			.21
DI.BEL	! BellSouth Cellular Corp.		0:00	5		0:07	2.49			2.49
DI.BOT	! Books on Tape/DIS		1:23	1767		76:31	898.81			898.81
OE.BOT	! Books on Tape/ORD		0:00	5		0:01	.21			.21
DI.BH	! Breton Harbor Baskets/DIS		0:10	140		9:53	109.74			109.74
CS1585	Broderbund Pay-per-view Download		0:00	20	20	0:00		163.35	122.51	40.84
DI.BB	! Broderbund Software		0:34	1724		38:11	434.03			434.03
DI.BR	! Brooks Brothers		0:39	524		18:30	207.67			207.67
FD.BR	! Brooks Brothers/Feedback		0:00	1		0:01	.21			.21
OE.BR	! Brooks Brothers/Order		0:00	2		0:12	2.56			2.56
DI.INC	! Business Incorporating Guide		0:03	77		3:53	40.62			40.62
FD.INC	! Business Incorporating Guides/Feedb		0:00	7		0:38	7.07			7.07
DI.PD	! CUC/Dinner On Us		0:13	330		14:10	165.02			165.02
DI.CVP	! Caribbean Planner - BATES		0:08	86		6:50	78.86			78.86
CS3328	ChaseDirect		0:00	3	3	0:03	.05			.05
DI.CC	! Chef's Catalog		3:18	1396		43:32	501.36			501.36
DI.CNI	! Christian Interactive		0:17	234		9:49	107.99			107.99

Week of 14-Jul-96 thru 20-Jul-96

		<---Free Usage--->		<--------Billable Usage-------->						
Name	Description	Unique ppns	HH:MM	#Runs	Unique ppns	HH:MM	Time$	$ Surchg.	Adjusted Due IP	Net Revenue
DI.COF	! Coffee Anyone???		0:14	149		7:37	86.63			86.63
OE.COF	! Coffee Anyone???/ORD		0:00	2		0:05	.75			.75
DI.CHH	! Columbia House		1:31	124		11:15	118.27			118.27
DI.CHB	! Columbia House Audio Books		0:00	68		1:33	14.97			14.97
DI.CHF	! Columbia House Audio Books (Part 2)		0:00	27		2:34	31.78			31.78
DI.CHC	! Columbia House CD-ROM Direct		0:00	213		8:42	99.03			99.03
DI.CHM	! Columbia House Music Collections		0:03	192		4:06	44.59			44.59
DI.CH	! Columbia House Records/DIS		0:55	1287		56:09	648.33			648.33
DI.CTC	! Columbia House TV Classics		0:00	115		4:23	51.44			51.44
DI.CD	! Compact Disc Club		0:04	1932		15:17	179.15			179.15
DI.CDF	! Compact Disc Club Nonmembers/DIS		0:28	82		15:07	157.35			157.35
OE.CDF	! Compact Disc Club Nonmembers/ORD		0:00	1		0:04	.85			.85
DI.PVS	! CompuServe VISA Preferred/DIS		0:00	91		2:36	29.52			29.52
DI.CVS	! CompuServe VISA Public/DIS		0:00	1		0:01	.21			.21
DI.CE	! Computer Express		0:19	2252		141:56	1606.00			1606.00
FD.CE	! Computer Express - Feedbacks		0:00	3		0:04	.64			.64
OE.CE	! Computer Express Orders		0:00	8		0:24	6.28			6.28
DI.CL	! Contact Lens Supply		0:00	159		7:00	81.80			81.80
FD.CL	! Contact Lens Supply/FDF		0:00	1		0:01	.21			.21
OE.CL	! Contact Lens Supply/ORD		0:00	2		0:06	.96			.96
DI.CIC	! Continental Insurance Company/DIS		0:00	68		1:10	14.00			14.00
DI.CYB	! Cyber Shopping Network		0:00	321		10:29	115.36			115.36
DI.CW	! CyberWarehouse		0:05	872		32:52	363.76			363.76
OE.CW	! Cyberwarehouse		0:00	1		0:01	.21			.21
DI.DA	! Dalco Computer Store/DIS		0:01	532		23:00	252.52			252.52
FD.DA	! Dalco Computer Store/FDF		0:00	5		0:08	1.70			1.70
OE.DA	! Dalco Computer Store/ORD		0:00	1		0:08	1.71			1.71
DI.DBM	! Danbury Mint Store		0:01	50		2:15	27.98			27.98
DI.DD	! Desktop Direct/DIS		0:05	287		3:14	39.67			39.67
DI.DFQ	! Detroit Free Press - Books/DIS		0:00	9		0:18	3.29			3.29
DI.DFM	! Detroit Free Press/DIS		0:01	98		2:01	24.81			24.81
DI.DTC	! Directory of Catalogs		0:49	2313		81:12	931.21			931.21
FD.DTC	! Directory of Catalogs/FDF		0:00	11		0:18	3.84			3.84
OE.DTC	! Directory of Catalogs/ORD		0:00	27		0:33	7.05			7.05
DI.DSI	! Discount Shopping		0:00	115		0:12	1.69			1.69
DI.EAP	! EAP Mall Discounts/DIS		0:00	1		0:01	.38			.38
DI.ESV	! EServ Travel		0:00	101		1:49	22.84			22.84
DI.EMN	! Electronic Mall News		0:07	1041		22:16	247.01			247.01
DI.ENT	! Entrepreneur Magazine/DIS		0:12	160		3:56	45.14			45.14
DI.EP	! Epic MegaGames/DIS		0:18	519		77:49	686.27			686.27
FD.EP	! Epic MegaGames/FDF		0:00	1		0:02	.21			.21
DI.FTD	! FTD Florists/DIS		0:07	349		20:29	218.51			218.51
OE.FTD	! FTD Florists/ORD		0:00	3		0:26	6.68			6.68
DI.FEX	! Fed Ex (36 Bit)		0:04	227		1:43	20.15			20.15
CS2158	Federal Express Enhanced Menu	12	1:33	204	138	12:11	13.07			13.07
DI.FFS	! Florida Fruit Shipping		0:04	43		1:52	22.89			22.89
DI.FS	! Flower Stop		0:01	224		10:00	159.00			159.00
DI.FMX	! Ford Motor Company		0:06	24		0:01	.38			.38
DI.FSH	! Ford Shareholder		0:01			0:00				
DI.FM	! Fortune Magazine Store/DIS		0:00	157		2:05	22.26			22.26

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Week of 14-Jul-96 thru 20-Jul-96

		<---Free Usage--->		<---Billable Usage--->						-->
Name	Description	Unique ppns	HH:MM	#Runs	Unique ppns	HH:MM	Time$	$ Surchg.	Adjusted Due IP	Net Revenue
DI.FOO !	Free Offer Outlet		1:25	7699		266:28	3090.59			3090.59
OE.FOO !	Free Offer Outlet		0:00	13		0:24	5.53			5.53
FD.FOO !	Free Offer Outlet		0:00	12		0:18	3.63			3.63
DI.GTE !	GTE Mall Store/DIS		0:03	110		3:43	46.73			46.73
DI.GA !	General Accident		0:00	18		0:06	1.17			1.17
DI.GS !	Gift Sender/DIS		0:14	111		9:54	125.21			125.21
OE.GS !	Gift Sender/ORD		0:02			0:00				
DI.GIM !	Gimmee Jimmy's/DIS		0:00	7		0:05	.75			.75
DI.HRB !	H & R Block		0:01	128		3:29	36.65			36.65
DI.HRV !	HRB Visa Area		3:52	2734		137:09	1546.05			1546.05
DI.HAL !	Hallmark Cards/DIS		0:13	140		5:51	59.15			59.15
FD.HAL !	Hallmark Cards/FDF		0:00	1		0:03	.32			.32
OE.HAL !	Hallmark Cards/ORD		0:00	25		1:23	13.73			13.73
OE.HS !	Hammacher Schlemmer & Co/ORD		0:00	1		0:08	.84			.84
DI.HS !	Hammacher Schlemmer and Company		0:09	327		19:53	231.83			231.83
DI.HVE !	Health and Vitamin Express/DIS		1:08	247		17:26	215.49			215.49
OE.HVE !	Health and Vitamin Express/ORD		0:00	1		0:02	.43			.43
DI.HOL !	Holiday Gift Guide		0:00	2		0:03	.64			.64
DI.HF !	Homefinder/DIS		0:11	333		13:36	161.57			161.57
FD.HF !	Homefinder/FDF		0:00	2		0:04	.86			.86
DI.HHC !	HoneyBaked Ham /DIS		0:00	3		0:05	1.06			1.06
DI.HHG !	Honeybaked Ham - Georgia/DIS		0:00	11		0:26	4.91			4.91
DI.HHM !	Honeybaked Ham - Michigan/DIS		0:01	14		0:17	3.20			3.20
DI.HAM !	Honeybaked Ham/DIS		0:00	115		1:36	18.14			18.14
DI.HC !	Huntington Clothiers		0:13	335		10:54	123.57			123.57
DI.HYA !	Hyatt International/DIS		0:52	1004		41:43	483.79			483.79
FD.HYA !	Hyatt International/FDF		0:00	2		0:02	.76			.76
OE.HYA !	Hyatt International/ORD		0:00	3		0:01	.21			.21
DI.WRP !	IBM Expedited SW Store		0:03	501		21:30	240.66			240.66
DI.IZ !	ISUZU		0:00	50		1:29	15.96			15.96
DI.INX !	Index-EM		0:02	805		12:10	139.55			139.55
DI.IW !	Industry Week Subscriptions/DIS		0:01	61		1:21	16.31			16.31
DI.IB !	Investor's Business Daily/DIS		0:23	567		10:14	119.32			119.32
DI.JCW !	JC Whitney & Company		0:23	161		5:06	52.99			52.99
DI.JCP !	JCPenney		0:15	1240		22:37	252.69			252.69
FD.JCP !	JCPenney/FDF		0:00	5		0:08	1.17			1.17
OE.JCP !	JCPenney/ORD		0:05	13		1:39	20.88			20.88
DI.JDR !	JDR Microdevices/DIS		0:28	233		8:37	106.39			106.39
DI.JW !	John Wiley Bookstore/DIS		0:00	23		0:17	3.52			3.52
DI.LH !	L'eggs/Hanes Outlet		0:05	443		22:39	257.02			257.02
DI.LEC !	Land's End Catalog/DIS		0:00	52		1:18	15.70			15.70
OE.LEC !	Land's End Catalog/ORD		0:00	1		0:01	.21			.21
OE.LAC !	Lands End EOB/ORD		0:00	3		0:52	11.09			11.09
DI.LA !	Lands End/DIS		0:09	303		4:40	56.67			56.67
FD.LA !	Lands End/FDF		0:00	2		0:07	2.66			2.66
DI.LE !	Laser's Edge		0:00	294		24:50	275.56			275.56
OE.LE !	Laser's Edge/ORD		0:00	4		0:16	3.41			3.41
DI.LQZ !	Leggs Hanes EOB/DIS		0:00	7		0:01	.21			.21
OE.LQZ !	Leggs Hanes EOB/ORD		0:00	1		0:09	3.42			3.42
DI.LEN !	Lens Express/DIS		0:01	159		9:19	104.60			104.60

		<---Free Usage--->		<---Billable Usage--->						
Name	Description	Unique ppns	HH:MM	#Runs	Unique ppns	HH:MM	Time$	$ Surchg.	Adjusted Due IP	Net Revenue
FD.LEN	! Lens Express/FDF		0:00	2		0:14	2.99			2.99
OE.LEN	! Lens Express/ORD		0:00	2		0:13	2.77			2.77
DI.LOS	! Library of Science Book Club/DIS		0:00	80		2:56	33.07			33.07
DI.LBW	! Liquor By Wire/DIS		0:05	372		6:00	73.03			73.03
FD.LBW	! Liquor By Wire/FDF		0:00	2		0:04	.86			.86
DI.LTM	! Lotus Development Store/DIS		0:05	119		3:33	39.86			39.86
FD.LTM	! Lotus Development Store/FDF		0:00	1		0:01	.21			.21
DI.MCC	! M&M Color Campaign		0:00	4		0:05	.96			.96
DI.MDZ	! MDA Mall Area/DIS		0:00	7		0:03	.63			.63
DI.MW	! MacWarehouse		0:10	617		32:23	319.39			319.39
FD.MW	! MacWarehouse/FDF		0:00	2		0:02	.21			.21
OE.MW	! MacWarehouse/ORD		0:00	2		0:11	1.16			1.16
DI.EO	! Mall Elite Offers/DIS		0:00	1		0:03	.64			.64
DI.MGZ	! Mall Mystery Door Contest/DIS		0:00	38		0:20	5.38			5.38
DI.TKR	! Max Ule		0:00	179		5:48	71.40			71.40
FD.TKR	! Max Ule/FDF		0:00	2		0:08	1.70			1.70
DI.MNM	! Meet the New Merchants/DIS		0:02	49		0:55	11.34			11.34
DI.MI	! Merchant Inquiry Area/DIS		0:31	40		1:30	19.61			19.61
DI.MTM	! Merchant to Merchant		0:08			0:00				
FD.MTM	! Merchant to Merchant - Feedback		0:08			0:00				
DI.MMA	! Metropolitan Museum of Art/DIS		0:44	247		13:49	169.14			169.14
OE.MMA	! Metropolitan Museum of Art/ORD		0:02	2		0:04	.75			.75
DI.MCW	! MicroWarehouse		0:52	4001		125:11	1477.58			1477.58
FD.MCW	! MicroWarehouse/FDF		0:00	1		0:01	.11			.11
OE.MCW	! MicroWarehouse/ORD		0:00	1		0:04	.85			.85
DI.MSP	! Microsoft Press/DIS		0:37	1085		39:34	459.03			459.03
OE.MSP	! Microsoft Press/ORD		0:00	7		0:09	2.65			2.65
DI.MBK	! Money Book Club		0:24	263		9:28	103.93			103.93
DI.MBO	! Money Book Club		0:00	10		1:08	16.94			16.94
DI.MZ	! Multiple Zones/DIS		1:16	1602		63:11	703.69			703.69
FD.MZ	! Multiple Zones/FDF		0:00	4		0:11	2.34			2.34
OE.MZ	! Multiple Zones/ORD		0:00	3		0:05	.75			.75
DI.NGM	! Net Guide Magazine/DIS		0:00	76		1:08	14.53			14.53
DI.NB	! New Bridge Mini-Book Club/DIS		0:00	140		3:15	36.53			36.53
CS1262	New Member Hub Credit 10.00	6	0:00	897	897	0:51	1.15			1.15
CS1261	New Member Hub Credit 5.00	1	0:00	90	90	0:05	.25			.25
OE.NYM	! New York Magazine		0:00	1		0:01	.21			.21
DI.NYM	! New York Magazine		0:00	119		2:17	26.25			26.25
DI.NI	! Nissan		0:23	225		14:08	176.64			176.64
FD.NI	! Nissan/FDF		0:00	3		0:13	3.40			3.40
DI.OM	! OfficeMax		0:01	387		20:07	233.72			233.72
DI.OS	! Omaha Steaks/DIS		0:04	375		4:48	58.24			58.24
FD.OS	! Omaha Steaks/FDF		0:00	1		0:01	.21			.21
DI.PCA	! PC Catalog/DIS		3:49	1199		136:21	1520.74			1520.74
FD.PCA	! PC Catalog/FDF		0:00	1		0:03	.64			.64
DI.PCC	! PC Computing		0:01	125		0:33	6.05			6.05
DI.CMP	! PC Computing/DIS		0:00	49		0:07	1.14			1.14
DI.PCB	! PC Publications/DIS		0:00	101		1:31	18.51			18.51
DI.PWM	! PCWorld Mall Store/DIS		0:18	422		11:20	130.00			130.00
DI.PA	! Parsons Technology/DIS		0:00	824		54:43	617.24			617.24

printed on recycled paper

printed on recyclable paper

Week of 14-Jul-96 thru 20-Jul-96

		<---Free Usage--->		<---Billable Usage--->						
Name	Description	Unique ppns	HH:MM	#Runs	Unique ppns	HH:MM	Time$	$ Surchg.	Adjusted Due IP	Net Revenue
OE.PA	! Parsons Technology/ORD		0:00	6		0:12	1.54			1.54
DI.PFS	! Paul Fredricks Shirts		0:05	128		3:13	32.99			32.99
DI.PPP	! Peachpit Press/DIS		5:40	45730		351:52	3775.71			3775.71
DI.PM	! People Magazine Subscriptions/DIS		0:00	193		3:42	41.47			41.47
FD.PM	! People Magazine Subscriptions/FDF		0:00	2		0:01	.21			.21
DI.PLG	! Polygram/DIS		0:00	845		15:47	181.79			181.79
DI.PON	! Pontiac/DIS		0:02	180		7:03	81.69			81.69
DI.PUB	! Publishers Clearing House		0:00	34		1:08	9.59			9.59
DI.RL	! Relo/DIS		0:00	19		1:26	18.12			18.12
DI.RS	! Rolling Stone Store		0:00	19		0:30	6.04			6.04
DI.SEF	! SEF		0:30	1035		54:03	640.61			640.61
FD.SAF	! Safeware Computer Ins./FDF		0:00	6		0:14	2.99			2.99
DI.SAF	! Safeware Computer Insurance		0:00	34		0:41	7.65			7.65
DI.SR	! Sears		0:00	293		12:01	137.44			137.44
OE.SR	! Sears - Orders		0:00	3		0:03	.54			.54
DI.SFW	! Seattle Film Works		0:00	61		1:43	19.98			19.98
OE.SFW	! Seattle Film Works		0:00	1		0:01	.21			.21
DI.SER	! Service Merchandise		0:04	499		21:19	241.05			241.05
DI.SD	! Shareware Depot/DIS		0:12	911		28:08	325.61			325.61
DI.SM	! Shop by Department or Merchant/DIS		19:14	14825		232:42	2650.36			2650.36
SAOMAI	! Shopper's Advantage (HMI)		7:39	6065		648:02	7245.08			7245.08
CIS387	Shoppers Advantage (ASCII)		0:00	9	9	0:09	.94			.94
DI.SAC	! Shoppers Advantage (ASCII)/DIS		0:03	2532		1:30	17.67			17.67
DI.SAO	! Shoppers Advantage (CIM)/DIS		0:01	417		0:48	9.70			9.70
FD.SAO	! Shoppers Advantage (CIM)/FDF		0:00	3		0:05	1.07			1.07
DI.SI	! Sierra Online/DIS		0:35	1658		52:23	602.39			602.39
DI.BK	! Small Computer Book Club/DIS		0:00	106		4:58	51.85			51.85
DI.SFD	! Softdisk Download Superstore		2:07	3039		287:11	3231.69			3231.69
FD.SFD	! Softdisk Download Superstore		0:00	1		0:02	.76			.76
CS1870	Softdisk Publishing Download	1	0:00	491	413	0:00		8111.80	6083.85	2027.95
DI.SIA	! Sports Illustrated Authentics/DIS		0:18	911		23:27	273.04			273.04
FD.SIA	! Sports Illustrated Authentics/FDF		0:00	5		0:04	1.08			1.08
DI.STU	! Stuart Mcguire Shoes/DIS		0:00	2		0:01	.21			.21
DI.SUN	! Sunglasses and Shavers		0:16	209		9:25	112.07			112.07
DI.CO	! The Company Corporation/DIS		0:42	802		20:00	241.69			241.69
FD.CO	! The Company Corporation/FDF		0:08	2		0:03	.81			.81
DI.EM	! The Electronic Mall Top		0:44	2603		20:36	239.82			239.82
DI.FR	! The Fragrance Counter		0:00	207		12:16	138.25			138.25
DI.TM	! Toyota Interactive		0:20	345		3:05	34.74			34.74
FD.TM	! Toyota Interactive		0:00	2		0:06	.63			.63
DI.AMI	! Tracking for Amica Ami.mas		0:49	767		19:57	229.86			229.86
DI.TA	! Traveller's Advantage/DIS		2:37	3125		93:14	1100.88			1100.88
DI.TC	! Twentieth Century Investments/DIS		0:01	66		1:24	15.55			15.55
DI.UPS	! UPS Store/DIS		0:02	144		7:06	83.04			83.04
DI.UQS	! US News/Subaru		0:00	3		0:02	.32			.32
DI.USP	! United States Postal Service		0:20	196		11:05	124.22			124.22
OE.USP	! United States Postal Service		0:00	2		0:09	1.05			1.05
DI.UW	! United Way/DIS		0:00	18		0:24	4.04			4.04
DI.UP	! University of Phoenix		0:01	283		3:15	38.02			38.02
DI.HMC	! Upgrade CIM for HMI Mall/DIS		0:01	105		0:16	3.63			3.63

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                                     Week of 14-Jul-96 thru 20-Jul-96

                                                   <---Free Usage---><--------------------------Billable Usage-------------------------->
                                                    Unique                             Unique                               $      Adjusted    Net
  Name          Description                          ppns      HH:MM      #Runs        ppns       HH:MM      Time$       Surchg.   Due IP    Revenue
-------- ---------------------------------------- --------   --------   --------   --------   --------   --------   --------   --------   --------
DI.VEK ! Vektron International                                0:00        204                   12:38     148.76                           148.76
OE.VEK ! Vektron International                                0:00          1                    0:04        .85                              .85
FD.VEK ! Vektron International                                0:00          2                    0:01        .11                              .11
DI.WK  ! Walter Knoll Florist                                 0:23        125                    4:25      47.54                            47.54
OE.WK  ! Walter Knoll/Orders                                  0:01          1                    0:05       1.07                             1.07
DI.FCM ! World Of Ford                                        0:48       2152                   48:15     530.41                           530.41
DI.ZD  ! Ziff-Davis Magazines/DIS                             0:54        419                    8:45      99.98                            99.98

              Electronic Mall Totals:                        87:19     155848                 4400:17   49557.18    8275.15    6206.36   51625.97
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BUSINESS PULSE SURVEY: March Madness: Productivity slows to a dribble

E-commerce firm lands $9 million

Atlanta Business Chronicle - August 20, 1999 by Caroline Hubbard Staff Writer

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Like a fueled-up rocket, an Atlanta company that links Internet retailers to heavily traveled Web sites is readying to blast off.

Nexchange Corp., which sets up mini-stores on other World Wide Web sites for its merchant clients -- companies like Mori Luggage & Gifts of Atlanta and Just for Feet Inc. of Birmingham, Ala. -- has just obtained $9 million in venture capital.

Founded in 1996, Nexchange has 16 merchants on board but expects to have 30 by the end of the year. It will use its new funding to double its work force, fine-tune its technology and aggressively market its service. The company has 16 employees now and will have 50 by the end of the year and 100 by the end of 2000, Chairman Daniel Ross predicted.

"Our strategy is to move rapidly and achieve a leadership position in this field," said David Parker, managing principal of Miami-based Interprise Technology Partners L.P., the lead investor in the round of funding.

Nexchange's strategy is simple. For example, using its electronic commerce technology, a visitor to Tennis Server can click on a tennis shoe and enter the electronic Just For Feet store. There, the

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visitor can purchase anything that Just For Feet sells. After finishing, the customer goes back to the Tennis Server site.

Both Tennis Server and Nexchange then get a cut of that transaction. In most cases, the content site (the site where the visitor starts) and Nexchange each receive about 15 percent of the sale, according to Del Ross, CEO of Nexchange.

The "stores" give a retailer a much larger presence on the Internet than just one site, Ross said.

"Brick-and-mortar retailers figured out a long time ago that location matters," Ross said. "You have got to get in front of the retailers. For some reason, retailers have forgotten that on the Internet."

Del Ross started the company with his father, Daniel Ross, and a friend from the Wharton School of Business, Joe Michael. Daniel Ross once headed a venture capital fund, Advanced Technology Development Fund. Howard Morrison, a retired NationsBank Corp. executive and longtime Atlanta technology industry leader, serves on the board of Nexchange.

Ruth Kartalis, director of Internet operations at Just for Feet, said she likes Nexchange because it brokers thousands of deals for her. She doesn't have the resources to set up separate partnerships with a lot of sites, she said.

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Wednesday, April 28, 1999

Making Paper

There are a variety of uses for "homemade" paper. Use a paper recycling project as a way to promote awareness for recycling and landfill use. Recycled papers can also be used for wonderful crafts - everything from book covers to decorative pins.Whatever the lesson you use recycled paper for, check out the ideas here from the Teachnet.Com T2T forum for uses you may not have considered before and some great links.

Coffee Can Paper

Materials: 2 large coffee cans (26 oz.), metal screen, non-metal window screen, sponges, paper towels, a scrap of wood about 6" long and 3"- 4" wide, an iron and a blender.

1. Cut one end off one coffee can and both ends off the other.
2. Cut screen into 6" x 6" squares. Place the can with one end out on a level surface, opened side up.
3. Place the rigid screen over the opening and then place the window screen over that. Place the other can over the screens.
4. Tear up a 7" x 7" piece of waste paper into tiny pieces. Place in the blender.
5. Add 1 1/2 cups water. Place the lid on the blender and pulse until pulpy.
6. Pour half the pulp into each of two containers. Add 1/2 cup water to each of the containers. Dump the containers of pulp mixture into the can.
7. Lift the top can. Place a new sheet of window screen over the paper pulp. Remove the screens and place on a flat surface.
8. Press with a sponge and squeeze all the

What Kind of Paper?

A Quick Guide

Aromatic Paper: usually handmade paper with natural ingredients added to the mixture for aroma: lavender, cinnamon, or rose petals, for example
Brown Paper: strong, natural brown paper often used in wrapping and bag making; this inexpensive paper is the choice for earthy appearance with other naturals such as twine, raffia, or dried florals
Bond Paper: everyday paper widely available with a medium weight and extensive color range
Bristol: heavy weight, high quality used in construction paper crafts
Coated Paper: very smooth surface on one or both sides, available in gloss or matte finish
Crepe Paper: very lighweight paper that is often not colorfast, but available in a rainbow of colors
Corrugated: light, but strong paper traditionaly used for packing fragile items, but also used in papercraft for its unique ridged texture
Layout Paper: lightweight, strong paper with a resisitence to water making it great for paint and ink washes and transparent enough for tracing
Tissue Paper: translucent, light bodied paper with a delicate construction
Newsprint: recommended for paper maché projects this paper is highly absorbent and has a natural appearance unless bleached; coarse, weak texture
Rice Paper: very thin paper made from rice grass
Sugar Paper: highly absorbent paper with grainy

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St. Patrick's Day 3/10
In Like A Lion... 3/4

water out. Peel off the top screen.

9. Place some paper towels on the work surface. Place the new paper in the center of the towels. Place more paper towels over the top and press with the scrap wood.
10. Peel off the paper towels and the screen. Remove bottom towels and iron the paper with dry heat. Enjoy your recycled paper!

appearance available in many colors
Parchment: fine artwork paper with brownish tone to look older, often used for manuscripts & certificates
Uncoated Paper: plain or embossed finishes with fibers aligned in one direction; great for folding

Valentine's Day Varieties 2/4
OREO Day 1/27
Readers' Night Out 1/26
Valentine Project 1/25
BananaBucks 1/19
G.O.A.L. 1/14
I Can't Wait! 1/13
Be A Good Secretary... 1/12
Globs o' Glue 1/11
341 Book Report Ideas 1/4

Iram's Paper 1

Materials: old newspaper, electric blender, large pan, wire screening, water, cornstarch, stirrer, wax paper, rolling pin

1. Tear a page of the newspaper into small pieces. Place it in a large pan.
2. Add enough water to cover the paper and soak for 10 minutes.
3. While the paper is soaking, mix 1/4 cup of water with about 1/8 cup of cornstarch.
4. Stir until the cornstarch dissolves.
5. Pour out the water in the pan that was not absorbed by the paper.
6. Put the paper in a blender. Add the cornstarch and water mixture. Cover the blender, and turn it on high for about two minutes.
7. Put the screen over the pan. Pour the pulp onto the screen. With your hands, spread it out so that it is flat and thin.
8. Cover it with wax paper
9. Use a rolling pin to squeeze out the excess water.
10. Slowly peel the wax paper off the flattened pulp.
11. Allow to dry completely, about a day or two.
12. Slowly peel the new paper off the screen.

Iram's Paper 2

Materials: tacks, fine screen (about 30 mesh), wood and nails, rolling pin, laundry starch, egg beater, blotting paper, several types of paper products (cardboard, newspaper, photocopy paper, etc.), a large tub or pail to make the paper pulp

1. Build a wooden frame, about the same size as you would like the paper to be.
2. Tack the screen onto the frame.
3. Tear sheets of paper products into small pieces less than 2 inches (5 cm) in diameter and put the pieces in a large tub or pail.
4. Add water and laundry soap in proportions of 1 tbsp of starch per cup of water to the torn paper.
5. Beat the mixture with an egg beater until the pulp is the consistency of a very light gravy.
6. Dip the deckle sideways into the pulp mixture until the screen is completely coated with a light layer of pulp.
7. Remove the screen and the sheet of pulp from the deckle and place between two pieces of blotting paper.

8. Press out the excess water with a rolling pin or and allow to dry.
9. Peel the new paper from the blotting paper and trim to size.

Variation: Try adding thread, yarn, glitter or coloured construction paper to the pulp mixture. It has quite an interesting effect. *Iram's Paper 1 & 2 submitted by T2T contributor Iram Khan.*

I once made paper with students using ripped up construction paper, water and glitter. Everything went into the blender and then got laid out on some sort of a screen to dry... it dried fairly quickly (a day or so), and was easy to clean up. **-Allyson**

You add water and paper to a blender, then blend it up with some special paste, then place it on a screen to dry it, and optionally use a cookie mold to make a shape. [Use] the shaped paper by gluing it onto a homemade card, or as a decoration...you can use Styrofoam balls, or painted pine cones, or even painted Popsicle sticks. **-Brian**

I teach a creative writing class (high school). As an end-of-the-year project, I would like to have my students create their own paper and compile a small book of their best writing (they can print shorter stories and poems in calligraphy, use pressed flowers to decorate, create their own illustrations or use magazine pics, etc). **-Tracy**

You've probably heard: "Be sure you are willing to ruin the blender."

It doesn't ruin the blender -- I've been making it for years! It is great way to teach about paper recycling and the history of paper. You can use scrapes of construction paper to color your paper. Add glitter and dried herbs and so much more. I used a sunflower mold once -- inserted actual seeds into it. Then the recipients could simply bury the cast and flowers grew from it! Craft Supply stores supply kits and the materials. Library has books on it. In this area you can write to recycling org. or paper companies and they have lots of instructional ideas for paper making. It is an inexpensive hobby, albeit a bit messy. Have fun! **-Beverly**

- Tree-Free: Not all paper is made from wood. Discuss what other materials could be used to make paper, then test out the theory by trying it.
- **Consolidated Papers** has a simple recipe for paper making on their website. A surf around the site explains their professional papermaking process. They also provide papermaking kits for educators - call Public Affairs at (715) 422-3789 for more info.

Quick Tips on **Parchment Paper**:

Great for handwritten manuscripts and any class project requiring paper with an "older" feel.

Mix up some regular, strong black tea and paint the paper with that --- it takes several applications. You get the best results from thin, "onion-skin" type office paper. When we made medieval manuscripts, we did all the art work etc. first and the "tea" was the last step (be sure and press them flat while they dry or at least weight the corners down.) - **Susan S.**

My class has done this (above) in the past and we tried both tea and coffee, also baking the paper in the oven with adult supervision. The kids felt that using coffee and baking was the most effective method. - **"firedancer"**

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11:00AM PT -
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favorite furry
Bear from "B
Big Blue Hous

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5:00PM PT -
Les Fox, of "T
Baby Handbo
discusses his
Beanie auctio

Cool Home Pages

Quips From Ally McBeal
A host of amusing, often politically incorrect quotes from Fox mega-hit "Ally McBeal."

The Best of James Bond
An extraordinary tribute to 007, the classiest secret agent in film.

Many Faces of Love
Czarevich's homepage celebrates the many faces of love, including an online wedding ceremony.

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Topic: Do you use coupons to purchase products?

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○ Yes - sometimes
○ Rarely
○ No

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Winning the Affiliate Game:

A Ten-Step Master Plan For Maximizing Your Profits

Winning the Affiliate Game
BY DECLAN DUNN

by Declan Dunn

> *"The secret to success is --find out where the people are going and get there first."*
> Mark Twain

This Internet Development Publication is part of an ongoing training series to maximize the value of your online customer base. Brought to you by Declan Dunn and ADNet International:
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The purpose of this workbook is to educate and entertain. Any perceived slights to a specific individual or organizations is unintentional.

Announcing the Best, Fastest, and Easiest Way To Build Your Internet Business

How To Get Your Own Automated SuperStore Selling the Hottest Products Online And Handling All Orders/ Customer Service... All You Do Is Market and Cash The Affiliate Checks

How many times have you picked up a newspaper and seen other people making tons of cash from their Web Site?

Thousands are profiting with affiliate programs, people who are no smarter than you are, no more experienced, but who seem to know exactly what to do. If your Internet business isn't generating significant income (and I mean at least $2,000 a month), here's the reason why.

You probably don't yet understand how to get customers to buy online, easily.

You are about to discover how to do this. The money being generated by the Internet is staggering, and experts point out that it will only grow even more dramatically in the next 5 years:

> **"By 2002, 25 percent of the expected $37.5 billion in Internet retail sales, not including autos, will have originated on affiliate sites"** – Nicole Vanderbilt, Jupiter Communications

The Internet is obviously one of the great economic revolutions: the real key to success is to copy what is already working, and put it into action for yourself. The fastest, risk free way to get your share of the Internet fortune is to take advantage of affiliate programs.

Imagine if you were selling a product and making $20 per sale. No inventory, no credit card processing or customer service, simply marketing and making $20, free and clear. Here's the kind of income you could be looking at:

Orders Each Day	Weekly Income	Monthly Income	Yearly Income	Yearly Income if you had 2 Affiliate Programs With These Results
1	$140	$560	$6,720	$13,440
2	$280	$1,120	$13,440	$26,880
3	$420	$1,680	$20,160	$40,320
5	$700	$2,800	$33,600	$67,200
10	$1,400	$5,600	$67,200	$134,400
15	$2,100	$8,400	$100,800	$201,600

Now anyone can open up a Web Site and join an affiliate program, just like anyone can open a store. The real secret is in making money with a tested, proven process that can build your business for the long run without risking your earnings, time, or sanity.

The best part is, most of the affiliates out there are making the same mistakes. **They are wasting time and money on online marketing insanity that simply will not succeed.**

In this book, you will tap into the strategies that do work, by focusing your efforts like the affiliates we are about to explore such as:

1. The Web Site dedicated to helping children learn and paying its way by selling books;
2. The engineer who sells toys and videos about robots as a profitable side business;
3. A journalist in Australia who writes, while on the beach, to an international audience of over 4,500 people who regularly buy affiliate products and services from him;
4. A software entrepreneur who sells his competitor's product and makes up to $1500 each month with absolutely no extra effort; and
5. An Ohio couple who set up their own network and in a few short months expect to generate millions with an approach so innovative, so simple, it boggles the mind.

The key is to pick a few good products and test which ones sell best. Build your business for the long haul, because it will be worth it:

"Online Media **is entering what we believe will be the most rewarding period in its development**…We believe that the prevailing forecasts for online advertising expenditures will be comfortably exceeded in the coming years, and that **the leading firms in the sector will be powerfully profitable in the longer term.**"
Online Media Rules, Salmon Smith Barney, August 1998.

What you will discover in this book is the true secret of success; enjoy what you are doing and sell only those products you know, enjoy, and feel comfortable offering. Here's how:

1. Create an automated system that pays you to just market. Let them handle all the headaches.
2. Generate visitors and put your Internet sales system on autopilot.
3. Offer products that people are buying. Sounds simple, but few people are doing it!
4. Offer products that are easy to sell to your target audience.
5. **Instead of creating mediocrity, why not copy genius.**

Let's begin by showing you a few of the geniuses putting affiliate programs into profitable action. To some, paying their hosting fees and helping children learn are the riches. To others, it may be a full time business that allows them to quit their jobs and be their own boss.

Whatever your goals, remember these business models. What they have discovered is no secret; the best way to sell products and services online is to sell a few items and sell them very well. Forget about Internet flea markets, and focus, focus, focus…Now!

Success Story 1. The Cybrary: Getting Paid To Help Children Learn

http://remember.org

"Specialty retailers will embrace **syndicated selling** -- distributed points-of-sale -- within smaller, but more targeted communities…where high levels of trust will yield conversion rates in excess of 10%." On-line Retail Strategies, The Forrester Report, May 1998.

Overview: The Cybrary is an educational site (http://remember.org) set up since 1995 to educate students from sixth grade to early college. The visitors to this site are mostly teachers and students from throughout the world who come for the free information. The site has a long growth curve to its current steady traffic of 500,000 visitors a year, with 10-20,000 in slow months and over 100,000 on its two peak months, generating over a million hits.

How This Site is Marketed

The Cybrary built its traffic through word of mouth advertising; since it is an educational site, many newspapers and online awards have helped promote their efforts for free. Combined with strategic positioning on the search engines, this site has developed a loyal following. Niche markets like this, with a passionate audience, grow by announcing themselves to the newsgroups, mailing lists, and Web Sites where the audience goes. No monthly marketing is involved.

How They Set Up An Affiliate Program

With just one week of effort searching Amazon.com, this site set up its own bookstore. Books are a natural market for these visitors. Since it only took a week to set up this book store, with no changes in two years, the time factor is limited. Now this book store pays the hosting fees for this site for an entire year, not much but enough to keep it going. Let's break this down to see the value.

A Sample Weekly Report From Amazon.com For the Cybrary

```
Click-throughs and sales by individual item
 For the week of 22-Nov-1998 through 28-Nov-1998
                              YOUR
          HITS  DIR. NDIR   FEE        TOTAL SALES
---------- ------ ----- ---- ------- --------------------------------
   Totals:  497   0     31     $ 9.58      $249.46
```

They generated about $250 in sales for Amazon.com and make $10 a week., a little less than 5% margin on average (many of the books bought here are hard to find items). Let's estimate the value of this small affiliate over a year, with these as an average sent through Amazon.com:

	Per Month	Per Year
Total Visitors	1572	18,864
Total Sales	$1,000.00	$12,000.00
Total Affiliate Payout	$38.40	$460.80

For no effort, the Cybrary pays its own way. Riches here cannot be measured in money alone. Not bad for a week's worth of work; this site it totally on autopilot.

Success Story 2. An Engineer Who Profits From His Hobby

Carlo Bertocchini is an engineer who loves robots. His site is a natural extension of his own interest, applied in a very specific and profitable way. Here's an interview with Carlo.

Overview

"I work full time as a mechanical designer. I have been involved with robotics (mostly as a hobby) since about 1993. I have built several robots for robotic competitions. I won the heavyweight division of Robot Wars in 1996 and 1997. My robotic Sumo wrestling robot has won the annual competition at the Exploratorium science museum in San Francisco every year since 1994. RobotBooks.com is the first web site that I have put together (except for a site about one of my robots on one of the free web page services).

I noticed Amazon's affiliate program one day while I was shopping for books. It sounded like a great idea, so I reserved the RobotBooks.com URL that same day."

Carlo's Marketing Strategy

"I have contacted over 700 robot related web site owners and asked for a link. My first email does not offer a reciprocal link, but I give one to most of the sites that ask for one. This is important not just for the traffic that you will get from the links, it is also important because some search engines take into consideration the number of other sites that link to yours when they decide how high to rank your page in their search results.

I have submitted my web site to over 100 search engines and directories. There are many businesses that will do this for you for a fee. Here is a free one: http://www.selfpromotion.com/. Most of your search engine traffic is going to come from the big ones (Yahoo, Alta Vista, Excite, InfoSeek, Lycos, Hotbot, and a few others). You want to come up on the first page of the search results. It's not that easy, and there is a whole cottage industry devoted to raising search rankings. We have pretty poor rankings right now. I have a lot more work to do in this area, but that is where much of our growth will come from.

I wrote two articles for the magazine "Robot Science & Technology". Almost all the readers of this magazine are hobbyists. In exchange for writing the articles, I get six months of advertising and some cash. I'll use that cash to buy small ads in other magazines.

I have announced my site on several news groups, and I started an on-line forum on robotics at www.delphi.com. Delphi provides the forum for free in exchange for the right to post advertising banners on it. This forum is now getting about 100 unique visitors per day, and each of them sees my advertisement every time they log on.

I had a service send out a press release to about 1300 newspapers and magazines. This cost $225, and I have gotten two calls from reporters so far. I don't know yet if this will pay off.

Banner adds probably won't work for a product that such a tiny percentage of the population is interested in, but I might look into one of those pay-per-click banner add services for bringing in more traffic."

What He Offers

"We sell books, toys, kits, movies, and magazines that have something to do with robotics. The market I am going after is the hobbyist market. Each item that we sell has a picture and a short description. All the order taking, money collecting, and order fulfillment is done by the companies
that I am affiliated with. My plan is to never touch the merchandise myself. I spend all my time on content development and promotion.

Our first full month was September '98. We averaged 50 visitors per day, and we earned about $100 in commissions. In October we averaged about 140 visitors per day, and we earned about $250. It is now near the end of November, and we are on track for an average of 275 visitors per day and earnings of about $500.

Our book vendor is Books.com. They offer 12% commission on all sales, which is the best deal I have seen for books. I actually started with Amazon, and I was looking forward to those 15% commissions they offer, but it turns out that most of the books that I wanted to sell did not qualify
for their 15% plan. They would only pay 5%.

Our toys vendor is eToys.com. They offer 25% commission to serious sites that have their own domain names, and 12.5% to smaller sites.

Most of our sales are books. Toys are doing pretty well, but magazines and videos are not moving. I will keep offering them though because it adds content and rounds out the site. They may also help bring some people to the site."

The Key Elements That Make His Program Successful

"To be successful with affiliate programs on the web you have to bring several things together. First of all you need to have a product that people want. If you choose a popular product like computers, you have the potential to make lots of sales, but many businesses are selling computers,
and you will probably have to spend some big bucks to get their shoppers away from them. I chose to go with a niche product.

Robots aren't as popular as computers, but selling them has some advantages. The robot hobbyists are easy to find. Alta Vista returns almost 700,000 hits on the word "robot". The interest in robots is growing rapidly, and very few web sites offer as large a selection of robotics products as we do. In fact, when it comes to robot books with reviews, we are the biggest.

You need a good web site that is easy to navigate. The user should also be able to get something of value from it without spending any money. We have a "Robot News" page on which we post a new press release or article every week, and a links page where we link to over 20 robot clubs, and 25 robot competitions around the world.

GoTo.com, one of the smaller search engines, allows you to pay for better rankings. I reserved top position for about 25 key words and phrases and most of those only cost me 1 penny each. For example, at the time of this writing, I have top position for the phrase "robot toys". If the surfer clicks on the link to my site, I pay GoTo one penny. This is a great bargain. But if your keyword is "computers", be prepared to pay almost 30 cents for top position. I don't know if GoTo is going to make it with this mode of doing business, but I hope they do because we get almost 10% of our traffic from them. This will probably go down to 2-3% when we get our rankings up in the other search engines.

Do you have any suggestions for how other businesses can apply what you've done to their own associate programs?

"Visit http://www.associateprograms.com/ for lots of info on affiliate programs.

Notice the high commission levels of most of my vendors. Most operators of affiliate programs offer much lower commissions. Don't waste your time with them. If all you are getting is 5%, you really can't afford to pay for any advertising. Even the few pennies you pay at GoTo.com will start to eat into your profits.

This isn't easy. It takes a lot of work to put together a decent web site. Once you have done that, your real work begins. Marketing is the best name for your new job if you decide to try to earn a living with affiliate programs.

I reserved several other domain names, and once I get RobotBooks.com going pretty good, I plan to do the same thing with GourmetBooks.com, VideoGameBooks.com, NutritionBooks.com, and several others. It should be a lot easier the second time around.

How can our readers contact you for more information?

Visit us for an introduction to an interesting and fun new hobby!
http://www.RobotBooks.com/ or email Webmaster@RobotBooks.com

Success Story 3: Making Money on the Beach in Australia
Allan Gardyne's well researched site: http://www.AssociatePrograms.com/

Associate Programs is an excellent resource for associate/affiliate programs (just ask Carlo!); the unique approach of its creator, Allan Gardyne, incorporates actual, personal involvement with affiliate programs along with a community sharing feedback. He offers discussion boards and insights into this market, as well as recommending his Top 10 programs. This is an excellent site to get a personal view of affiliate programs; the key strength is Allan's email list of over 5,000 subscribers. A list like that will keep you in business for a long time. Let Allan show you how he makes a good living with affiliate programs himself.

Overview

"I'm Allan Gardyne. I live with my wife Joanna in a pole house among gum trees and jacarandas by the beach at Tuan, a tiny fishing village without a shop, in sub-tropical Queensland, Australia. I wasn't born here - I just got here as fast as I could. Three days a week I work as a sub-editor for a daily newspaper and Joanna usually works one day as a reporter. These days, I spend just about every other hour I can manage working on AssociatePrograms.com."

What inspired you to create your Web Site?

"I run a directory of associate programs - the Associate Programs Directory, at http://www.AssociatePrograms.com . I began it because I had joined Jim Daniels' associate program for his introduction to marketing on the Internet, "Insider Internet Marketing". (It's http://www.bizweb2000.com/d2080.htm) I loved the way commissions arrived regularly in the mail - I was making money while I was walking on the beach - so I searched for more companies offering similar programs.

I was amazed that apparently no one had started a directory of such programs, or if one existed I couldn't find it. So I decided to start my own. At first it was just a one-page Associate Programs Guide, but it quickly expanded into the Associate Programs Directory and I got my own domain name in March, 1998."

Could you explain the strategy behind your directory?

"My directory of associate programs is different from most directories. It allows companies running programs to list them, but also allows other people to recommend programs. I also publish an associate's special URL or ID number, so in some cases they can earn commissions from those links. I also allow them to include their own web site's URL, giving them free publicity.

This gives people a strong incentive to send me listings, so the directory grows fast."

Tell us a little about the results you've achieved in terms of your business.

"Traffic to AssociatePrograms.com has grown quickly, from 4227 unique visitors to the main page in April, 1998, to 12,305 in August. The Associate Programs Newsletter has gone from nowhere to more than 3000 subscribers in just over five months. I love getting e-mail from people thanking me and telling me how helpful the newsletter has been. It's fun, making money by helping people make money."

What do you think are the key elements that make your Web Site successful?

"I tell people which programs have made money for me and for other people, and also give marketing advice. I took Corey Rudl's advice and after buying his marketing course, I wrote a personal recommendation for it, instead of just posting banners. My sales soared from $195 (US) to $845 for a month. I use advice from Corey's manuals to market his course and have now achieved more than $1100 in sales for a month - just for course alone; it's at http://www.marketingtips.com/t.cgi/7134/"

Do you have any suggestions for how other businesses can apply what you've done to their own associate programs?

"The Internet is growing an a phenomenal pace and so there are always new people seeking products and services. For example, I've found that there are a lot of new businesses looking for an easy way to accept credit cards online, so associates of a company such as Thomas Harpointner's AIS Merchant Services should do extremely well. It offers an amazingly generous $175 commission per sale, and also has a second-tier commission of $50. It's at http://www.aismedia.com/x/cc.cfm?AG45xDUNN

(Note the nifty trick in the URL. AIS allows an associate to change the last part of the URL, so if any sales are made because of this publication I will know. All programs should include that excellent feature.)

Beware of thinly disguised pyramid schemes. I'm extremely suspicious of businesses which excitedly emphasize how much money you can make, instead of telling you about a wonderful product or service.

How can our readers contact you for more information?
Allan Gardyne allan@AssociatePrograms.com
AssociatePrograms.com -- http://www.AssociatePrograms.com

Success Story 4: How To Turn Your Competitors Into Partners
Brian Clark, http://www.rankthis.com and http://www.gmdstudios.com

Brian Clark heads Radiation, a software company offering LinkTrakker software. Drawing on a strong technological background, and offering his products to WebMasters and Web Development companies, he taps into a natural and huge market on the Internet; offering software. He has an affiliate program he runs, as well as participating in his "competitor's" program. Here's how he approaches the affiliate market.

Overview

"We've been doing CGI web development since 1994, mostly from the entertainment industry. We needed to be able to track promotionally what was working and what wasn't. We really want to be able to see the results coming from search engines, links, banner banners, and get a feel for how our techniques were working online.

We decided to build the tools because we need them ourselves. LinkTrakker has been around since March 1995 with 16 point version upgrades since then. Now it is the centerpiece of our well tested, well deployed products under the Radiation brand.

In my mind, the most beautiful affiliate's system requires the affiliate to do the minimum amount of special things. Amazon and Barnes & Noble use their cgi program, making you link to a particular book, which is not the easiest thing to do for an affiliate.

In the ideal world, the affiliate would just make a link, and it would count towards their sales, friction-less. It is not about managing the sign up process of affiliates, calculating the percentage they should be paid, and setting up all these systems. Affiliate programs have extreme customization needs on the front end and the back end. On the front end, what info do you want to collect, and how much do you want them to track real time?

Linktrakker fills the middle, connecting each visitor to the Web Site with the outside Web Site that led them in from lead to sale, just by reading a cookie on a browser. It's simple to customize shopping carts to read that cookie and store it as an extra field of the order.

Our affiliate program for LinkTrakker has allowed us to dedicate support resources to everyone who's installing before they bought. Affiliate programs are becoming accepted and free up resources for support, for customer service. We launched our affiliate program 3 months ago and have over 220 affiliates already, providing them the technology without requiring having a direct relationship with their clients; we are thinking like an outsourcer."

How Do You Use Affiliate Programs To Generate Extra Income?

"I discovered WebPosition software, which is a great match for RankThis's services, so close that a business person who is more narrow minded might see them as competition. I signed up for their affiliates program, and dedicated 40 CPM of banners for WebPosition, generating $1500 in commissions a month. I get $37.50 per CPM for my banner advertising with this affiliate program, measured in commissions.

Compare that to my other options; if I sell the banner ads, the book rate is $15 CPM. If I can't sell the banner bars via that method, and put that into the hands of a broker, I earn about $1.40 to $5 CPM...compare that to the money ($37.50) from WebPosition. Plus I don't have to convince WebPosition to buy advertising every month, like I would if I was simply selling banner ads at my Web Site.

The problem with banner ad CPM is that it doesn't provide enough accountability to advertisers. Clickthrough doesn't provide enough accountability to publishers. Affiliate programs protect both."

Brian looks to the SellThrough, instead of the clickthrough. He finds that certain sites related to his product line generate much more sales than others through his affiliate program.

Success Story 5: Profit While Helping Dolphins, Whales, and Non-Profits

Dolphin, Whale, and Shark Gift Store, http://www.dolphinws.com

This amazing story, inspired from the interview in Inc. Magazine Tech 1998 No. 3 issue, shows how two entrepreneurs took the idea of affiliate programs to create a full time business. They have built their own affiliate program by following the Amazon.com model and putting in their own, unique approach. They have provided a middle ground between the companies offering products and the non-profits they have targeted to help.

Overview

Rudy Socha and Carolyn Darrow thought of the idea for this online Gift Store in 1997. By March 1998 they opened their own store online. Socha had learned about Amazon.com's model and the amazing amount of affiliates they had.

Instead of copying Amazon, he invented his own approach, targeting non-profits. By May 1998 they had signed up their first, affiliated non-profit: the ASPCA (American Society for the Prevention of Cruelty to Animals). The ASPCA gets a customized entry page to their gift store. This is a model they have extended by working with just a select few non-profits, instead of managing the headache of many affiliates.

They provide products as the retailer of a variety of dolphin and whale related items (isn't retailer another name for affiliate?). They then sign up non-profits like the ASPCA, who gets paid 10% per transaction. The non-profit gains a source of ongoing income as an affiliate, while the gift store is able to focus strictly on doing something that matters to them, helping non-profits.

Their Marketing Strategy

They do not actively promote their Web Site. They do not collect emails or customer information, because they feel it just isn't the right thing to do. Despite what appears to be the wrong thing to do, they are profiting by working through high traffic, non-profit sites, mostly wildlife organizations. Their marketing cost is the 10% they pay on every transaction. That is it. Donations are also accepted and routed to the non-profits.

The Results

By following their own passion and taking the high ground in business, they have developed core relationships with non-profits. Socha has estimated $7 million in earnings their

---

first year, all for doing something they love, with little or no marketing, and helping non-profits survive.

Success Story 6: Giving Back to the Community While Earning Money

iGive.com, http://www.iGive.com

Making money for yourself is the goal of any business. Imagine if you could help others, giving back money to the community while profiting yourself. Unlike the previous story, the following is a site based on giving more than on selling a specific line of products. Its success is an inspiration for anyone seeking to really use the power of the Internet to help themselves, and their community.

Overview

The goal of iGive.com is for the shopper to give back to the community. A wide selection of products are available from merchants such as:

eToys
Beyond.com software
Music Boulevard
Avon
Reel.com
J. Crew

Notice that the profit margins for most of these are in the upper ranks; this gives the site an ability to generate profits. This profit margin is split equally, half going to the non-profit of the shopper's choice and half to keeping iGive.com's efforts going.

Their Marketing Strategy

iGive.com earns its money by matching shoppers to the selected merchants. It creates cause related marketing, donated a matching fund for each purchase. In essence, the good will of the shopper is encouraged and the non-profit gets half the net profits.

The Results

iGive.com opened in 1997 and in its first year estimates to have generated over $180,000 for 43 non-profits ("Organizations make it easy to donate time, money online", Jamie Beckett, San Francisco Chronicle, December 24, 1998, p. D3). Remember that since they split the profits, they also earned $180,000. Total earnings is over $350,000 for the first year, while helping non-profits and the community. No inventory, no burdens of order processing or delivery; simple, direct cause related marketing. Where else but the Internet could this happen?

How to Plan Your Success in 30 Minutes or Less

Now that you have read some amazing stories of how others are achieving their dreams, it's time to get focused on the results you can generate.

You will notice something common among all the success stories; every one of them intensely enjoys what they are doing. The first thing that leads to most affiliate's failure is the lack of real interest, passion, or love for what they are doing.

In fact, most people assume that they should just sign up for every program and chase customers down. They set up sites with hundreds of programs on it, putting up banner after banner on their site.

In the following chapters, we'll show you how to set up your Web Site and marketing. For now, remember the most important lessons the success stories have taught us all:

1. Measure your success in your own terms. For the Cybrary, it may be paying its hosting fees and breaking even. For others, it may be money. But if you look closely at those success stories, every one has an extreme joy in helping others achieve their goals.

2. This joy is part of their success; if you do not enjoy what you are doing, eventually you will get cynical and give up. Your customers will pick up on it, even if you don't think you are being negative. As the saying goes, "Life is a state of mind." Prepare yourself with a positive attitude.

3. Begin with the end in mind; determine what is important to you, set realistic goals, and pursue your goals. Test your efforts cheaply and when you find what works, then you can sink your money into it. You want to find the best affiliates programs for you; target ones that you can sell a product a day, and make $20 of off each sale. These are the ones that can build your business.

4. Remember that none of these stories happened overnight; promises of instant success is not what this book is about. Focus on your long term efforts and building an Internet business that fits into your life and doesn't make you work too hard.

5. You only have so much time in life; enjoy what you have. Let the Internet help you further that enjoyment. If you find yourself complaining instead of doing something to solve the problem, you have missed the point.

6. Abraham Lincoln put it so well:

> **"The pessimist sees the difficulty in opportunity.**
> **The optimist sees the opportunity in difficulty."**

No achievement comes without its challenges…and that's where the real fun comes in. Ask any successful person about the most enjoyable, alive time of their lives and it inevitably comes down to when they were just starting their idea. These really are the good days.

Let's get started by taking 30 minutes to determine what it is you would like to do with affiliate programs.

Phase 1: Take Ten Minutes to Inventory What You Do (And Hopefully Like to Do) Best

Time: 10 minutes

Goal: Make a list of the following:

- Every job you may have had
- Every hobby you may have, or would like to have
- Every personal interest, hobby, related topic, business, or special interests you may have

High profit ideas can be found with a little fishing. Don't think too hard, just write it down. And limit yourself to 10 minutes. You are looking for those subjects, interests, and related products and services that you can offer.

Imagine yourself 5 years from today, the day you made a decision to change your entire life, and you will look back on this moment as the time you took the next step. Picture yourself doing what you would like to do; what sort of people would you like to meet? How much vacation time would you like to take?

Take some time to take your dreams and put them together with what you are thinking now. What can you realistically achieve and within what time frame?

Phase 2: What Areas Could Yield High Profits?

Time: 10 Minutes

Goal: Take each item from Phase 1 and ask:

1. What are the major problems facing people interested in this subject?

2. What are the important goals that people interested in this subject would like to achieve?

Do this as quickly as possible, 10 minutes only. Remember not to think too hard; if you cannot list them quickly, it is likely your target customers cannot as well.

Think of yourself traveling up in an elevator with one other person; this person will get off on the next floor. You have 30-60 seconds to describe exactly what you do and make it so interesting, that they do not want to get off.

Don't worry if this doesn't come too quick; in fact, you should work on your elevator speech throughout your business. It will change and adapt as you do. What is important is to

focus your efforts on being able to exactly and quickly explain what you do in the time it takes to ride up an elevator.

Phase 3: Picking the Ideas with the Most Profits

Let's start judging what you wrote. Which ideas are worth your time and which are wasted time?

Go back through your list from Phase 1. Ask two questions of each:

A. Can I write about the solutions or goals these people want to achieve?

People who write about something based on their own experience put out more interesting materials than "experts". Don't think of yourself as an expert, can you simply write their goals and solutions from experience? If you can, customers will pay for it. The real challenge is to provide a new twist to the subject that no one else has.

B. Can I provide products/services to supply my customers? Is anyone else doing what I'm doing?

This question is usually assumed by most businesses; if no one is selling what you are, you have to create a market. If too many people are selling what you are offering, your competition may hinder your results. Be honest and don't use your own opinion only; get feedback from others. It is often easier to take part of an existing market than creating your own.

Phases 1 and 2 are for letting your ideas go. Use Phase 3 to sort your ideas, check them out. Do this for yourself and work with a partner. Make sure you are honest in Phase 3 and take only those ideas that are workable, and throw out the rest.

Remember that competition is not necessarily bad; it has been proven that in a town with a McDonald's burger restaurant, that opening up another McDonald's in the same area can actually improve sales in both stores. People want more of a good thing, but be sure you don't pick out a business with an 800 lb. Gorilla that owns the market.

For example, it would be silly to create a Personal Computer software system to compete with Windows. But if you could sell something that Windows users would want, you gain part of a natural market. What you are looking for is your natural market, things that you understand and can easily explain, and offer, your target customers with affiliate programs.

Phase 4. Market Research: Start Thinking About Your Affiliate Programs

The first step was brainstorming exactly what it is you are selling:

1. A solution to the problems your customer has.
2. Supplies to help them solve the problem..

Now find out what your likely affiliate programs are. This is the time to start looking among your current clients, their vendors, associates, and others. Can they generate any leads for you if you were to offer the products from these programs? Make sure that you can solve the

problems for the customer base you have brainstormed, and don't be afraid to repeat this exercise. Keep testing until you find affiliate products that can solve your customer's problems.

Getting Started: What is Selling on the Internet?

Now that you have an idea of what it is you would like to offer via the Internet, apply this to what is actually selling online. Certain products move better than others; for example, most online shoppers would not buy an expensive suit, because the expense and need for personal assistance are not available.

Yet these same people would buy apparel from a catalog like L.L. Bean or Habitat, Inc, the kind of apparel that is not priced too high, that you can look at a picture and decide whether or not you want to buy it. At the end of this chapter is a long list of Web Sites you can visit to discover exactly what it is that people are buying,

Apply this to what you want to sell via affiliate programs and use the following criteria to measure whether or not you select an affiliate program to work with.

You should be able to:

1. Open an online store, ie, Web Site, as your primary business or additional revenue stream and immediately begin selling products.
2. Take advantage of online customer service, automated order processing and delivery, and the ease of having a business that virtually runs itself with no overhead.
3. Drive people to the door and help them decide what to buy, wherever they are.
4. Use your highly trafficked Web Site to attract traffic and generate residual income.
5. Increase your profits by putting an automated system in place that works for you.

Most of all, you do not need to be an expert. The affiliate store and staff are set up to answer questions and fulfill the orders. Your job is to simply get people into your store..

All you have to do is market and cash your percentage of net profits your store generates, hopefully doing something you enjoy. Sound good? Let's look at what is selling online:

What is Selling Online: The Top 10

1. Computers: If you want to prosper during this Internet economic revolution, then you need to offer the products that people want to buy, quickly and easily.

Today, they want computers. Lots of them.

They want faster computers and modems, better monitors, and more software. Most people who visit your Web Site are using computers. Our whole Information Age is powered by computers. Here is a conservative estimate of what the future holds for Online Computer Hardware and Software Sales:

1996: 140 million
1997: 323 million
1998: 701 million
1999: 1,228,000,000
2000: 2,105,000,000
Source: Forrester Research

While computers are an excellent item to sell, the affiliate programs are even better. The challenge is in selling such a wide variety of products. If you choose to sell computers, make it one of your core focuses and make sure that you know what you are doing.

Once again, don't worry about being an expert. I had a computer salesperson in my staff in San Francisco who had never sold computers. He simply read trade journals, one hour a day for a period of 3 months. By the end of that period he was the best salesperson in our office.

Computers have and will be a major part of this market.

2. **Books** are the next biggest item sold online by most estimates. You have a broad selection of affiliate programs to choose from, including Amazon.com's famous affiliate program.

Barnes and Noble, Books.com, and many other book stores await you. Measure these stores on the profit margins you can gain from them. Remember in our success stories about the engineer who started with Amazon.com, but found out that most of the books he sold went at just a 5% profit margin.

He opted to go with Books.com, which gave him 12%. Another Web Site, targeted towards a niche market of Pets online, generated over half a million visitors a month and ran into a similar decision. This Pet Web Site owner was selling many books for Amazon.com and negotiated with them to get 15% of everything he sold.

Then he called the distributor of books (this affiliate was selling many, many books) and asked if he could sell directly from the distributor and by pass Amazon.com. Because of the high volume of books he was selling, the distributor allowed him to become a direct reseller.

Books are an excellent product to sell as an introduction to your customer base. Keep in mind that even at 15% per sale, you are most likely selling a product in the $20-$30 range. That's only $3.50 to $4.50 in profit per book sold, not even close to our $20 a product item outlined at the beginning of this book.

Yet books can help you get your customers used to buying from you, and they obviously like to buy them online. It is estimated that 23% of the people online buy books (Iconocast, October 1998). Look around at any of the bigger Web Sites and you see the are all offering books.

3. **Travel** is a huge market online and one of the most lucrative. From Web Sites like Travelocity to Microsoft's Expedia, the ability to book cheap travel online is powerful. Travel will continue to be a major portion of Internet sales. There are some affiliate programs with these travel opportunities, but don't just think about selling plane tickets.

You may find people want to travel to a certain destination, which may result in a significant market. For example, Hawaii is a highly searched for vacation spot online. You may be able to sell apparel, travel, vacation rentals, and other Hawaiian related products. Just look in a search engine and you will find a battle for the top spots for this heavily searched for term. Keep an open mind if you are thinking about travel, because there is much more than the flight involved. People also like to remember where they have been with clothing, souvenirs, and videos.

4. **Music** is one of the biggest markets online as well. From music CD's, to personalized CD recording where you pick your own songs to make your own records, the market is vast. People like to buy music, but like books it comes with a lower profit margin than most other items.

Even if an estimated 10% of people online buy music, you have to be sure that your target customer base is interested in buying this from you. Two great affiliate programs are Music Boulevard and CDNow; both offer decent profit margins, but this is again a commodity product.

5. **Apparel and clothing** are just starting to catch on the Internet, as people see the traditional catalogs make an online play. In 1997, American Online found that apparel was its biggest seller during the Christmas season.

Apparel and clothing can be a seasonal play, as most buying happens during the December holidays, Valentines Day, and Mother's Day online. These patterns may change as more people shop online, but for now the apparel game is wide open.

6. **Toys** are also big online, with affiliate programs running with good profit margins. This is most often a seasonal play as well. Etoys is the biggest player in this market, but look for a wide variety of companies as this market develops.

Also consider that toys shouldn't be limited to Christmas-type gear; if you count computer and Nintendo/Sega type games, this market is very big.

7. **Flowers and Greeting Cards** are an obvious fit for the Internet. If you can pick up a phone and make a transaction easily, the Internet can facilitate this commerce.

From companies like 1800Flowers to ProFlowers.com, these sites have networked florists nationwide and offer decent profit margins. Products like this would again move in according to certain holidays; Mother's Day in the United States is one of the biggest days for sending flowers, as is Valentine's Day.

8. **Outdoor gear and sporting goods** are also a good target. In particular, fishing is a very popular sport online. Most of the major sports like football, baseball, and basketball are dominated by the bigger sites, many of which do not use affiliate programs. Still you can look around for what is available. Outdoor gear for hiking, fishing, for extreme sports like rock climbing or mountain climbing may move well, along with vacations that relate to this gear.

Here is where you could combine the travel with the actual sales of outdoor gear. Imagine a site selling fly fishing rods and travel to select areas to fly fish around the world. If you worked through our 30 second brainstorm and found fishing as your passion, you have an active market with many possibilities.

9. **Vitamins and health food** are really just beginning to make their niche on the Internet. From affiliate program providers like GreenTree.com and MotherNature.com to many, small suppliers of vitamins and health supplies, this is another growing market.

In a recent study, the one thing people didn't mind hearing about often were health related items. If people are continually concerned about staying fit and healthy, this kind of product line makes sense. It encourages repeat business and is likely a good, long term play.

10. **Personals** online are very popular. One and Only is the most famous singles program, which run the gamut from dating services to just about anything you can imagine. Some of these personals tend to run into adult services, so be sure it is something you are interested in before you get started. Research what the product line is and look for subscription based services, which can be very lucrative.

Many Personals services have monthly subscriptions; you get paid each month the person stays as a subscriber. Look into these programs for long term revenue.

Bonus 11. Credit cards and merchant card services are an excellent market online as well. The business to business market for services is very big, and there are some great profit margins to be made on moving people to merchant card services. Some credit card companies are offering bounties, or payment per customer, for referrals, but they don't tend to add up to much. Still this market obviously has a major market online.

This is a simple overview of the best selling products on the Internet; subjects like pets, investing, and career development are major categories that we have not touched on. Look for more growth in these industries as affiliates programs spread.

In the next chapter we will cover the places to go and find your affiliate programs; for now use the following list to keep up with the latest trends in the market.

Remember these sites, because they keep up to date continually with the growth of the Internet. This is an important tool in determining what affiliate programs to offer.

One last word of caution; don't expect to stay with all your affiliate programs for a long time. Test them and move to the ones that give you the most sales. Be flexible and set your goals so that you can gauge whether or not it is worth your pursuing for a long time.

Charts, graphs, industry trends and projected growth

Charts and Graphs re: Sales Projections on the Internet and types of product purchases:
http://www.cc.gatech.edu/gvu/user_surveys/survey-1998-04/reports/1998-04-Netshop2.html

Spending by location (USA, Europe, etc.), gender, experience, and age group:
http://www.cc.gatech.edu/gvu/user_surveys/survey-1998-04/graphs/shopping/q49.htm

Web vendor to traditional vendor comparison, suggesting that the web has certain positive attributes and credit safety is not an issue:
http://www.cc.gatech.edu/gvu/user_surveys/survey-1998-04/graphs/shopping/q6.htm

Opinions on Providing Credit Card Information:
http://www.cc.gatech.edu/gvu/user_surveys/survey-1998-04/graphs/shopping/q4.htm

Which of the following features are MOST IMPORTANT to you personally, when shopping, or considering shopping, on the Web.
http://www.cc.gatech.edu/gvu/user_surveys/survey-1998-04/graphs/shopping/q66.htm

How often do you use the web for shopping for personal reasons?
(including gathering product/service/vendor information, placing orders, making purchases, and/or customer support)
http://www.cc.gatech.edu/gvu/user_surveys/survey-1998-04/graphs/shopping/q80.htm

How often do you use the web for shopping for professional reasons?
http://www.cc.gatech.edu/gvu/user_surveys/survey-1998-04/graphs/shopping/q81.htm

Listed below are some of the alternative manners in which you might purchase from Web vendors. For each scenario, please indicate how likely you are to buy a competitively priced product/service that you really wanted. (In each case assume that you are providing the needed information, and receiving the product/service directly from the vendor.)
http://www.cc.gatech.edu/gvu/user_surveys/survey-1998-04/graphs/shopping/q5.htm

How often do you make a decision to purchase (or not to purchase) a product/service based primarily on information that you have gathered on the web whether or not you use the web to make the purchase?
http://www.cc.gatech.edu/gvu/user_surveys/survey-1998-04/graphs/shopping/personal/q99.htm

Growth Projections of the Internet
http://www.c-i-a.com/199809iu.htm

Forrester Estimates Worldwide Internet Commerce Will Reach As High As $3.2 Trillion In 2003
http://www.forrester.com/press/pressrel/981105.htm

A statistical snapshot of the net today, and a glimpse of where its going tomorrow.
http://www.emarketer.com/estats/welcome.html

How many are online throughout the world?
http://www.nua.ie/surveys/how_many_online/index.html

Choosing the Best Affiliate Programs For You

The old saying in marketing applies to affiliate programs; there are two important keys to any business:

1. Making the right offer, so that it clearly outlines the benefits to the customer
2. Making that offer to the right list, the people who are interested in the product or service.

In this workbook you have identified what you would like to do and the best selling products online. Now is the time to put these two together and select the affiliate programs you would like to offer at your Web Site.

If you are looking to select affiliate programs, there are numerous sites popping up all over the Internet. Many great directories are out there in a market that is fast becoming crowded. Two of the oldest and most reliable Web Sites to look for affiliate programs are:

1. Refer-It, http://www.refer-it.com; they judge the top affiliate programs and rank them.
2. AssociatePrograms, http://www.associateprograms.com, which is run by Allan Gardyne and is a rich resource of information on the subject.

Before we begin, remember that there are two ways for you to affiliate with these programs:

A. At your own Web Site, which you update periodically to reflect changes in your product line and marketing;

B. Via your email/ezine list, which can operate without a Web Site.

You would be surprised how much more effective a good ezine/email list is than a Web Site. Web Sites are important but don't expect your visitors to be so energetic that they seek you out. If you have a Web Site, be sure to capture email addresses of your visitors and remind them to come back.

You will hear this theme throughout this book for a reason; the companies that do well have great email lists. Their customers don't mind hearing from them. Amazon.com has an email mailing list, including sending out to its own affiliates. Xoom.com has built its entire business on email contact, follow up, and sales.

Most affiliate program providers seem to be in love only with banner advertising at your Web Site, which is not necessarily the best way to go. Banner ads get a small amount of traffic and sales generated (see the next chapter for details). Consider this when you are choosing an affiliate program.

Here are the rules to follow when selecting an affiliate program:

1. **Get paid well for whatever you do.** Make sure that you have a good selection of products to choose from. If you are selecting more than one affiliate program, make sure they fit together logically, ie, don't sell flowers and hunting gear.
2. **Select your affiliate program based on your target audience and your ability to contact them.** Be wary of signing up for every program under the sun and hoping that a few will work out. Even though most of them are free, the cost in your time and lost customers is tremendous. Confusing people by posting as many affiliate programs as possible will not work.
3. **Make sure that the sign up procedure is easy to fill out.** If you find it complicated to begin with, you may find it hard to work with the affiliate provider long term. Also be careful not to pick up an extra work load with an affiliate program. Amazon.com, for instance, insisted that people only promote recommended books at their Web Sites. While the logic is good (an endorsement is much more powerful than simply posting a banner ad at a site), the delivery was flawed. Affiliates wanted an easy way to send traffic to Amazon, even if they got paid less. The result was a growth of this program to include raw links and searches from other Web Sites at a reduced commission.
4. **In keeping with this workbook, take time to find the products you would like to offer.** Don't sell anything you don't really believe in, or from a company that is not reliable. One bad experience can ruin your customer's opinion of you, even if it is the affiliate company that is the source.
5. **Check the way the affiliate program tracks and records your orders.** Do they offer you statistics, email notification, and are they good about paying on time? Read about the rules and the system they have set up. Do they offer a third party auditing service? Have people complained about this service?
6. **Do they give you the marketing tools to help you sell more?** Look for banner ads, free reports, text ads that you can use in an ezine or classified advertisement. The more you have to create, the bigger the burden on you. But also keep in mind that if you are really selling well with a company, you should look for innovative ways to incorporate this into your business. Are they willing to go along with your innovation?
7. **Finally, make sure that you have some way to generate long term revenue.** Few affiliate programs can afford to generate traffic back to your Web Site. Do your best to capture information about your visitors and your buyers. If you find that someone bought via your Web Site, send them a thank you note as well. If you let the affiliate provider do all the work, you will lose a long term customer. Make sure you build your customer list.

Here's a checklist from Refer-It to help guide you along the way.

AFFILIATE PROGRAM CHECKLIST

You can find this updated CheckList at Refer-It, http://www.refer-it.com, the leading search eugine for Associate/Affiliate Programs

1. Does the Program allow only certain sites to join (e.g., specific demographics, minimum w and focus of the site)?
2. How long has the Program been in place?
3. What sites are currently in the Program?
4. What form of compensation is offered – actual cash or only store credit for their product or
5. What are the financial terms of the agreement -- a percentage of the transaction or a flat fee stay the same, or change with the amount of volume you send them?
6. Is there a set-up fee, either in terms of dollars or traffic?
7. How will the referral be tracked? Will a third-party audit it?
8. How is reporting of actual activity done? How often is payment made?
9. Do you get paid on only the first purchase or on every purchase? What if your lead returns later – do you still get paid a fee?
10. How long is the agreement in effect? What is the "out" for both parties?
11. What is your responsibility to promote their product on your site (banners, buttons, links)
12. Will your visitors find these advertisements valuable or annoying?
13. Are you sure you want to give revenue away to another site? Perhaps you should do your merchandising. Visit http://www.refer-it.com for more information on setting up your own pro

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The Seven Keys to Success for Affiliates

If you are an affiliate who wants to increase your SellThrough, you are in luck. Remember read your complete, 7 Step Affiliate Action Plan. Discover how to increase your traffic and sales at your Web Site using tested, proven techniques. This 30 page Action Plan is yours to download at our Web Site.

Affiliate programs may seem an easy way to sell. The problem is, most people focus on a one shot sale. They spend all their time chasing new customers, trying to sell them, and then forgetting about them. Without a good sales process and target marketing, sales will not be high. Without generating traffic to your site, you will not sell at all. If you do not follow up with your loyal customers who have bought (talk about a sign of trust), you are wasting your time and money.

The statistics prove this out; first time sales will generate, at best, a 5% purchase rate. That would be an excellent result; most often it is between 1-2%. That's one sale per hundred visitors!

Repeat sales to a loyal, buying customer base is much better; statistics show that customers who have bought once will respond much better to your offer, more like 20-30% purchasing. That's 20 customers per hundred compared to one per hundred. Remember this statistic as you market.

Someone who buys from you once is more likely to buy from you again and again. Make sure you treat your customers with respect and build up your list of customers. This is the most crucial part of your business. Affiliate programs give you multiple products to offer your customers, but make sure you take the same common sense steps you would in the real world.

Becoming an affiliate for other Web sites' products and service is a great idea if you take the right steps. The following are things to look for, and ways to plan out what you are about to do.

1. Sell One Thing and Sell it Well

Web flea markets don't work for the most part. The Web is a virtually free publishing medium that allows people to offer anything quickly and easily.

This is also the weakness of this "free" distribution system called the Internet. It is free in terms of printing costs, but not in terms of time. A Web Site with tons of products and services is a tricky venture to succeed with.

For example, most people have 3-4 books in mind when shopping. Why would you approach them with 3 million titles? The same logic applies to what you are offering. Focus on a few good products and sell them well.

So many Web Sites try to offer everything under the sun; this approach is confusing and has never proven to be a good basis to sell. Focus on a few products and sell them very well; then follow up to offer other products and services.

Think of it this way; if you have ever been in a restaurant with children, you will notice that waiters often approach them differently. Instead of showing them a whole slew of choices on a menu, they point the children to one or two choices. The parents are happy, and the child can make a simple choice. Apply this same approach to your Web Site; focus your visitors on just one or two products, and sell them very well. Do not confuse the issue by trying to sell them everything on one visit. People simply do not buy things that way.

2. Get Good Profit Margins

Amazon.com is the leader in affiliate programs, which is surprising. They pay 5-15% per book. Books are often sold for less than $20.

At best, you are working for tips like a waiter, at $3.50 a pop. Unfortunately, if you do not have a busy restaurant, this deal will yield little or nothing.

Let's say you want to make $1,000 a month; you would have to sell 286 books to reach your goal. That is a huge volume.

Now compare that to a $50 book; your best case scenario becomes $7.50 a book. You now have to sell 133 books to reach your $1,000 goal.

With Web Success, our affiliate channel offers a 25% commission on our $97 training system, the entry level to our network. You would earn $25 per sale. To make your $1,000 goal, you would have to sell 40 of these packages. If you were to sell our Deluxe training systems ($497), you would earn $250 per sale.

To reach your goal, you would have to sell 4 deluxe systems. As you can see, it is more realistic to sell 4 products with a higher profit margin than 286 books. It is simply a case of volume; will your efforts be rewarded with a good profit margin? Make sure you count this before doing anything.

Believe it or not, it takes the same effort to market the cheaper book as the more expensive one. Do your math and see which products sell the best, and remember to lead with an entry product that is not too expensive, and follow up with the more expensive products later, after you have built up the trust and name recognition needed for a more expensive purchase.

3. Don't just Display a Banner Ad and hope for the Best

Many affiliate programs put up banner ads; the visitor simply clicks on the banner ad and goes to the company's Web Site to make the buying decision. The problem with banner ads is that 1-2% of people will actually click on them; so if you generated 1,000 visitors in a month, only 10-20 will even click on the banner ad. If you even convert 5% of those to sales, you will make only one or two sales a month.

It is all a game of numbers; if you have a site with great traffic, this can change. But volume businesses are difficult to profit from; the bottom line is, do more than just put a banner up at your site.

The same logic applies to posting at newsgroups; because it is so easy to post to many newsgroups, people believe that volume will generate results. The results have proven to be awful; mass newsgroups postings, like bulk email, are dangerous and rarely yield the returns. They are more a headache than a benefit in most cases.

4. Use Content, Updates, and Keep your Site Consistent

Remember that you are selling a product or service; you are not just posting an advertisement at your Web Site. Use content to enhance what you are doing. Amazon.com encourages this in their reseller's program; you are urged to review and recommend specific books for your target market. If you just send people to Amazon's Web Site, you get a smaller percentage of the sale.

Amazon.com had the right idea; a product recommended to a customer is more effective than a million titles at your Web Site. A consumer likely has 3-4 titles in their head when they shop; point them to the right ones.

Give them a zillion choices and you confuse them. So keep updating your site, keep it consistent, and try to emulate the page that you will be linking to. If it changes, it tells the customer they are in a different retail space.

This may affect their purchase decision; anything that makes them notice a difference can interrupt their impulse to buy. Keep your customers comfortable and within the same purchase decision.

5. Target your Market

If you try to sell to everyone, you will sell to no one. It is that simple.

It is amazing how people do not target their market. They try to sell everything under the sun. Once again, it is the illusion of a volume business. If you think this will succeed, go down to your local retail store. Look at the small profit margins they have to deal with. Retail is a brutal game. My friend Jonathan Mizel has a great saying; sell expensive products to rich people. More importantly, target your market and make sure they can afford what you have to offer.

And make sure you can afford to live on what you will be earning.

6. Market Your Site

The bottom line is that you will have to market the site and the offer. If you just put up a number of affiliate programs, hoping one will pull, you are taking the magic dust approach. It is like the lottery; you may win, but the odds are against you. Take the responsibility to market and promote your offers; find out where the customers are and drive them to the site.

By many estimates, you will have to generate 500 visitors a day to make decent money; that's over 15,000 visitors a month. Your minimum amount of visitors should be 5,000 for a successful program; it is simple a case of math.

One percent of 5,000 is 50; can you make enough money on 50 sales? Not if you are making $2 a book at Amazon.com. But if you are making $25 a sale, you could make $1,250 per month. Keep your expectations realistic; realize that marketing and sales are a numbers game. Know the numbers you hope to generate and focus on those affiliate programs that give you the best bang for your time and effort.

7. Take Precautions to Make Sure you Get Your Share

Like any business, check out what is going on. Affiliate programs are simply your chance to resell other's products and services. Make sure you believe in what you are selling.

Take the same precautions you would in the real world; what will be your investment in time, and money? Have you actually tried the product or service? A personal recommendation and belief is much more powerful than selling something simply because it has a good profit margin.

Are you just generating leads for someone else? I have seen affiliate programs that have no intention of paying you for what they are selling. One client had to wait six months after making tremendous sales for a company to simply get paid his commission.

Make sure you get paid for what you sell. Often this means waiting 30 days for a monthly check. Sometimes it means quarterly payments, like Amazon.com does.

Five Positively Profitable Marketing Techniques Every Affiliate Mnst Know

If you understand all the elements of setting up an affiliate program, a natural question will arise:
How do I get enough traffic to my Web Site to generate sales?

The key to getting traffic is to put your energies in what will bring you back the most value. It's like deciding where to put your efforts so you'll get the most return.

Choosing how to generate traffic means understanding that you have to adapt your efforts to see which is working best. Think of it like the choices you make for your house; if you had to choose between putting in a bathroom, which returns most of the value of your investment, versns putting in a pool, which is more fun but returns nothing on your investment, what would you do?

Most affiliates, unfortunately, choose to put in the equivalent of a pool at their Web Site. They focus on short term marketing that brings them little return and demands enormous expenditures.

Make your marketing time and money go further by focusing on the following 5 techniques. These will cut your time, costs, and headaches down, and help to boost your sales.

1. Ezines
2. Search Engines
3. Banner Ads
4. Press Releases
5. Internetworking: Strategic Linking Strategies

E-Zine- The e-zine is just a fancy way of saying an article or collection of articles published online. Most of these come in the form of "newsletters" and consist of various information that will hopefully be of value to those subscribers and visitors. The *focus and purpose* of the Ezine is to attract attention to other sites and services or products that will be available to purchase at a profit for the company offering it. Information is always of value and is the best way to get the

interest of the person. You must offer some idea or concept that they cannot find anywhere else, or at least give that impression. Then, after giving a taste, build the desire to form that mental need for more.

To properly measure the success of an ezine is to record the responses from the replies of the customers. If you are promoting the website of a friend by sponsoring his information in your newsletter, perhaps an open dialogue with that friend will enable you to track your success through his response, and this may up the value of your newsletter to him and others, opening other opportunities.

1. Always **offer something for free** to spark interest in the Ezine.
2. **Publish or Swap Articles** in other Ezines if possible.
3. **Focus on Ezines that are related** to your product or service.
4. **Build Business to Business relationships** with publishers
5. **Gain access to ezine recipient list** and offer yours.
6. **Use ideas from others** in tailoring your offer.
7. Search out for different and new Ezines and **evaluate** them. Did they have important information, are they sponsored by a company or and individual, what is their method of delivery, their topics, is it worth pursuing and contact owner to see how we can be published as well.
8. You can use search engines to **find access to ezines** or you can go directly to *related subjects* columns and find a wealth of publishers, companies and individuals who are eager to provide this information. There is email, fax, and mail access available from most publishers.
9. Sites to go to include:
http://www.dominis.com
http://www.bizweb2000.com/wwwboard/messages/1488.html
10. Most of all, be sure to develop your ezine list. If you send out messages regularly to your list, you forge loyalty with them. The next time you make an offer, they may remember you. Without an ezine, you will be sending out messages to people who don't know you. Even worst, you may spend all your time marketing to strangers, a less than 5% game of sales...more like 1%. More on that later…

Search engines are the simplest solution. Sometimes too simple. People just believe in these things, and I don't know why. It's not like you find anything half the time you are looking in. I've never been through so many dead ends to get where I'm going.

Search engines perform a function of cataloging the Internet, but I use them for finding niche markets. Once I go there, there is no point in searching any more. Here's the criteria I developed:

1. If you can name your product or service in four words or less, search engines are something to consider.

2. If you can afford to always focus on them and stay on top, they can be a powerful tool. Be prepared to fight this battle every week though; if your keyword is one lots of people want, beware!

3. It is better to pay someone on a monthly basis, or a per click through (per lead) basis to test these out. Services run from $100 to $1,000, with clickthroughs costing anywhere from 5 cents to a dollar. Twenty five cents seems to be a norm.

4. Places to visit are a good reason to use search engines as a form of advertising

Here's some good ideas for getting to the top of the search engines. Please understand that every search engine has its own unique way of looking at things. It is worth it to invest in one of the many excellent subscriptions for search engine positioning, such as Planet Ocean Communication's book at http://www.searchenginehelp.com

Some tips for getting one top:

1. Do not waste your time posting to hundreds of search engines; post only to the top 7 including Yahoo, Lycos, Infoseek, AltaVista, WebCrawler, Excite, and Hotbot. This is where 90% of your traffic will come from, and it is best to focus your energies getting on top of those.

2. Create doorway, or portal, pages to your site for each individual product you sell. Search engines used to frown on this, but as long as you don't play too many games, this is a great way to get on top. The logic is simple; create one page featuring one product and word it well enough that it passes rank at the top search engines. Use this for all your affiliate programs and even when you market, drive people to that single page.

3. Understand how the search engines look at what the keywords you are submitting:

- Many look for how early on a page you put a keyword, especially after the first <BODY> tag.
- How many times a word appears on a page; don't take this to mean you should just repeat words. The search engines have improved their technology and incorporate standard English rules. Repeating words is not an effective way for getting on top any more.
- How many other Web Sites link to yours. Infoseek is well known for using this as a criteria, and like all things with search engines, it may change. But it isn't a bad idea to get many links.
- The ratio of keywords to total words is also judged. If they read too many keywords to total words, meaning that you are simply repeating again, it can work against you, so be careful.
- How close keywords appear together on a page; this is again to target those simply repeating key words and phrases.
- Where the keywords are located; some search engines rank highly if they are in the title. Only a few now look in what are called "META" tags, which appear at the top of the page.

Some also look for words as links, in headers <H2, H3, etc.> and rank this as important. Again this varies from search engine to search engine.
- Grammar; believe it or not, some try to check your grammar to see if you are cheating.
- There are specific places search engines look for keywords, including::

Title
Meta Tags (Description and Keywords)
Headline tags like H1, H2, and H3
Within links
In the actual copy on your page
In "ALT" tags, which are used to describe graphics and sometimes a good place to hide keywords
In comments tags like this: <!-- my comments here>
Some even look in your domain name to judge you.

Maximize Your Banner Ad Results

Banner ads are a common tool for generating leads, but one that is often used ineffectively. Instead of relying on random impulses, banner ads should lead to a contact point, a specific offer, and a way to follow up with a customer. After all, impulse buys are just one small part of the entire game; if they come to your Web Site, your online storefront, you want to capture email information so you can quickly and effectively invite them back to consider buying again. Here's ten tips on improving results online with banner ads:

1. Don't use Fancy Graphics

Banner ads work when they immediately deliver a message and load quickly. Keep them as small as possible, 5-10K tops (that is file size). Forget using photographs or actual pictures. Focus on text, your headline, and keep the colors as simple as possible.

Use four colors: Red, Green, Blue, and Yellow. Use black type and have your main headline, or main words, stand out in a different color. These four colors will allow you to save your images in the smallest format possible.

2. Make it familiar

Make it familiar and keep it small. Many banner ads are limited to small sizes -- 400X50, 480X60 (that's width versus height, measured in pixels...your average computer screen is 640 X 480 pixels). Your banner ad should be the size it is allowed to be, and the sizes listed here are fairly standard. Don't stray too far from these; the most successful banner ads follow these standards.

3. Use the Windows Interface

The most successful banner ads emulate a familiar computer behavior. If you visit the link at Smart Clicks, you'll notice that the top banner ads look like the Windows interface. Pull down menus, OK/Cancel buttons, scrollable text, and check boxes dominate.

Please understand that none of these actually work in the window, you are just supposed to click on them. What they do is make people take an action they are familiar with. Since over 90% of your visitors use Windows PC's, they are used to clicking on these.

4. Use underlined words that look like links.

If you want to really increase response, under your headline words in blue. This makes them appear to be links. Links appear on your Web Pages, and people know to click on them.

5. Have a person staring out at you, make it personal

It is an old advertising trick to have a person, usually a woman, staring out from the banner ad (or print ad). Ever notice how a computer companies who want you to order via phone have an operator staring out at you?
The goal is to make it live, as if a living human being with a real identity is on the other end.

6. Use Click Here, OK buttons, and action words

The goal of a banner ad is to get them to act. Always include some action for them to do, like "Click Here". OK buttons work well, as do action words; Act Now, If you Want to Win, Click Here...you have to ask them to act.

7. Use "You" in your headline

The headline trick works in banner ads as well. For example, a Yahoo white paper measured banner ad results. The most successful ones used headlines with the word You or Your. Address your surfer directly to get them to click.

8. Use small animation

A small mouse moving over a banner ad, a blinking cursor, a blinking "Click here" button, and many small animations have proven to elicit clicks. Remember that the human eyes notices movement on a screen. Just make sure the movement is repeated a limited number of times, and let it stop. Don't let your animations keep going, it will get people queasy.

9. Send them to a Portal Page

Your banner ad should send the person who clicked to a specific page that has to do with that banner. Keep it limited to one product, and one offer. Remember that banner ads just create click throughs; it's a good idea to try and grab email addresses instead of selling people from banner ads.

10. Keep it Simple!

Create a banner ad that delivers an immediate result. If you are giving them something for free, or a discount or coupon, get them to fill in some basic information and reward them. Follow up to turn your banner ads into lead generators.

Banner Ad Resources

What works (Active Banner)

Basic costs, glossary of terms, established click-throughs, etc.
http://www.wilsonweb.com/articles/bannerad.htm

Excellent resource for banner advertising information for the newbie
http://www.markwelch.com/bannerad/

Banner advertising consulting
http://www.wprc.com/wwpc/consulting_banners.shtml

Banner Ad Placement Study
http://www.webreference.com/dev/banners/research.html

Getting started, free banners, and excellent advice
http://www.whitepalm.com/fourcorners/bannerdesign.shtml

Conclusion: Based on 2.1% average click-through move to Active Banners
www.activebanner.com

Sites to advertise on and why

Good explanation of the "big boys" services and what you get
http://iaswww.com/iashome/promotion/bannerplace.html

Directory of banner ad placement services
http://advertising.utexas.edu/world/WebMedia.html

Design Firms to use

www.adnetintl.com
www.animation.com

Press Releases

Press releases are one of the most effective ways to get your name in print. There is a whole unique approach to using press releases. Remember that an editor or "decision maker" is basically sitting at a fax or email, looking for good stories.

There goal is to get readers interested and sell more advertising. So don't just send out a glorified press release bragging about your product or service. Focus your efforts on promoting the newspapers and magazines to interview you as an expert about a subject.

Here's how to get a press release going, followed by a sample:

1. Put all your efforts into writing a good headline. Your headline and first sentence are what drives the whole process.
2. Be sure to put your contact name and phone on the upper right hand corner of the page, and for immediate release in the upper left hand corner.
3. Lead with short sentences and prepare a quotation from whomever is the expert to be interviewed, likely you. Make it newsworthy so you can help the editor do the job they get paid for. Your job is to get interviewed.
4. Don't expect consumers to read this until you get in press.
5. Email is not always the best way to submit press releases; fax still works well for most print publications.
6. Target specific publications within your industry; don't just send out your message to anyone you think might be interested. Save yourself some money and don't waste the editor's time; they will not like it if you come back after doing this.
7. Visit these sites for some more information on how to create and distribute press releases:

Paul Hartunian is a master of press releases and has great information online at:
http://www.netrageousresults.com/pr/

NewsBureau is an excellent service (with an affiliate program itself) at:
http://www.newsbureau.com

Let's look at a sample press release for a company; notice the formula, the way it is written, and how it drives the editor to interview the expert. This one press release resulted in over 150 visits to a Web Page, not bad for a very limited run of an extremely exclusive, niche product.

For Immediate Release **Contact: Scott Cathcart**
(415) 292-5390

Announcing The Wall Street Breakthrough: The Secret Investing Tool of the Elite Is Finally Released to the Public

How to Protect Yourself from a Stock Market Meltdown
Without Paying Taxes: The 90% Stock Loan^{SM}

Date: Thursday, November 12, 1998
SAN FRANCISCO, CA.
For Immediate Release

What was once a secret tool of the elite has just been released for the first time to the public.

First Security Capital (FSC) announced today the release of a financial tool that previously has only been available to select high-net-worth individuals -- the 90% Stock Loan^{SM}. Their Web site, http://www.firstsecuritycapital.com, allows investors to manage their portfolios like the elite. This innovative strategy empowers them to avoid taxes and protect their liquidity with little risk exposure.

"This loan product gives investors 90% of the value of their stocks in cash without taxes and allows them to remain invested -- and sleep at night -- even if the market drops 1000 points like it did earlier this year," says Dr. Charles Cathcart, President of FSC and a nationally recognized financial authority.

Dr.Cathcart was one of the early contributors to the financial tools now know as "derivatives." In 1987, he led a team at Citibanks's New York Headquarters that introduced a new form of "commodity derivatives" -- now a multi-billion dollar business in the financial world.

This new stock loan has previously received critical acclaim from Wall Street Journal, Forbes, Barron's and Investor's Business Daily. Today's open release of the 90% Stock Loan^{SM} is an exciting development for investors, giving alternatives to high risk portfolios and capital gains taxes.

Dr. Cathcart is an excellent interview who gives a fascinating outlook on the future of investments, based on his success as senior executive and consultant to many large multi-national firms including Citibank, Chase Manhattan Bank, W.R. Grace, and Sumitomo Bank.

To schedule an interview with Dr. Cathcart, call 415-292-5390 or email info@firstsecuritycapital.com.

Internetworking: Getting Other Sites to Link With You, As Well As Targeting Sites To Generate Traffic in Your Direction

While this is the subject of our final chapter, the term "Internetworking" means running out a strategic linking strategy. You target the Web Sites that are related, as well as drawing your target customer base. Here's some criteria to use as you surf the search engines and directories for sites.

Why is a website worth looking at, what to look for when selecting a site for research and marketing possibilities:

1. Search for related topics and words that deal directly with the item or subject you want.
2. See that a site is professionally created and look for links that go to other credible sites. You are looking for the few players, the circles of influence, that have developed for a specific subject.
3. Look at the main pages by shortening the URL to the minimum, review it and add to favorites if it looks good enough to save and is related.
4. Does the site offer banners and deal with the same general subject.
5. Look to see if they have an active directory and if it is one that would be viewed by your potential customers, then see what it takes to be listed on that site e.g., free, barter, or fee/commission.
6. Review site and directory and see if noted people have been listed; this would be a good tip that the directory is worth being listed in.
7. See if discussion boards are listed on site and review them if possible.
8. Notice if there are offers to promote your business in the site.
9. See if sites ask for exchanges of information and bartering.
10. Notice if the format is similar to the one you have, the same ideas etc....

How To Position Your Affiliate Programs At Your Web Site For Maximum Profits

The most important part of your Web Site is a clear and focused offer. Many Web Sites try to be everything to everyone, which is impossible.

Whatever you offer, focus on the word "Just". "Just email marketing". "Just Generating Leads". "Just selling books" (Amazon.com is an example of this; will they succeed by also selling music CD's?). The following section will show you how to position your offers at your Web site; consider any offer an affiliate program that you are working with.

What's the point of your site? Focus on what you deliver best, and deliver "just" that.

1. Establish as Many Points of Contact Possible on Your Home Page

Never expect a visitor to return to your Web Site. Use your home page as a place to generate emails, phone calls, faxes, and inquiries. Use your autoresponders wisely; get them set up to answer a basic guestbook (tell us why you visited), surveys, sales letters, mailing lists, and contests. Gathering email addresses is really the name of the game.

2. Where to Place Your Affiliate Offer So They Will Notice

A Web Site has a few hot spots which will literally triple your response rates if you use it right. The screen a visitor looks at is wider than it is tall. If you want a hint, take a look at the computer interfaces on the two most popular machines, Windows and Macintosh. Most of the places to click on are located on the top and bottom of the screen; the left hand margin in particular is a favorite place to put your initial offers on a Web Site.

Both place all the action points, the points for people to click, in the frame of the screen. The hottest spot to put your words is the upper left hand corner. People who read English read left to right. Their eye naturally drops on the upper left hand corner.

Place your first point of contact in the upper left hand corner. Develop your important sections down the left hand side. Use the bottom of your screen as well, especially the lower right hand corner. This is where their eyes scan.

3. How To Use Web Pages as Optional Entry Points, or Portal Pages, for Affiliate Programs

You can use more than your home page to get people exploring. If you want to promote a specific product, you can direct them to that Web page. Then give them a place to contact you and make it clear how they can explore further. Give them one choice; it really works. Remember the search engine strategy we suggested? It keeps coming back; give them one choice.

Summing Up

The reason most Web Sites fail is that they fall in love with an idea, and never think of what their customers want. Be sure you focus on:

1. Researching your customer base and finding those select places they go for information and entertainment. Find a way to drive them to your site.

2. Study your competition continuously. Always be on the look out for people to partner with. As one Silicon Valley exec puts it, partner with as many people as possible, because you do not know which ones will succeed.
3. Commit to increasing sales AND decreasing costs. A sales only approach means you miss half the value of the Internet. Create a Web marketing plan and apply it, step by step. Evaluate your cash flow monthly, find out which promotions work, then sink your money into the one or two best places to generate leads and sales for your specific niche.
4. Focus on a few affiliate programs and sell their products. Do not overload your visitors with too many choices, or affiliate programs. Find 3-4 that generate revenues and stick with them; try to generate more sales from fewer affiliate programs.

Five Keys of a Great Web Site

Key 1. Save Time and you Save Money:
Time is the Most Precious Commodity

You have 30 seconds to make a sale at your Web Site. Make sure that your home page text and graphics do not add up to more than a total of 40K (just look on your computer at the file sizes). That will take about 15 seconds to open up, which means you have to hit them with your message immediately.

Think of your site as having three reasons for your customer to visit. Focus on those three reasons and answer them quickly with headlines that link to specific pages. There is an old rule of design called the "Rules of 7"; never give them more than 7 perceived choices to make, or you will confuse them.

Keep it simple, and minimize your links. You can embellish on your other Web Pages, but at your front door, your Home Page, orient and:

A. Focus your customer on exactly what you offer, your affiliate programs, and why it will benefit them. Everything else is just commentary.

B. Show why they should believe what you are offering. Back up what you say with testimonials, what other people say about you. Have a page where you introduce the owner, with a picture, or show the track record of the business. If you are new and have no testimonials, focus on success stories and show why you follow the same model.

C. Make your site believable. Credibility is 50% of the reason anyone will stay at your site. Prove you can do what you say, and show the results. Put it in percentages, dollars saved or earned, leads, and compare it to your industry. Make the examples so concrete that there are no questions left. If you are beginning, partner with others so you can benefit from their experience as well. After all, every business began some time; don't let this stand in your way.

D. Get them to contact you immediately. Put your free report on an autoresponder, and get them to fill in a small form on your home page immediately. Do not create a home page without such a simple form.

Key 2. Color

The Web brings color printing to anyone; this is a scary proposition. People put so many colors up, it distracts. Adapt the following rules and you'll be safe:

1. Use just a few colors on your Web Page. One trick I use is to focus on the color blue for my links, dark blue for a new link, and then a lighter blue after they have clicked on it.

Try to use just 3 colors on your page; after all, computer screens are based on an RGB (red, green, blue) model for a reason. These three colors are the most reliable ones for looking the same on most screens Too much color just turns people off.

2. No more than 20 percent of your Web Page should be in color. Use white backgrounds, black text, one color for links, and keep your colors simple. Avoid fancy patterns or gradients, because while it may look good on your computer, it can look awful on others. Use color for your left hand border.

3. Use simple color lines at the top or bottom of the page to separate sections. If you use text as a graphic, make it a different color to separate sections of your Web Page.

4. Use your color to accent what you are doing, for key points of action, links, and places you want people to go to immediately. Have one main color for your page, and use the other two sparingly.

5. Color affects people psychologically, for example:

Yellow promotes optimism, but too much makes people uneasy.
White is associated with truth.
Orange is associated with fun, while red promotes appetite.
Black is the most dramatic color for backgrounds.
Blue implies authority, financial responsibility, and security.
Green means health and tranquillity.
Blue is the most popular color.

Key 3. Consistency

The style of your Web site should be consistent from page to page. Select a background and colors, then stick with them.

Web pages comes in one, two, or three columns. Ninety percent of the time, a two column format works best. Make your Web Pages about 600 pixels wide, with 20% (120 pixels) for a left hand border. This is where you put your table of contents, or listings. Use the rest to put your text, headlines, banner ads, and key offers.

Most of all, don't change your formatting from page to page. Use the same colors and standard look so people don't think about where things are. It should be easy to get around your site.

Key 4. Ad Copy and Testing

Like every other medium (print, radio, and television), it all comes down to your ad copy. Words are what make people respond and react.

Spend your time with your ad copy and test what works. See which headlines pull at your Web Site, and via email. Test and change these most of all, especially on your home page. Don't think of updating, think of testing your ad copy.

Key 5. Design

A Web Site should be easy to navigate, which simply means breaking down your offer into its own logical structure. Try to make everything accessible with one or two clicks of a mouse.

Write an outline of your ideas, then for each of your major subjects, write the name on a piece of paper. Put these on the floor in front of you, and circle them around your home page. If you find yourself branching out so much that there is little floor space, try to reorganize it.

The further you get from the home page, the more you need to edit. If you can make everything available in one or two clicks, you will make it easy for your visitor to quickly get through your site.

Make your files names descriptive as well, so people know what they are looking at. If you focus on writing a site simply, you will find that most sites break down into:

1. The Home Page, i.e. Table of Contents, to center everything around
2. Content that shows what you are doing, and that you know what you are doing;
3. Credibility building pages, like resumes, testimonials, and company information
4. Places to contact the business for emails, faxes, inquires, and phone calls
5. Points of Sales, where they decide to buy or not
6. Products/Service pages, to outline what you offer, the benefits, and the costs.

7 Warning Signs of an Unprofitable Web Site

1. Selling To Everyone Means You Sell to No One

If you do not target your offer, it will confuse your customers. People are not patient. In a recent survey, 73% of people claimed to be "insanely busy". If you do not develop a target customer profile and appeal directly to them, you will lose customers. And they will never come back to your site again.

2. Web Flea Market: Buy a Web Site or Get a Grocery Coupon

People are selling Web Sites, classified advertising, pre-paid legal services, long distance phone cards, and reminder services via affiliate programs...*All on the same Web Page!*

Think about this the next time you go to your grocery store. Do they offer to sell you a Web Site with your pickles? Flea markets diminish the value of what you are selling. Most people who own these sites tell me they depend on selling a high volume of low price items. How do I know this is a doomed approach? Visit their sites and see if there is any life there.

3. Huge graphics that make your site take 30 seconds to open, which is all the time you have to sell your customer on staying.

The worst thing about computers is that they enable us to do things we just should not be doing. Graphic design is a skill; most people get some Paint program and have absolutely no sense of size, or what the graphic makes them look like. If you want to SCREAM AT YOUR AUDIENCE AND BE OBNOXIOUS, then use big graphics.

The average screen is about 600 wide X 440 high (pixels). Keep your graphics down to less than 25% of this screen at most, 150X110 as a general guideline. You can make them wider, just beware of making them too tall. At some sites, all you see on the first screen is a huge company logo.

4. This site has XXXX number of visitors (How many bought?)

Does it really matter to anyone how many people visit your store? The sure sign that a store is visited often is the success and profits of the owner. All the rest is empty bragging.

5. Explaining what technology you use, frames, etc.

To this day it amazes me how people explain the technical design of their Web Page. If you use any reference to technology, you are distracting your customer. Keep it simple.

6. Download the following plug-ins to get this site working.

No one will spend ten minutes downloading the plug-in to see your cutesy message. Avoid plug-ins, with the possible exception of RealAudio.

7. No place to send an email, or gain a free report.

After spending all this time to create a site, most people forget to ask for inquiries. They just think people will work hard to contact them. Assume that a person will visit your site once, and never return....unless you remind them to via email.

How to Double or Triple Your Profits:
New and Easy Ways To Get Customers For Life

Develop your Lead Product, Back End Product, and Other Related Products and Services

Direct response online marketing is based on eliciting a response from your visitors. That response could be an email they send you, exploring your Web Site, or an actual purchase.

Think through your affiliate program and forge your long term relationship with your customer by building a sales process that takes them from first contact to close, then follow up with more products and services – more reasons to visit your Web Site and buy. It all begins with considering your product line, and the first product you introduce them to when visiting from your affiliates' sites.

A. Your Lead Product

A lead product is the first thing you offer a customer to buy. Think of when you first are introduced to a person, or a business. You have never worked with them, and even if an affiliate has given your site a glowing recommendation, the proof is in the actual product.

The fact is, you are qualifying your customers, and they are qualifying you. Think about why they would not buy what you offer on first contact and see if you can find a way around this objection to start the sales process.

Your lead product should be a low cost entry point to working with your business; for example, statistics at a leading Internet commerce center found that 90% of customers purchased products under $100, and of those almost 80% bought products under $40. This shows that there is little or no price resistance below $40 for these retail products, a good starting point if you were to build your customer base.

Your lead product should not provide a barrier to entry to your business; for example, if you are selling a piece of software for $450, you can offer them a free download. Even better, you can offer a simple how to training manual on how to use this piece of software, with simple screen captures showing them how this product actually works. If you give this away for free, then you get customers who have not qualified themselves. But if they are really interested in buying a $450 piece of software, a good training system that shows the value of what this software does would be worth testing. Offer it for less than $40, then follow up once they buy.

A buying customer is a more qualified lead than someone you give something to, so be careful of offering things for free just because you think that's what your customer wants. Just make sure that you show the value of what your software does; for instance, if you are selling a statistical software that shows how many visitors come to a Web Site, create a training product that shows them how to use this information. You might even be able to offer a book from Amazon.com, or join another affiliate program that offers such a product that fits your customer's need on first contact.

B. Your Back End Product

If your customer purchased a $39 training program to learn how to take advantage of statistics for their Web Site, then the actual software itself could be your back end product, the next thing you offer them. Your affiliate site has sent you a prospect who is interested in Web Site statistics and tracking; you sell them the training product so they begin the purchase decision, understanding why they should invest their money in the software.

Face it, a $39 decision is much easier to make than a $450 decision. The more expensive the product, the longer the sales cycle is the general rule. There are exceptions, like people buying plane tickets; we know what plane tickets cost and many people know that travel online is the best way to save money, so price resistance is less. But if you sell an expensive product, especially more than $500, there is more to consider. Why not offer your first time customers a lead product that trains them, and build your back end product as the more expensive choice?

Many times affiliate programs fail because they force someone to make an expensive decision. Get your customer to understand the value of that decision with a good lead product, then follow up with your back end product. You may find that what you originally wanted to offer sells more when it is a back end product, than if it is a lead product.

Don't believe this? Go out and shop for an expensive item, like a hot tub. Unless you have the disposable income to afford this easily, you will likely take time to make the decision. Which brings up another key point to your back end product; if your customer base can afford it and price is not an object, then lead with the item and offer them accessories to go with their purchase as the back end.

Face it, if your customer base can afford the hot tub, give it to them on first contact. Then you can create a back end product that compliments their purchase. If they need to think about buying it, find out what they are comfortable spending and make your lead product reflect that price.

How do you do this? Test, test, and test again. Research your market, and your customer base. Find out what is too little to spend, what is too much to spend, and what is just right. All marketing is based on testing, not on your assumptions.

C. Related Products and Services, Your Affiliate Opportunity

Let's say you have an excellent SellThrough ratio, and your back end products move as well. Your customers have just bought twice from you. It is proven (see next Key for more) that people who buy more than once from a business are significantly better customers than one time buyers. The logic is simple; buying your product is a sign of trust. Buying twice is a sign of great trust.

Honor this trust by finding related products and services to what you offer, and find a way to get these to your customers. You could affiliate with other Web Sites to give your customers these products and services. Let's say your lead product was a "How To", Fly Fishing video. Your back end product was a fly fishing reel you were offering. A related service to this would be fly fishing vacations; you could find an affiliate program offering these vacations and give more value to your customer.

By doing this, you develop a long term relationship and develop your business as the resource for their specific interest; in this case, fly fishing. When you do this, you will discover the long term value of your customer is the first purchase (let's say a $19 video), followed by the back end (your fly fishing rod, $400), and then followed by the next logical purchase (a vacation, upwards of $500).

Take this logic out further and you can find related products and services like camping gear, fishing lures, books on fly fishing, clothing to fish in like waders, and the list goes on. From one simple product – your fly fishing rod – you may be able to deliver products for a whole specific niche by not only maximizing the value of your affiliate program, but by using other affiliate programs to maximize the value of your customer base. After all, if they don't buy this from you, they will go elsewhere; good, loyal customers are what will keep you in business today, and five years from today.

The Complete, Online Marketing Action Plan

If you plant a tomato, and it does not grow, you do not blame the tomato.

You explore why it is not growing; does it need more sun, water, and/or better soil? What can you do to help that tomato grow?

Funny how this simple logic escapes people online. They plant their business, spend all their efforts on a Web Site, and do little if anything to market it. Then when the Web Site returns nothing, they blame the Web Site.

Even worst, they blame the Internet. They justify their failure by comparing themselves to Time Magazine (which recently claimed it has no clue on how to make money online), or Microsoft's shutting down of its entertainment sites.

They embrace the problem, instead of finding the solution. Meanwhile, they could be searching for the water (customers), the sun (an online marketing plan based on generating results) and the right soil (the Web Site) to grow their business.

While the corporations fumble, you can step up to the plate. Commit to a tested, proven sales process based on one factor: what your customers want. Let's explore how to do that right now.

Getting Closer to the Water:
How To Target Your Customers

No plant or human can survive without water. Your business cannot survive without customers. Target your customers by using the following strategies.

Search Engine Strategy

Most people try only to fool search engines, hoping that their customer will find them on top of the heap. In reality, the search engines are a better research/marketing tool for you than your customers.

Have you ever been to a search engine and found it frustrating? Why not absorb the frustration and use the search engines to lead you to your customer base.

Directories: The Power of Yahoo (www.yahoo.com)

Yahoo is the most heavily trafficked site on the Internet, because it took all these millions of sites and created an organized directory. It is a great place to start your search.

As you click through the various subjects, you will find groupings of businesses. You will also find related businesses, networks, and professionals that work together. Yahoo also has local directories; you can enter by zip code or search by state and find listings of local businesses.

You can click on any directory to go to a deeper level, or to go back up a level. Check out the words that appear here and write them down. This will help you collect keywords and categories for your specific customer base.

Also look for Web Sites that act as directories, or guides, for a specific subject. One guide is worth its weight in gold. For example, if you search for local businesses in Indianapolis , you will find a site called www.indylinks.com which acts as a local directory.

What better way to market locally then to discover who is marketing, and where? This is an excellent way to begin targeting customers whether you know who you are looking for or not.

Use Yahoo to help establish the meeting places your customers are going to. Look for small directories that specialize in a niche and harvest them for leads, networking, and researching what your competition is doing.

Concept Based Advertising:
Excite (www.excite.com) and WebCrawler (www.webcrawler.com)

Directories and listings will give you a good overview. Take the keywords and concepts you find and visit Excite. WebCrawler will soon become much more like Excite, with channels and special interests listed.

Excite organizes its pages by themes or terms; enter your keywords and you will see more related words suggested for you to look into. You can develop the keywords that your customer base is looking for with this approach.

See what sites appear as well; how are they grouped?: Check out the top 10 sites; why do you think they appear on top? Emulate what they do to improve your listing online.

Once you find what you are looking for, you will be within a click of related businesses and sites. Excite also reviews sites online, to give you an idea of which ones are best.

Newsgroups: Visit Deja News, www.dejanews.com and Lizst, www.lizst.com

A few years ago, newsgroups were the place to market. Today there over 50,000 newsgroups, with an estimated 900,000 posts a day, according to Deja News.

That's the good news; the bad news is that over 50% of these posts are spam. Newsgroups have run amok with wild claims and crazy advertising. You may still find your customers, but it is a headache.

Use Deja News to research, and use newsgroups to find out the Web Sites, meeting places, and areas where your customers are going. Since over half the posts are advertising, it may not be that great a place for you to actively promote yourself. But it is not a bad place to ask questions and research. Some times you can just check the FAQs for the newsgroup and find the best sites for that specific interest group. Finally, you can "spam the spammer", and sell to all those people selling.

After all, what better customer than someone out there trying to market their products and services?

One final idea is to visit Amazon.com, www.amazon.com, the online book store. Enter your keywords and see what comes up. You will have more information on the products and services related to what you are offering. More importantly, you will know where you customers are, and how to contact them. The only cost is your time.

As you start to search for your customers, make a list of:

1. Keywords related to your business; use long and short forms of each word. For example, if you are looking for consultants, use the words "consult" and "consultant" and "advisor" and "consulting" , and so on. Microsoft Word has a Thesaurus that will suggest related words for you as well.

2. Web Sites that act as directories for your specific audience. For example, if you are targeting local customers in the Indianapolis area, find local directories, listings of their addresses, and professional associations.

3. Email addresses and names of sites you visit. It is much more powerful to name the owner of a site, and the name of their site, in your contact than to send out spam to millions of Web Sites. Personalize your direct email campaign by focusing on hundreds of Web Sites, instead of millions of addresses.

4. Be sure to visit http://www.lizst.com for many mailing lists you can sign up for and at least do some market research.

The Most Powerful Secret Weapon Every Affiliate Must Have

If you look over this book, you will see that setting up a business online is not something that happens instantly. You have to plant the seeds and help grow your garden of customers.

The most powerful weapon you have is email; it is also one of the most misunderstood. The people who built the Internet, the techies, absolutely hate anything to do with email because they consider it spam.

Spam is a term for sending an email without thinking who it is going to; it is so simple to send out hundreds of thousands of messages, that people forget to care about who is getting what. Yet if it is not done as a free for all, but as a targeted approach, direct email can work very well.

Here's why; your initial advertising will likely only sell 1-5% (tops) of people who come to your Web Site. Most people accept that and delude themselves into thinking that people will be energetic and keep coming back to their Web site.

Nothing could be further from the truth. What these affiliates are doing is digging their own grave, because they do not make it easy for the customer to work with them. If you decide right now that your customers are incredibly valuable, then you will do everything in your power to make sure they always come back to your site.

The best way to do this is to create your opt-in list, gaining their permission to email them.

What Would You Do If Your Business Ended Today?
The Power of a List

I have a friend who is one of the most successful marketers online, Stephan Mahaney of Planet Ocean Communications. He is always teaching me about the importance of the list, or as he likes to say: if my business was to end today, if they came and took my computer and shut me down, I could simply take my database of names…my list…and open up for business the next day.

If he didn't have a list, he couldn't do this. If he didn't have a list, he wouldn't have a thriving business. That is the most powerful weapon any business can have, because it is not a list they build randomly. It is a list of satisfied customers, familiar with you, and happy to hear from you.

This kind of list is the real gold of business; now surf the Internet and look at what your affiliate competition is doing. They are trying to suck money out of banner ads, which are a nightmare to get your investment back on. They are running around to newsgroups and posting messages hoping someone will notice them.

Meanwhile you go to their site and no one notices you; no one invites you to submit your name and email in return for a free gift, coupon, or discount. They just expect you to work hard to visit them, and won't do a thing to make it easy for you.

The real secret weapon is in making a busy person's life easier by giving them what they want. Affiliate programs are an excellent way to do this. Your ultimate success, like any business, is built on the repeat business you generate.

Direct Email and Fax Is How You Do This

Direct email and fax are two ways to contact your customers without intruding. The key is to target your audience and tailor your message to what they want. Many people focus their ad copy on price only; success is generated from your service and benefits you deliver, more than your price or "knowledge".

First contact is a place to introduce yourself. Don't get into a heavy sales pitch; drive them to a Web page for that. Even better, invite them to hear from you again. Remember not to spam, stripping masses of addresses in hope that a few will respond. The time you spend targeting your customers will more than compensate for waste of time, money, and effort you get by randomly emailing customers who may or may not be interested in your offer.

Promote safe, secured email with a protection of privacy. Whatever you do, don't apologize. So many people are frightened by the dangerous nature of spam, they forget that a living person is reading their ad copy.

Those who want to attack you will with or without this message. Those who want to buy will wonder why you are so paranoid about contacting them.

Compare the first lines of these two messages:

Example A.
Headline: How You Can Turn $100 Into A Fortune.

The benefit of this headline is compelling, but is it believable? Fortune is a vague word, if you turned this into "How You Can Turn $100 into $50,000", the terms are more concrete...but still exaggerated. Get rich quick headlines are weak, but not as bad as the following introduction to the sales letter.

Content Notice

Thank you for the information you have provided for us and/or others to see on the Internet, and thank you for making your email location available in the process so we can interact with you. The following offer is in response to accessing your web page/publicly accessible posting or information published on the Internet. Or it is in response to email you have sent to one of our accounts, that caught our attention because of the information it contained. We believe our research indicates it is a response that may be of benefit and interest to you.

If we were mistaken in thinking you posted this information in order for people/us to see and respond to it and exchange information with you, this is notice that you should not read the below contents of the email. It is not our intention to email those who do not want a response or to offend you in any way. Just accept our thanks for your contribution to the Internet, which got our attention.

This politeness is phony...and exhausting. Try this next ad, which tells you why you should read it...and is not ashamed of selling.

Example B.
Headline: ADV: A Personal Message....

I think the headline stinks, and I don't like the ADV intro. This stands for advertising, done to protect the sender. Good advertising is never thought of as an ad, if it is targeted and delivers benefits. Why remind them of this? Also, a personal message is delivered from their CEO. Why not mention this? "A Personal Message From The CEO.."

Why I Liked This Ad: The Intro Ad Copy

"We placed an ad in one small area of the Internet. And when the dust started to settle we had over six thousand responses in ten days."

Compare this to the one above; instead of apologizing, they show you an immediate benefit of what they actually did. This is a success story, with a result that is not beyond the reach of most people. That's because they put a real number, a concrete figure, on their claim to make it believable and real.

Even better, the ad copy develops to show how they converted the leads into customers. The power of such simple ad copy cannot be stressed too much. The results are tangible, easily understood, and invite you to read more.

If you take a professional approach to direct email, you will find that less resistance. Spam is a term for unsolicited email; the real goal is to use your first contact as a way to solicit their input, and start communicating.

Take the following approach with professional, direct email:

1. Realize that a real person exists on the other end, one with limited time. People only complain about advertising that gives them little or nothing. If you have researched your customer base, hit the benefits that your offer brings to your customer.

2. Write your ad copy to focus on a short headline. Personalize it with their name and email address, to show how you reached them. It is good to include the name of their business as well, to show that you actually know what they offer. If you have done the steps in the search engines, this is easy.

3. Get a database program and focus on it. You can use your database to export names and addresses to your email program, personalizing your message to a broad customer base. It is easy to do, and database programs are often less than $200. ACT, Microsoft Access, and MyMailingList are three Windows databases. I use FileMaker for Windows. It also allows me to customize my invoices, sales letters, and personalize campaigns via direct mail, direct email, as well as providing customer tracking.

4. Do not forget the power of different media. Faxes are cheap and a good way to reach someone in print. One site I visit contacts you via email, then follows up via fax with a guarantee to get you one contract as a consultant within a year of joining them.

Paper is still a good way to reach people, and fax is not intrusive. Just make sure that you have earned the right to contact them, and don't intrude on anyone who does not want to hear from you.

Networking and Advertising Online

Business to business selling is one of the best markets on the Internet. Many people get into competitive stances online, like they are competing for a local market.

The irony is that in the "real" world, networking is a central element of business. Take the real estate industry, for example. Real estate agents, lenders, accountants, appraisers, construction, painters, title companies, escrow companies, and many others have a referral based system.

I know one appraiser in San Diego that gets half of his work referred by out of state lenders. A professional network exists in real estate, one based on referral instead of advertising.

Now go and visit real estate sites online and see how few are applying this model. Everyone is trying to sell their one piece of the pie, when the customer wants to buy the whole package.

This will not last for long. Intuit, the makers of Quicken software, have taken their stronghold in computer based banking and stretched it to the real estate market. They have created a mortgage site (http://mortgage.quicken.com) where you can apply for a loan online, pre-qualify, and get a choice of six lenders for your loan.

Soon Intuit will be a broker itself, and will do what every mortgage company basically does. Everyone shops from the same banks to give you a loan. Intuit is using its software as a lead generating mechanism, a referral, for all these real estate professionals. They are also targeting accountants, generating inquiries for these professionals and selling a subscription basis to their lead generating mechanism.

Remember this model of professional networking, and apply it in the following ways:

1. Does a network exist for referrals in your market? Invite people and businesses to network with you. Use your links page as a referral mechanism, and build a select circle of influence to profit from.

2. Think in terms of appointments and actual sales instead of referral fees. You can arrange a professional referral system by forwarding work, more than putting a money figure on it at first.

   If you generate enough leads, you'll be able to charge for them. Use your network to enhance your own reputation, and make sure that whoever you work with backs up what they do in action. Make sure that whoever you work with is as good as you. And backs up what they offer with great customer service.

3. Banner Ads as a networking tool. Banner ads will not make you money, unless you are Yahoo or Netscape. Invite selected businesses to post banner ads in your network, in exchange for showing your ad on their site. Also use Link Exchange, www.linkexchange.com, to target customers for banner ads as well. For a little extra, you can specify who will see what you are offering.

Finally, there is a site called the Web Ring (www.webring.org) that helps people create networks of links. Each person puts the code on their home page, and members are added easily. You just need one person to maintain it, and the benefits can be tremendous.

4. Qualify anyone in your network; do not link for the sake of linking. Get your network to be as professional and responsible as you would be in the real world. One bad piece of your network can bring everyone down. Make sure that you ask the right questions and take the time to find good partners, not just links.

5. Sponsorships are a great way to work closely with other sites. At the Forbes Web Site, Fidelity sponsors a specific section. Their articles and advertising are the only ones you will find in this section.

Use these sponsorships to your advantage. Place content at other's sites, and use sponsorships as an ultimate form of networking. Work your way up to this via experience and the ability to mutually generate leads for each other.

The most powerful weapon of all is a good network; it all begins, and continues, with safe, direct email sent to people with permission you have earned. Here's how to write the ad copy that makes them stop, think, consider, and hopefully open up their wallets for you.

How To Write Effective Direct Email Pieces

Rule 1. Direct email generates leads, not sales. Plan to follow up.

Rule 2. Be wary of lists you buy.

Any list you buy is either an informal opt-in, where people have allowed themselves to be emailed advertising. Usually this means they receive free information, or reports, from the business who owns the list.

The second list is one step from spam, lists that have been harvested and hopefully targeted. I say hopefully because many are just the second step in a bulk email mailing.

A good list that does not mind being mailed to and generates sales is what you want.

You can buy millions of addresses for practically nothing, but these lists are not worth it. You will likely get shut down, get tons of duplicates, and acquire a giant headache.

Think in terms of hundreds of customers, not millions of emails Ñ quality, not quantity.

Rule 3. Create Impact in Three Words If You Can

People are busy. They are looking at tons of emails. Why should they open yours immediately?

Your goal is the three word headline; you may need to use more or less. If you cannot sum up your pitch in one sentence, keep working on it until you do.

The Subject Line is the headline of your email; this is what they will look at. If it does not make them want to act, they will hit delete immediately. No one wants to spend time figuring out what you are offering.

Forget tricks; do not use cute phrases or dollar signs. Be direct.

Which approach creates the most leads? Use what works, not what you like, or hope will work.

Rule 4. Personalize the message. Address your customer directly as "you". Keep it brief.

Calling your customers by name in an email should be required of all businesses. If you are not doing it yet, start now.

There are so many database/email programs that will allow you to personalize your email. Use them. NetContact is one; many databases allow you to export and merge for print letters. Mail Merge is possible for many email programs, and will become so increasingly in the future.

Rule 5. Write in bullets; in the information overload, the person with the easiest copy to read wins.

Sum up your main ideas in 5 bullets.

After you write each one, read it out loud. Ask yourself why what you said is important. Does it increase, boost, save, discover, explore, intrigue, and all together focus on the word you? Cut out the riff raff and select the bullets that generate the most response.

Rule 6. Write short copy, with an invitation to get more.

Your introductory sales letter should be short and to the point, two or three paragraphs at most. Invite them to get the whole story. Then send them to your Web Site (preferred), autoresponder, and telephone/fax. Expect to generate leads and give them autoresponders that are 8-10 pages long at most.

If you have a sophisticated sale, ask them to fill in a brief questionnaire at your Web Site in exchange for your sales letter. Try and follow up with a personal phone call.

Experiment with posting the sales letter at your site, and including it as an autoresponder.

Rule 7. Never expect them to buy on first contact. (How often do you?)

Rule 8. Write so anyone can read your direct email.

Write your ad copy in a word processor and check the reading level of what you are writing. I use Word's Grammar Checker, located under the Tools menu. You can run sentences, paragraphs, and whole documents to find out what grade level you are writing for.

For example, I ran the word **SimpleText** through the checker. The trick is to run the entire check; this report appears at the end.

Document Statistics

Counts:
Words 6
Characters 34
Paragraphs 1
Sentences 1
Averages:
Sentences per Paragraph 1
Words per Sentence 6
Characters per Word 4
Readability:
Passive Sentences 0%
Flesch Reading Ease 87.9†
Flesch Grade Level 6.2†
Flesch-Kincaid 2.4†
Gunning Fog Index 2.4†

†Statistic may be invalid due to the small sample size.

I ignore everything except the Flesch Grade Level; notice how the word SimpleText is at the sixth grade reading level. That is why Apple used that word, because it is easy to remember and say.

If you use this tool on your sales letters, you will be amazed. I was writing at an 11th grade to early college level. It was great for academic research, but the death of a sales letter. I just shortened my words into two or three syllables. I stopped using contractions if possible. My words became simpler. My sales increased.

Most word processors should include this feature; if not, there are many third party grammar checkers. Just look for the Flesch Reading Level and you should be fine.

.9. Amaze them With an Immediate, Surprise Bonus

Many people give away free reports, newsletters, and bonuses to start the direct response process. Giving away for free is good, but only if you make an impact. When you write a direct email, you need to direct the visitor to check out a Web Page/site dedicated only to what you are selling.

Forget driving them to your home page, with all those choices. Give them one choice, and give them their free bonuses immediately. Autoresponders are the most common way.

.Bonuses in Action: Astrology.Net

Astrology.net sells astrological readings. They have about 10 or so packages to choose from. But when you visit their site, you are asked to join up and to get your free report.

The process begins with a listing of all the possible readings you can purchase. The free one is in the upper, left hand corner of the form, where all important information should be. This is where the eye first rests, then reads left to right. You scan through their choices and get to the bottom of the form, submitting for your free report.

You enter your name, birthday, and time of birth. Time of birth is very important and not all of us know this one. They give you the option to include the time or not. You trade them demographic information for the report.

The information product is created as you fill in three forms. The result is a 3-5 page report and a personalized graphic of the stars alignment at the time of your birth, posted at their Web Site.

You receive an email telling you the Web Site address. You also learn that this report will be taken off-line in a few days, so you visit immediately. They get your email address, and using a statistical program can check to see if you even bothered to visit.

What a great way to qualify your leads; they buy the demo, then have to visit your Web Site to pick it up. You could do this with a password protected area as well, with information delivered as a text file (.txt), a Word file (.doc, Save As "Word for Windows 2" will allow whatever you create to be opened on most word processors), or even Acrobat PDF files for those of you with an Internet savvy customer.

Delivering your bonuses immediately is critical to online marketing. And it does not have to be complicated. From autoresponders to automated reports, the trend is clear; get them thinking, participating, and requesting information. Delivered online, your distribution costs are virtually zero.

Use this information to qualify your leads. Then close with those interested customers, and follow up with the rest as prospects. Unleash your Web Business through leads and direct marketing.

Inter-Net-Working

The Networking Parallel between the Cyber World and the Real World

by Bob Burg, from his book "Endless Referrals"

Just as our intent in the real world of networking and prospecting is to *find* the right people, *meet* them, and then *win them over* through effective follow-up and follow through, the same is true in the virtual world of sales and marketing. According to Patrick Anderson and Michael Henderson of ADNet International of Atlanta, a company specializing in Internet design and marketing, "The Internet is a big world and rather confusing at first. However, once the methods of prospecting are understood, you'll be in a position to increase your profits substantially."

Make a Good System Even Better

If, as part of your overall sales and marketing plan, you already utilize referral-based marketing, direct response advertising, outbound calling and telemarketing, introductory sales letters and brochures, and/or any of the principles and techniques discussed throughout this book, the Internet will provide a wealth of new prospecting leads, networking contacts and strategic alliance partners. In this chapter, we'll cover various Internet techniques to use with each of these strategies.

From a technical perspective, the Internet is an interrelated network of computers. From a business perspective, it is a way to interact with people who share similar interests. When the principles of this book are applied to the online world, it becomes, according to Anderson and Henderson, "Inter-Net-Working."

So, Who Is Online?

By and large, people use the Internet when they are alone at their computers and have set aside time to explore, communicate, research, or relax. This is a very opportune time to connect with them. Whatever is on their minds at this very moment is what they will search for. Whatever intrigues them or interests them in the next moment is where they will go to next. They will remain in, and return to, the areas which interest them the most.

As Henderson and Anderson point out, "Look at what your fellow business people are doing on the Internet. They are spending time and money creating Web sites that tell us who they are and what they are interested in. They are leaving notes and comments in public discussion areas. They are telling us something about themselves and their needs and then they are asking the Netpreneur, or seller, to get in touch with them!" And the general online consumer is actively searching for what interests them as well.

Because of this, the Internet allows us to do something truly unique. It allows us to target and prequalify our prospects in a very different way - not by demographics, but by actions! In other words, as an online marketer, we are able to target our audience by finding people who, by their very actions, have already demonstrated that they are interested in our products and services.

This leads to a very interesting observation made by Anderson and Henderson: "By looking through someone's Web site, and/or listening in (observation through public chat rooms) on their online conversations, you can learn quite a bit about them. People will reveal several things about themselves and their business or wants that make it easy to predict their level of interest in what you have to offer. You can read their personal stories, look for things you both have in common, and quickly strike up a mutually interesting conversation. This doesn't happen in any other medium. Don't ignore it! Anyone who catches on to this idea will never have to make a cold call again!"

The Principles Remain the Same

Know you, like you, and trust you becomes more critical than ever while establishing yourself on this new medium. After all, there is still lots of uncertainty by the general populace over who can be trusted on the Internet. The media fuels the fear of Big Brother practically every day with stories of credit card thieves, hackers, and viruses all somehow invading our computers and getting access to our personal information. However, such an extreme amount of unverified information sometimes makes it difficult to determine which sources can be relied on. For these reasons, mistrust is the single most important obstacle to overcome in order to establish an opening dialog with a new prospect.

And that's okay, because those who can overcome this challenge will profit greatly. And Anderson and Henderson explain that it is actually very easy to set yourself apart from the crowd. They describe this as the biggest secret to Internet success, and it is simply, "Don't act like a computer! That's all. Interact with people on a "personal level." The two explain that although it seems obvious, most people try to rely on automatic ways to contact people "en masse," and it makes their prospects suspicious. "Remember," says Anderson, "that they are alone at their computer, willing to visit with another human - but not another machine."

How to Work Any (Virtual) Crowd

Many people who begin marketing online are anxious to jump right into the various newsgroups, chat rooms, and listservs in order to promote their various products and services. Not only will that strategy prove ineffective, it would rank right up there with Spamming when it comes to irritating, if not downright offending, the very people they want to have as customers.

Newsgroups and chat rooms are basically just a crowd of like-minded people. A group of people like any other group. Try not to see the Internet as one large network of computers but instead as several different communities, ongoing conversations, and meeting places for people with similar interests.

The good news is that, just as in the real world, within these cyber groups are centers of influence. These people can be determined by the fact that they are very vocal (lots of posts) and, more important, they receive lots of responses. This indicates they are respected by others.

Many experts suggest that, when researching a particular market, finding its related newsgroups and chat rooms and "lurking" is a good idea. This way you can monitor the conversations and gain a deeper understanding of the wants, needs, likes, dislikes, etc., of their participants before jumping in. It's a good form of recognizance, and that is an excellent start. Let's take it even a step further:

Let's set a goal to identify the centers of influence within those groups and then propel the relationships with those people using the information in Chapter 3 - how to work any crowd. Also, refer back to the section in this chapter on linking.

A Great Example

Patrick Anderson noticed in one of the local Atlanta newsgroups that three people seemed to fit the category of center of influence. One was an artist. Patrick checked this person's Web site, really enjoyed what he saw, and felt there might be some way he could use his work for his own Web site, as well as referring him to others. So he called the artist, whose name is Joe, on the telephone (note that he didn't e-mail him, he called him!) to introduce himself. He then related to Joe his thoughts about the artist's work.

Understandably, Joe was delighted, and right away suggested someone who could use Patrick's Web site design and marketing services as well. Another 250-person or more sphere of influence was now part of Patrick's life, and Joe's as well. We can only imagine how far this new network beginning with Patrick and Joe will extend and how many lives and businesses will be affected and influenced positively.

Now let's talk a bit about "time leveraging." The typical newsgroup prospector, in order to attain a large number of valid leads, must basically become a newsgroup junkie. The fact is, most of us don't have that kind of time to devote to this one avenue of prospecting. As Patrick points out, however, "when you make a great Inter-Net-working connection with someone who is, in fact, a newsgroup junkie, she can become your personal walking ambassador to the news room community. You are then benefiting as though you've invested the time there yourself."

Here's a great example illustrating this point: Michael and Patrick were able to generate over 2 million hits for the Country Music Association Award's webcast with just ten days to promote! One person commented to them afterward, "I can understand how you pulled that off, I saw your promotions regarding the event all over the newsgroups." What's so amazing about this is that I personally know Patrick and Michael never posted one message to any of the newsgroups ,themselves. Not one! They simply enlisted the help of several of the centers of influence they had cultivated prior to the promotion, and those persons' natural cyber conversations and fantastic "third-party" endorsements resulted in a simply outstanding cyber turnout.

When prospecting through newsgroups and such, Michael Henderson advises that the rules of the game are clearly outlined. Unfortunately, some individuals will ignore that and try to push their way into the process. He says that it is much more effective to ask questions of those in the know, in a very humble, unassuming manner. "You'll find the newsgroup veterans who will be only too glad to help."

When it comes to establishing mutually beneficial relationships, the rules that apply to real-world organizations basically apply to the virtual world as well. That's why I suggest that before you begin to prospect via the Internet that you again review and internalize the information in Chapters 2 and 3.

One more important point: Although this particular section really focused on newsgroups, please do not overlook the fact that the exact same approaches and techniques will work just as well in chat rooms, discussion forums, and listservs.

Conclusion

Scientific Internet Advertising: Internetworking Your Business

If you have read this book, you know what it takes to set up an affiliate program that makes money for you..

As with any other business efforts, one rule applies:

> **"There are two types of businesses; those who test and those who lose money."**

Affiliate programs are an excellent example of people falling in love with an idea and then failing to test it. Just because you can sign up 200 affiliate programs doesn't mean you are making sales; those affiliations have value only if you empower them to succeed.

Now let's show you how to put that into action in even more detail by sharing the aspects of what has been coined "Internetworking"; creating an online sales network of affiliate programs that deliver results your business.

The key is to keep evaluating and testing your sales channel, honing it so that you get optimal value, as do your affiliates.

Select just 3-4 affiliate programs and test them out; sell those very well.

The first questions you must ask are:

1. What are the primary goals of your business in terms of time and money?
2. What will you do to achieve your results quickly?
3. How can I adapt and test this?

The journey begins with the first step, which you have just taken. I invite you in to explore some more, find out what programs work for you, and keep in touch.

I thank you for your feedback and hope this book answers a few more of your questions.

Peace,
Declan Dunn

Affiliate Check List: The Ten Golden Rules

1. **Get a Web Site that you can promote. It is your job to get traffic to your door.**
2. **Adapt, don't complain.** If you find yourself at newsgroups or discussion lists griping about your lack of success, find a new line of work. No one makes money complaining. All that energy is wasted. Negativity and complaining have no place in business. This is not personal, it is all about dollars and cents.
3. **Measure how many customers it takes to convert into buying customers.** Once you know how to convert visitors to buyers at your site, you simply need to increase traffic. If you have tons of traffic and no sales, you need to get a better, targeted audience.
4. **Match the right offer to the right audience.** Affiliate marketing is all a game of numbers. Know how many visitors it takes to generate the sales you need.
5. **Get products the you feel good offering to your audience**; knowing your product line and why someone would buy them — being a customer — is one of the best ways to sell anything.
6. **Get products with good profit margins**; anything below 10% is tough to make money on, and anything over 20% is offering excellent margins.
7. **Focus on 3-4 affiliate products at most at your Web Site**; avoid the Internet flea market mentality of having so many affiliate products to sell. The logic is that you will sell more if you have more to offer. Nothing could be further from the truth. If you do create a catalog, market individual items with your marketing.
8. **Give visitors one purchase decision, and make it stick.** Endorse products if you can and make sure you focus your customers on buying now. Too many choices spoil the sales process.
9. **Develop your ad copy.** Words make all the difference. Technology is nice, but words have been around for thousands of years. Words move newspapers, sales letters, magazines, and yes, the Internet. Keep your language simple, direct, and to the point. Most of all, talk about your visitor's needs, not your product, or yourself. They only care about themselves, which is how it should be.
10. **Build repeat business with email.** Everything centers on your list of buying customers, and prospects you have yet to convert. Contact them with their permission; follow up quickly and make sure they remember you. You have to remind the to return to your Web Site and buy from you. Don't expect them to remember; repeat buyers are much more likely to buy from you than first time buyers. Most of all, have fun. Nothing gets done if you don't have fun.

APPENDIX

The Affiliate Action Plan

You may distribute this section to your affiliates as is.

THE 7 STEP ACTION PLAN FOR TURNING YOUR E-BUSINESS INTO A PROFIT CENTER

Problem: Most online marketing materials are created by someone who sold one or two products. What you get are theories, and the hope that one of those theories might rub off on you. This system is the result of four years of testing for large and small businesses offering everything from information products to loans. It is tested, and the strategies work. The results speak for themselves.

Solution: As you implement these strategies, you will discover how easy it is to test online, and find where your customers are meeting. Better yet, you will discover the best ways to contact, convert, and turn your Internet surfers into long term customers. Whether you need to improve the results for your current Internet business, or are just starting out, this information will be vital to your success and survival. Let's start now!

This action plan is part of the **E-Business Maximum Cash Flow System,** showing you how to dramatically increase your revenues on the Internet. **Visit http://webletter.net/impact/ for details.**

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The 7 Step Action Plan

Imagine if you could pinpoint where large groups of target customers are meeting, and easily offer your products and services to them. Welcome to the Internet, where technology takes a back seat to simple, proven, direct response marketing.

The Internet is not as complicated as many claim. People simply go online to pursue their business interests, hobbies, passions, career, educational needs, socializing, and anything else they do in the real world. Our goal is to find out where they are meeting and drive them to your business quickly and easily.

This system is designed to help you target your customer base and convert them into long term customers. There is no magic to the process, just testing. This 7 Step Action Plan is designed to help you pinpoint with extreme accuracy your customer base through the following steps:

Section A. How to Target Your Customer Base

- **Step 1.** Determine What You Want To Sell
- **Step 2.** Start Thinking Like Your Customer
- **Step 3.** Target Your Natural Market and Create Your Customer Profile

Section B. How To Grow Your Business:

- **Step 4.** Test Proven Methods of Web Advertising

Section C. How To Turn Your Visitors Into Long Term Customers

- **Step 5.** Follow Up With Your Customers
- **Step 6.** Look For Endorsements
- **Step 7.** Find More Products and Services to Offer

This workbook gives you an overview of each step, with worksheets to fill in and test your knowledge of your customers. Be sure to write in the book, and begin tracking your success. We urge you to cover each step and don't do what most do, which is skip to Step 4, Web Advertising. You have to know your customers before you can offer your products and services. Good luck.

A. How To Target Your Customer Base

Step 1. Determine What You Want to Sell

Objective: Define the benefits you deliver to your customers in two sentences. When you can explain the benefits to any interested prospect quickly, you have achieved your goal.

It seems so simple, doesn't it? If you are selling widgets, than that is what you are determined to sell. Why bother with this step?

The problem is, your customers are not determined to buy those widgets. They don't care about the box and the color, the features of your product. They care about what it does for them.

This step is where you start defining exactly what it is your product does for your customers, the benefits. You better be able to explain that to them in what I call the elevator talk.

Imagine if you were on an elevator with your target customer, and you had only two sentences – until they got off the elevator at the next floor — to describe quickly and exactly what your product would do for them.

That's what this step is about. Define your benefit statement and begin looking at your business as a solution for a problem your customer has. If you can solve this problem, and let them know quickly how you will solve it, your competition will be left in the dust.

In the next step, we will explore your competition and what your customer is facing online. For now, answer the following questions and start to pinpoint exactly what it is your customer wants, and give it to them.

What Your Customers are Looking For…According to One Study
(ZDNet, Your Top 10 Favorite Web Activities:
http://www.zdnet.com/anchordesk/whoiswe/top10things.html)

1. **Searching**
2. **Reading News/Sports**
3. **Career Management**
4. **Learning**
5. **Software Downloads**
6. **Travel**
7. **Socializing**
8. **Making Money**
9. **Playing Games**
10. **Shopping**

Begin With The End in Mind:

Start By Listing Your Key Marketing Words

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1. List the Keywords, Related Words, and the Benefits Your Product/Service Provides (try to list at least 8 keywords, and remember to use these for search engine positioning in Step 4).

2. Describe your offer in two sentences or less (keep working on this one)

3. Set your Target Goals for your Business in Terms of Sales, Savings, and the time period you would like to achieve these in. Set deadlines!

"Even though you may be on the right track, if you don't keep moving someone will run over you." Will Rogers

Step 2. Start Thinking Like Your Customer

Objective: Acting like a customer on the Internet, you will discover their experience. Find out what your competition does right and wrong, and ask your prospects to help you; just ask them what they think. Given the keywords and benefits you outlined in Step 1, put these to the test online. Give your customers what they want by taking a moment to

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"surf" in their shoes, and position your business so its offer is like no other.

Right now your target prospects are out there looking on the Internet. There are over a million commercial sites to choose from, so it's not easy. To develop your business and traffic, you have to do what few others are doing: clearly and quickly defining your value to these target prospects.

Now that you have an idea of what your customer is looking for, it's time to go out and act like the customer. As they say, until you walk a mile in their shoes, you will have no idea what they are facing.

Your Customer Knows More Than You Do

Go online before you begin and ask interested prospects the best places to go. It's a great way to scout competition and begin spreading the word.

Out on the Internet, you will find people doing things the same way. Check out the ad copy and the call to action that you get. Most Web Sites act like glorified brochures or magazine ads, always talking about the product or service the company offers. Few invite the visitor to act now, to buy now!

Online, the most important person is the customer visiting. How many sites allow you to take the action, to guide yourself to the purchase decision? Does anyone:

- Separate themselves from the competition with a clear and motivating benefit?
- Give an immediate reward for visiting their Web Site or answering their email, like a free report?
- Position themselves at the search engines so they are on top, and easy to find?
- Get singled out as an excellent resource for the particular subject?

By learning the problems your customer faces and making it easy to work with you, you are also beginning the marketing process. What are the best sites to find what you offer? What is the best way to market to your customer base?

The Internet is a powerful word of mouth tool; remember to set up your circle of influence, your referral network, by allying with related, non-competitive Web Sites that have to do with what you are offering.

Web Sites and discussions revolve around specific interest groups, specific niche markets; you need to locate where these markets meet, and create a message — your invitation to your prospects — that is different than anyone else's.

Find your niche markets and generate funnels of leads for a specific offer having to do with their interests, their passions. Tap into this incredible expressed interest and fulfill it at your Web Site and in your email contacts.

The best way to make it easy for your customer to work with you, is to give them a turn key solution for everything they are looking for.

Your Customer-Centered Marketing Strategy: Start Creating the Right Offer and Target Where You Will Market to Maximize Your Profits

1. What are the three major problems facing people interested in what you are selling. (Hard to find good sites? Who are your best competitors?)

1. ______________________________

2. ______________________________

3. ______________________________

2. What are 3 important goals they would like to achieve with what you offer? How will this improve or better what they are doing now?

1. ______________________________

2. ______________________________

3. ______________________________

3. Name the best Web Sites, mailing lists, and discussion groups. Can you joint venture with any of them? Can you advertise in their space? How can you turn their visitors, their interested prospects, into yours as well?

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

Step 3. Target your Natural Market: Create Your Customer Profile

Objective: Now that you have looked at your customer and what problems they run into on the Internet, it is time to build your target customer profile. Determine what information you want to know about your prospects, and think about the best way to get this information. When you have written a target customer profile that specifies the demographics, buying behaviors, and online sites that your customer visits, you can begin to test your marketing.

"How Can I Know If Someone I'm Talking To Is A Good Prospect For You?"
Bob Burg, *Endless Referrals*

Who are your best prospects? And what is the natural market, their interests, you are appealing to? I asked that to one client recently; he told me everybody. Everybody would be interested in his vitamins.

Now try to put a face on everybody; what does everybody do during the day? What are their motivations? Why should they buy from you?

The funny thing about this common approach is the misconception that may kill his business. The client thinks it is just him qualifying the customers. Meanwhile, his customers are qualifying him, his Web Site, and his email. They want to know if he has done his homework, and if he knows what they want.

By copping out to the old, "I'll sell to everybody" routine, my client is killing his business. I asked the same question to the president of a hot tub company recently. His company is one of the biggest, and you can see why by his answers:

1. They are homeowners in their second home.
2. They are most often between 36-50.
3. They are a married couple with two children. They both work, with household incomes exceeding $60,000 a year.
4. They appreciate relaxing and treating themselves with special gifts as rewards for working hard.

That is the sort of customer base you can define, target, and convert into long term customers. Instead of everybody, he has defined it into "somebody" with an identity. He has defined a natural market that he can test to.

Your goal in this step is to create a customer profile that not only tells you who they are, but where you can reach them by marketing online. Then you can put your testing into action. The Internet builds on direct response, niche marketing.

What You Must Know About Your Customers: Your Customer Profile and Where to Find your Prospects Online

1. Do you have a natural, niche, market to target? __ Yes __ No

2. Is there an existing natural market on the Internet for what you offer? Is it easy to find resources? __ Yes __ No

3. Are there any 800 lb. Gorillas (big businesses) who dominate your natural market? Can you overcome their economic advantage? __ Yes __ No

Organize this Information in a Contact Manager or Database

Tip: You need as much information as possible to keep track of your customers. Get your database going and enter in at least the names and contact information. As you develop it, add more to help you better target and develop your customer base.

4. What are the key characteristics, or information, you would like to know about your customers?

A. Name and Contact Info: where do they live? Are there any areas where more of your prospects live so you can target regionally?
B. Email address; this is crucial to your follow up.
C. Special Interests
D. Related Products and Services to what you offer
E. Age
F. Sex
G. Income
H. Do they have children?
I. Do they own their own home?
J. Frequency of buying what you offer, and related products
K. The normal buying cycle, how long it takes them to decide; a S30 decision is easier than a $3,000 decision.
L. What Web Sites do they visit the most? Who gets the most traffic?
M. Is anyone else selling what you have to offer online? Are they succeeding? It is often better to go with a proven market, than to create one.
N. What are the best places for your customer to discuss issues, socialize, and meet like minded people interested in your product/service?
O. What are the latest trends, news, political, social, and relevant issues to your target market? Create a special report to fulfill these needs.

4. General Description: Write down your target customer profile in a few sentences.

____

____

____

Review: How to Target Your Customer Base

The first three steps in this process lead you to define your customer base and how to easily reach them. You will use this to quickly test your marketing and adapt your offer to give them exactly what they want.

Without a specific sense of what you are offering, who you are offering it to, and why they should buy from you, your customers are lost. They don't want to read about your product, or you.

Which is where most businesses get stuck. They sit in their Web Site and know what they sell so well that they unconsciously try to prove how well they know it with everyone that visits them. All the customer hears is the ranting of facts, figures, and knowledge, but little if any reasons to buy.

In the center of the Conversion flowchart are the three most important questions your customer asks:

1. **Why is this important?**
2. **Do I want or need this?**
3. **Should I respond, i.e., react, to these words?**

You have the headline and maybe your first few sentences to give them a positive response to all of the above questions. If the email or Web Site is targeted to someone's specific interests, few if any will object.

Define who your customers are. What do they like? What holidays and events have to do with what you are offering? Is this something they do alone, online, or with a group? If you cannot tell me why someone is a good prospect for you, how can you convince them?

Put a face, a motivation, and a defined need on your customer base. Set your objectives to deliver the best products and services that solve their problems, that fulfill their needs.

For this section you need to define:

1. **Your Business Objective**
2. **Description of Product/Service (in two sentences or less)**
3. **Your Target Goals in Terms of Sales, Savings, and Time**
4. **Key Problems Your Customer Faces**
5. **Your Customer Profile**
6. **The Top Internet Places to Market and Joint Venture**

Case Study: First Security Capital — http://www.FirstSecurityCapital.com

"Yes, we are closing loans--many, in fact, and the size of the positions is only getting larger. Our website helps tremendously--we continue to get many compliments and it no doubt provides a lot of reassurance for our prospects."

Scott Cathcart, First Security Capital -- San Francisco, CA.

First Security Capital is a financial services firm specializing in providing innovative, proprietary financial products to individual investors and small to midsize companies. They offer high loan-to-value loans against free-trading securities, including large, mid, small cap, and microcap stocks.

1. **Your Business Objective**
   Marketing efforts are focused on achieving the company's position of being a leader in providing innovative financial products to individuals and small to midsize companies. Specifically marketing must:

   A. Make the phone ring to build business today; loans begin at $100,000, so the goal is to get the client on the phone to explain the benefits in person.
   B. Begin to build a premium brand image as a foundation for making the business grow even larger in the future. Recognizing we are in the "start-up" mode, these objectives must be met in an efficient, cost-effective, and blue-chip—first class fashion to build long term customers.

2. **Description of Product/Service (in two sentences or less)**
   First Security Capital's innovative financial products are stock loans using current stock holdings as equity. This proprietary, cutting edge vehicle is the main focus of the company. Loans can be arranged on most large, mid and small cap stocks, microcap stocks, large cap non-US stocks, ESOP qualified assets, and restricted stock positions.

3. **Your Target Goals in Terms of Sales, Savings, and Time**
   Build a mini "Goldman Sachs" brand image using the interest in online investing and the online visitor who has the income and stock holdings to benefit from these loans. Build brand awareness and retain clients to create an Internet-specific stock loan company within 1 year.

4. **Key Problems Your Customer Faces**
   Clients are not familiar with stock loans or how they work. We have to educate our customers and build credibility as an innovator in a field dominated by the older investment houses; few offer these stock loans.

5. **Your Customer Profile**
   Our target is predominantly male, age 35-60, household incomes of $100,000 or more, and savvy about investing. They are geographically dispersed throughout the U.S. Prospects have a capital gain in their stock portfolio they need to monetize, are looking to diversify their stock portfolio into real estate and other investments, and/or are looking for downside protection for their investments.

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32 Ways To Contact Your Customers

Search
Meet
Links
Web Sites,
print media...

DIRECT EMAIL IS THE LINK

B. How To Grow Your Business

Step 4. Test Proven Methods of Web Advertising

Objective: Given your target customer profile and the places they visit online, you will test your advertising to find the

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best ways to generate leads and convert those visitors into long term customers.

The Internet is emerging into a personalized advertising medium which is:
In a recent focus group study, participants did not mind getting email that was targeted to them.

In fact, they emphasized two points to remember:

Let us **control**. We want to make the choices and be in charge.
Give us choices. We want to make the choices.

If you market online, make sure you let the customer control and choose what they want. This is part of direct response marketing, giving them incentives to act, but not forcing them to.

1. **Driven by words.** Headlines are 90% of the reason anyone reads an ad or a newspaper article. The same rules apply online.

2. **Centered on building your list.** In three years, if you do not have a significant list of interested customers, you will be buried by the big businesses. If you do have it, you will have an asset to sell (and sell to).

3. **Personal.** Customers are referred to by name, in email and other forms of marketing. Being personal does not mean eliminating standard business approaches.

The Web is about personalizing marketing. The customer has to choose which businesses fulfill the need. You need to invite them in to your message and onto your list. Do not make your message intrusive. First contact is rarely a place to sell; use this to your advantage. Try as quickly as possible to call them by name. Email programs that work with databases now allow you to do this. Do it.

Be careful not to get too informal. Many online start misspelling, writing sloppy letters, and some even get moody! Leave your personal life out of it. Keep it business-like, the same way you would treat someone who phones your business.

4. **Based on helping visitors develop their own target profile for you to aim at.**

You ask the right questions and provide them the right incentives to give you the answers. This is how you build your list. (We will touch on what sort of incentives to give in a bit). What are the key questions and needs your customers have?

5. **Invigorated by focused visits, not bored surfers;** they are looking for a few places to visit regularly. People go online for research, professional and career help, hobbies, and many other interests. All of these have related products and services. Online people do not love wandering the Web. They look and they settle. Find the settlers and sell them.

6. **Dependent on repeat contact and credibility.** Email is where you do your selling. The Web Site is where you develop long term contacts, customers, and business. You have to show them you know what you are doing and can solve their problem. Credibility is an essential part of all Web Marketing.

Four Critical Web Credibility Builders

1. Develop the Promise of Your Offer

Your offer and the way it is presented will make or break your Web business. Build up your offer with curiosity; get them clicking on your headlines and exploring. The more they look, email you, and ask questions, the more qualified they are to buy.

Your customers are looking for someone to solve their problem, even if they do not know what that problem is. Your home page, every Web Page, needs to drive them to your promise. Always use headlines and bullets to quickly establish what you are promising.

The promise is developed in content pages; these can be brochures, pages of products, the services you provide, the process you take to provide the service, and sales letters. Content is where you do your selling, where you develop the promise behind the headline. Headlines get them to act, content starts the selling process.

2. Get Your Customers to Identify What Problems They Need to Solve

Many customers do not initially know exactly what they are looking for. What a great way to develop contact by asking them what they are looking for and following up on their responses.

You can use online questionnaires used with forms (explained later) to triple responses. By helping them define what they need, you drive them to the solution.

The key is listening to what your customers want and asking the right questions. Ask them the three ways they will use your product or service. Ask them the top three problems or objections they have, or the top three benefits they would like to get out of using what you are selling. Questionnaires, surveys, and contests are an effective way to help them define the challenges that brought them to your Web Site.

3. Prove you Can Provide the Solution

As they say, the proof is in the pudding. In this case, the pudding better be your Web Site. Show them that you can provide the solution Use photos of yourself or your physical store; also incorporate photographs of your products to make it real. Most importantly, tell the exactly why they should buy from you in 30 seconds or less. Online, that means a paragraph; why should they buy from you instead of the competition?

4. Get them to Commit To Your Solution

The final step to developing credibility is to get your customers to commit to your solution. The best way is to sell them; the second best is to get them to approve of being on your mailing list. This is called opt-in email list building. Get them to commit by putting a limited time offer or add bonuses. The key is to get them to act now.

How To Turn Your Web Site into a Marketing Tool

1. Establish as Many Points of Contact Possible on Your Home Page

Never expect a visitor to return to your Web Site. Bank on the fact that they will never return. Use your home page as a place to generate emails, phone calls, faxes, and inquiries. Use your autoresponder wisely; get them set up to answer a basic guestbook (tell us why you visited), surveys, sales letters, special announcements, mailing lists, and contests. The more ways you give them to contact you, the better your chances are for understanding who is visiting. Gathering email addresses is really the name of the game.

2. Where to Place Your Offer So They Will Notice

A Web Site has a few hot spots which will literally triple your response rates if you use it right. The screen a visitor looks at is wider than it is tall. If you want a hint, take a look at the computer interfaces on the two most popular machines, Windows and Macintosh. Most of the places to click on are located on the top and bottom of the screen; the left hand margin in particular is a favorite place to put your initial offers on a Web Site.

Both place all the action points, the points for people to click, in the frame of the screen. The hottest spot to put your words is the upper left hand corner. People who read English read left to right. Their eye naturally drops on the upper left hand corner.

Place your first point of contact in the upper left hand corner. Develop your important sections down the left hand side. Use the bottom of your screen as well, especially the lower right hand corner. This is where their eyes scan.

Example: By placing banner ads at the lower, right hand corner of the screen, a survey found that responses to these banners increased by 200-% over banners in the middle of the screen. Bank on years of experience and put your headlines on top, on the left hand side, and towards the bottom of your screen. Use the middle of the screen for graphics and for listings of areas to visit in your Web Site, as well as more headlines.

3. 10% of Visitors Will Explore your Site: Give Enough, but not too much

You will find that people visit about 20% of your entire site, and ignore the rest. This is normal. At a successful business site, people will spend about 7 minutes. For chats, games, entertainment, and high priced news media, these rules may differ. Give them enough information to make the sale, and follow up via traditional means as well. Telemarketing is an excellent tool to use with a Web Site. After all, the Web all revolves around different ways to use the phone.

4. Portal Pages: How To Use Web Pages as Optional Entry Points

You can use more than your home page to get people exploring. If you want to promote a specific product, you can direct them to that page. Then give them a place to contact you and make it clear how they can explore further.

Hint: Include many links on your home page, but limit the links on other pages. Links are choices. Get them to focus on your message, then get them to your home page, your Table of Contents, and to your Order page.

5. Direct Response Techniques

On first contact, it is unlikely that anyone will buy what you have to offer. You need to give people something of value for no money and little effort. Examples of this are:

- Coupon they can print out or email to you via a form; a dentist gives people the same kit (dental floss, toothbrush, information) that he does online. He uses the coupon to generate a response.
- Free report: Find something special, issues, news, special announcements, and use it to enhance your product sales.
- Free online newsletter: Some people call these e-zines, but basically you distribute a 1-2 page document every few weeks with information and your advertising.
- Bonus reserved for you: Create a specific page for people you are marketing to. Give them a page tailored only to your specific offer. Example: A Web Greeting Card delivered online for a specific season, like a Christmas Card.
- Free software; download sample. Almost anyone can create software now. Just use a database program or PowerPoint to create a simple interview, online evaluation, and use their feedback to start the selling process.
- Forms to ask questions and get people onto your list. A form is quite simple. It is where you type in information on the screen. This will dramatically increase your responses over a simple link where they email you. Forms make people think you are working for them by listening and giving them space on your page to respond.

6. Create a Conversation, a Mastermind Group

A mastermind group are people gathering to learn, brainstorm, and take their ideas to the next level. If you can create great interest in discussion, you will gain high traffic and advertising revenue will become a reality. Get them talking and you become the expert.!

7. Using movement on your Web Page to get noticed.

Animation on the Web is overrated. But movement on the page is the first thing people will notice. Use this to your advantage by placing a small, animated graphic next to the primary

headline, link, or listing you want people to visit. Do not make it spin endlessly, let it repeat 3-4 times and stop. Be careful; limit your movement to one or two graphics; too much movement takes away from your message. It also gets annoying on repeat viewings.

8. Sell Product and the Process

Every product is created using a special process. You can turn this process into a special "how to" report or sales letter for your product; you can also turn it into an information product to sell to people. Use the process to generate leads and sales for the product..

Review and Put Your Plan Into Action

How to Test Your Marketing Online: Find the Best Places to Generate Leads

Testing online is simple. Begin by marketing to those niches you identified in Steps 1-3. Measure your results by tracking how many people visit from a specific offer, and how many come from the search engines. Compare this as your visitors generated, then count how many of those visitors contacted you via email, phone, and fax. This conversion ratio will help you pinpoint the best places for you to market online. Tracking is easy with statistical software like WebTrends and many Internet providers give you statistics automatically. Use them.

1. **Search Engines**

Search engines perform a function of cataloging the Internet, but I use them for finding niche markets. Once I go there, there is no point in searching any more. If you can name your product or service in four words or less, search engines are something to consider. Count how many actual visits you get, and what keywords they use. If these work, try to stay on top of the search engines on a monthly basis.

2. **Email marketing**

Email marketing is the most misunderstood term online. When you are contacting people online, you need to keep your offer to the point. Make your first contact less than one printed page. In email, your first contact should be a few paragraphs. Use bullets and introduce what you have to sell. Your goal here is to:

- Get them to contact your autoresponder
- Get them to visit your Web Site
- Become long term customers by hearing from you on a periodic basis via email.

3. **Discussion groups**

These are often called newsgroups, which in the early days was a great place to market. Today, most newsgroups are dominated by spam, and people arguing. A better suggestion is to visit mailing lists run by moderators on specific topics. Visit http://www.dejanews.com and http://www.liszt.com for complete listings.

There are also discussion boards online where you can target customers as well. Be careful when you email them, because many people use these as non-commercial places to discuss their interest. They are great places to get market research, ask your prospects questions, and show them your Web site by participating. But be careful; this is a slow and long way to market, better suited to consultants than to people selling products.

4. **Ezines**

The e-zine is just a fancy way of saying an article or collection of articles published online. Most of these come in the form of "newsletters" and consist of various information that will hopefully be of value to those subscribers and visitors. The *focus and purpose* of the Ezine is to attract attention to other sites and services or products that will be available to purchase at a profit for the company offering it. You can buy advertising for a specific market through these as well; visit http://www.dominis.com and http://www.lifestylespub.com for examples.

5. **Business Directories and Free areas to promote your site**

There are many free areas to post your site address, including some search engines. Many business directories have developed. While you may not get so many leads from them, you can target your prospects here very easily. What you are looking for are the few resources for your subject, the sites that have to do with what you are offering. A good business directory or free area to list is a gold mine that you can target your message to. Visit http://www.mmgco.com/ and look for their Top 100 listing to get started.

6. **Banner Ads**

Banners are advertisements usually found on high traffic sites that lure the potential customer to click that banner and bring them to another site so they can sell or promote a product or feature. The focus and purpose is to first, *arouse the attention* of the prospect by making an attractive offering and reducing the resistance of that person, inviting them in to a specific offer related to the banner ad. Good banner ads emulate familiar behavior, like using the Windows interface, and include a headline with a call to action. Visit http://www.linkexchange.com and http://www.markwelch.com, as well as http://www.smartclicks.com and http://www.linkomatic.com for ideas. If you want a good free banner created, visit http://www.animation.com.

Case Study: ReunionMasters — http://wwwreunionnetwork.com

"We generated six figures in income our first year, without having a Web Site! Amazing, but for you, business as usual. Thanks."

Paul Alatorre, ReunionMasters–Knoxville, TN.

This is the older site address for an interesting business. A husband and wife team were working out of their home, wanting to create a national business. They could not

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afford a Web Site, and asked me to help. I told them to find a Web Site where many people were visiting, and create a per sale commission for the owner of that site.

1. **Your Business Objective**
RennionMasters wants to become a national reunion company. We target high school reunions with more than 500 people attending the reunion. Our average reunion costs $10,000 and more. If we can find the person in charge of the reunion, the sale is easy, since they have a budget.

2. **Description of Product/Service (in two sentences or less)**
We orchestrate so you can celebrate your reunion with friends. We set up everything for your reunion to make it memorable. We rent the space, set up a theme, contact your classmates, send out invitations, and handle every aspect from music to catering. Our goal is to make it the event a success by putting our expertise into action.

3. **Your Target Goals in Terms of Sales, Savings, and Time**
We want to generate at least 10 sales in our first year and grow our business by branching out to many different states. Our long term goal is to develop a referral system and word of mouth advertising so that people know the ReunionMasters brand name throughout the U.S.

4. **Key Problems Your Customer Faces**
Reunions are run by one person, who doesn't know where to look or how to differentiate one company from another. We need to build trust and name awareness by advertising in key markets where they meet.

5. **Your Customer Profile**
Our target is predominantly female, age 35-60, who have run their reunion campaigns, and will often run future events.

6. **The Top Internet Places to Market and Joint Venture**
Since we could not afford our own Web Site, we found a college student who had a huge reunion center. People went there to find classmates and learn about how to throw a reunion. We included a free, how to report on throwing your own reunion, and invited them to call us. The owner of the Web site was paid a commission for each sale. Through this joint venture we were able to get our business rolling with 10 sales our first year, with absolutely no money spent on advertising. It was all done through the joint venture. Since then we have developed our own Web Site and are joint venturing with other sites and companies nationwide.

Section C. How To Turn Your Visitors Into Long Term Customers

Objective: Now that you have established initial contact and are building your email mailing list, follow up and give bonuses, customer service, and incentives to turn your customers into long term customers.

Step 5. Follow Up With Your Customers With Opt-In Lists

The Web builds on conversation, on discussion. Opt in lists mean that you offer to keep in touch with people via email for a long period of time. In return, you have to give them something of value and sell them.

Just be sure to sell them in cycles. People buy at certain times of the year. People on a list will buy if you do not overwhelm them. Give them offers over and over again, but be wary of tiring them out. The goal is to find the cream of your customers, those who will buy most anything you have to sell. You can do this in many ways:

1. **Reminder Services:** Remind them of special dates, news, or important moments related to their interest. For example, Hallmark Cards invites visitors to leave their special dates and reminds them of these dates. They also send advertising to sell them cards related to those dates.

2. **Product Updates:** Keep people informed of the latest updates or additions to your inventory. Amazon.com uses its bookstore as a list builder. It informs you of new books relating to topics of your choice. They target their message subject to the topics you indicate interest in.

3. **Web Site Updates:** This is a familiar and somewhat successful way to remind people to visit your Web Site. For large sites that update often, this is a good tool. For small businesses, this has questionable value. But you can test it.

4. **Online Newsletter (ezine):** This is a popular form of advertising. The Web Letter uses an online newsletter to add to is bi-monthly print publication. Send out the latest news, research, and information for your subject. Deliver it by email and it costs

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virtually nothing. You also include advertising for your products, services, and Web Site.

5. **Personal Column:** Develop a unique perspective and email people your thoughts. This kind of approach personalizes your business and if it taps into a passion, can lead to a large following. Good writing, humor, and viewpoints will get people reading. You can find many good techies, but not so many good writers.

6. **Stories:** Develop a storyline around what you are selling. Television commercials try to do this, but since it is TV, you do not know when the next one is coming. This approach could be used to tell a success story, how someone used your product or service, and generate interest like any good mystery. People will want to know how the story turns out. Storytelling is an effective way to deliver your message and keep them interested.

7. **Special Invitation Reserved for You:** You can invite someone to visit your site with a special invitation. This can be a special Web page, special report, survey, information, or secret that gets them to visit. Keep this page brief and entertaining, then point them in the direction of the rest of your site with 2-3 good headlines and a link to your home page.

8. **Contests and Surveys:** Challenge people to search your site for clues, or invite them in to win one prize per month. The key here is to make your survey or contest easy to join, and to follow up with information about the contest, who won, and also about the product or service you are offering. Be sure to check with your attorney when running a contest because of local laws. As long as you follow the rules, contests are a great way to generate traffic. If you use surveys, just be sure not to ask too many questions. People like to participate, but they don't want to feel like they are working.

Step 6. Look for Endorsements and Add Bonuses to Your Offer

Add bonuses to whatever you sell. It is easier to get people to commit to spending money, when they get more value than what they spend.

If you are selling a product or service, offer free reports tailored to a specific market if they buy. Give them password-protected access to a special section for your insiders. Put a dollar value to these bonuses. These bonuses will make your offer more appealing both to customers, and to people who would like to endorse you to their customers.

For example, if you buy my newsletter, I could give you a free banner ad at my Web Site.

Wait a minute, what is the value of that? Let's reword the offer.

If you buy my newsletter for $97, I will give you two free months of banner advertising at my site, worth $200.

I have just turned your $97 purchase into a $297 value. I have added a bonus.

Even better, if I want you to endorse me to your customers, I will let you review my product, get a per inquiry or a per sale commission, and give you free advertising at my site, in exchange for an ad at your site.

Examples of great online bonuses are:

1. **Email consulting and customer service.** Automate your responses to your clients and free time up from the telephone. Email is your greatest asset as a lucrative bonus, as well as a time saver. Use it to support your customer base without tying up your phone.

2. **A Members section** for secret reports, discussion boards, and special offers for those who affiliate with your business.

3. **Special reports and newsletters delivered digitally.** Information products are a great bonus to add, and if you deliver them online, the cost is minimal.

4. **Become a Web editor for your topic recommending links.** Use these links as an advertising tool as well, get people to return them by qualifying the best sites for them to visit. Do not make it an endless list, make it a recommendation.

5. **Give them success stories.** Interview an expert, or a client who has succeeded using your product or service. Share this as a free bonus. Even better, get another publication to interview you, then share the interview in your materials. They do the publishing, get publicity, and if you are smart, will split the sales to your list of their product as well.

6. **An audiotape about your product.** It is a great selling tool and very cheap to create, package, and mail. This involves direct mail, so be sure to qualify your prospects. You can even put a snippet online to give them a taste.

7. **Teach them** something that is Web related, computer related, or has to do with your subject and their interest.

8. **Offer banner ads and links at your site as bonuses.**

9. **Put a special article, stories, or discussions from others at your site as a bonus.** Give them a link to their page in exchange for demographic information, giving details of what they are interested in. This will help you identify trends, sell targeted products, and keep giving them what they want.

Customer Service is a Lead Generator for Dell

Michael Dell of Dell Computers does not focus on his per month sales, which are growing. He believes that customer service online is what forges a relationship and brings people back to buy again and again. Surveys show that he is right; people want the sense of a human being working with them, and supporting their buying decision. Free customer service is not only a good bonus, it is good business to develop long term customers.

Step 7. Find More Products and Services to Offer

The final step is simple; you have looked at what you offer, now what other products and services do your clients want?

Provide reseller opportunities for products, referral opportunities for services, special pricing for good customers, and pay them for working with you by continually rewarding them with much more than they paid for. The Web is developing into a referral system. Give them more than they had by offering deals for inquiries, sales, and ongoing sales — some Web businesses have offered commissions for up to a year on all the products/services a referral brings in.

The idea is simple; you find someone else who has a product or service that is of interest to your customers. You can either create this yourself, which will take time and may detract from your business. Or you can joint venture or set up an arrangement that makes it beneficial for both of you to work together.

Online these are called "Affiliate Programs", because you set up another site as an affiliate for your business. Many businesses are turning this into an online form of retail, where high trafficked sites with customers are paid a percentage for generating leads and sales for other sites via two models:

1. **The Per Inquiry Model**: This is when a business pays another for leads, such as www.edmunds.com, which sold leads for people buying cars online to auto dealers. The dealers paid per lead.

2. **The Commission Model**: This is when you pay someone for referring you business per sales made, or commission. Amazon.com made this famous with their bookstore, in which a referral fee is paid for linking to a book at amazon.com. Tracking can be tricky at first, but this is a great way to generate leads and sales.

To joint venture or offer other products and services, you simply need to find someone whose business will deliver what they promise. Match that promise to the needs of your customers you identified in Step 1 and you've got a great deal going.

The Internet is rapidly developing into a business mechanism through a simple realization:

Sometimes our partners are competitors, and our competitors partners.

While you still have to compete, the success of your business will be its relationships to others offering related products and services. Your network is crucial to your survival, so be sure to define your sales process for these final steps in terms of what you are offering, want to offer in the future, and what is better to joint venture.

To succeed online, you will need to outline your sales process, from first contact to follow up.

1. **What is your lead product or service?**

Lead products under $100 meet little price resistance online, while those less than $40 sell easily to online shoppers. If you are selling a lead item, make sure that you follow up to move them to your more expensive items. It is easier to make a $30 decision than a $3,000 decision, and if you sell an expensive product, be sure to get them on the phone to close the deal.

2. **What is your follow up product or services?**

Be sure that you clearly define your sales cycle, from lead product to follow up. Statistics show that products often sell for less than $100 or more than $500. This general rule shows how a good, low cost entry point is vital. And if you are running a catalog with many items, just make sure to focus your visitors on specific items for your lead generating. Don't send them to your entire catalog when they are interested only in one section.

3. **What bonuses can you include to add value to what you offer?**

4. **How can you set up affiliates: is per inquiry or per sale possible? Explain below and be inventive; make it appealing to your affiliates as well as your customers.**

Case Study: HomeTown Marketplace — http://www.hometownmarketplace.com

"Dear Declan,

Using your common sense approach to online business solutions totally changed our lives and the way we do business. We didn't even own a computer when we began. In only 90 days after receiving your course, we were able to get our new business online.

Numbers tell the story...phenomenal results...$35,000 our first month $60,000 our second month...and over $100,000 our third month...

We have found the benefits to be immeasurable. Any company that is given the opportunity to use a program such as yours should consider themselves fortunate."

Spiller Anderson, HomeTown Marketplace -- Virginia

Spiller Anderson began one of the first affiliate based programs in 1996. He had seen a seminar, did not have a computer, and did not understand the Internet. What he did understand was a simple, proven business model based on creating local agents to resell his Internet products and services locally, serviced by his company.

1. **Your Business Objective**
   HomeTown Marketplace targets local advertisers for the Internet. By setting up local agents and giving them the technology to succeed, all they have to do is market and promote this in their local area. We empower the local agent through a national network.

2. **Description of Product/Service (in two sentences or less)**
   Internet advertising, Web sites, and classified ads are the main products sold by this company. They provide a local market for the Internet community, backed by local agents.

3. **Your Target Goals in Terms of Sales, Savings, and Time**
   We wanted to generate about 100 agents our first year. The figures we generated are staggering, because the demand for localized Internet advertising is tremendous. We target the income generated for classified advertising, print advertising, and television/radio advertising, to add the Internet as another component.

4. **Key Problems Your Customer Faces**
   Finding anything in their local area about the Internet. The Internet is overwhelming, and needs to find an advertising mechanism to appeal to local advertisers.

5. **Your Customer Profile**
   Our target customers are small businesses located throughout the U.S. and Canada who cannot afford a fancy Web Site or advertising, and need to plug into a system that gives them Internet access at an affordable price.

6. **The Top Internet Places to Market and Joint Venture**
   Most of our marketing is not done online. We target local media companies who are already selling advertising, chambers of commerce, local groups, and associations for a specific niche.

   Online we advertise to promote the site, but most of our sales and leads come from the real world. This is an advertising mechanism we put into place to help augment current marketing efforts.

Conclusion: Keep it Simple

Objective: Begin the process again. Test always. Don't reject anything. Accept what works. And recognize your mistakes and errors as the key ingredients to your success.

Business online is not that difficult to figure out; you test, see what works, and put your money into what is working. Sometimes this happens overnight. Sometimes it takes a few months. Sometimes it can take longer. It all depends on how accurately you target your customer base and how quickly you can find out how to deliver what they want.

Marketing Tools

You will need to use:

1. Your Web Browser effectively as a target marketing tool; use your bookmarks to automate your marketing process, with the sites your regularly visit. If you choose to market on newsgroups, you can use your browser for this as well.

2. Use your Email program to communicate with mailing lists. The two best are Eudora (www.eudora.com) and Microsoft's Outlook (free with Internet Explorer 4, a great tool.)

3. A database, any database, to organize your information. Microsoft Access, ACT, and Microsoft Access are simple ones to use. This is critical to your business. Use these to personalize your email by name, also check out http://www.mailking.com for an easy to use program to do this.

4. Great sales letters; test your headlines online and find which ones pull best. Push people to different email addresses for the same offer. You test headlines by seeing which Web Page gets visited more. Then track how many visitors contact you (Ratio 1), and how many you Close (Ratio 2).

These tools will allow you to communicate and follow up with your customers via direct mail, direct email, and telephone. You can also train anyone to use this system.

The Internet Sales Channel Is Powered By Systems That Work Without You

Dear Friend,

What will you say about your business when it is over?

Businesses, like everything, do end. If you don't plan on how you would like it to end, you leave it entirely up to chance. I realized a fatal flaw in my approach that I am correcting.

So when I was forced to write about how I wanted my business to end, I was confused. I never thought about the end. And what I learned is that this attitude kills most businesses.

Most entrepreneurs create jobs for themselves. What is revolutionary is to create a system that works without you. It's the same logic that Ray Kroc applied to McDonald's. He created a system where the business could train people to do the tasks.

Here's how I see it: a Job depends mostly on me. If I can't do the job, no one will. A business depends on the system. You break down all the work and delegate it. Then you can go away, relax, or at least have it work, while you are not there.

Work on creating your system, and please feel free to visit my Web Site if you have any questions. I look forward to hearing from you.

Peace,

Declan Dunn

P.S. This Action Plan is just part of the E-Business Maximum Cash Flow System, a complete, turnkey training system that shows you how to dramatically increase your revenues through Strategic Internet positioning and quick testing.

For more information, visit:

http://webletter.net/impact/

or call me at (530) 873-3637, fax me at (530) 873-0192, or email dunn@webletter.net. Let me know the challenges you are facing, and I'll share three free issues of my newsletter.

IBM

e-business case studies

Recreational Equipment, Inc.

an e-business solution

Putting e-business to Work

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OVERVIEW

e-business case studies: Recreational Equipment, Inc.

With 1998 revenues of $587 million, Recreational Equipment, Inc. (*www.rei.com*) is America's largest consumer cooperative. Specializing in outdoor gear and clothing, REI operates 53 retail stores in 22 states, REI Online, a domestic and international mail order business and REI Adventures (a full-service travel company). As Dennis Madsen, REI Chief Operating Officer puts it: "We're in the business of helping people get out and enjoy life… perpetuating an outdoor lifestyle…selling fun, enjoyment, recreation, vacation."

This case study profiles REI's adoption of IBM's Net.Commerce and DB2 Universal Database to power REI.com (the Internet's largest store for outdoor gear and clothing), REI-Outlet.com, and Japan.REI.com, its heavily trafficked and rapidly growing online stores. While its sites have always run on IBM RS/6000 servers, the shift to Net.Commerce and DB2 Universal Database has dramatically improved its ability to creatively merchandise its products, a cornerstone of its strategy.

Recreational Equipment, Inc.

The Company

- America's largest consumer cooperative
- 53 retail stores in 22 states
- REI Online
- Domestic and international mail order business
- REI Adventures travel company
- $587M 1998 revenues
- Headquarters: Seattle, WA

The Web Sites

www.rei.com
www.rei-outlet.com
www.japan.rei.com

- Rated highest in its category by BizRate
- Four-fold increase in revenue from 1997 to 1998
- Online sales volume equals that of largest retail store

Business Benefits

- Increased revenue
- Increased customer satisfaction
- Increased customer loyalty
- Significant internal productivity benefits

IBM Products

- Net.Commerce
- DB2® Universal Database™
- RS/6000®
- AS/400®

BUSINESS DRIVERS

> ***"From day one, we looked at the Internet as a profit center and a business opportunity. This vision has been our focus, and it continues to drive us today."***
>
> *— Matt Hyde, Vice President of Online Sales, REI*

To REI, the magnitude of opportunity to sell over the Web became clear as early as 1995, when "successful" commerce sites were few and far between. According to Matt Hyde, REI's Vice President of Online Sales, they considered selling over the Internet as a viable opportunity – even in the face of widespread skepticism – because REI believed it could provide a distinct advantage to customers over traditional physical retailing or catalog retailing. According to Hyde, Web-based selling is the perfect way to deliver on the promise in REI's unofficial credo: "To deliver *any product, any time, any place* and to answer *any question*." More than just a tag line, REI has translated this credo into practice:

- *Any product* signifies that for product selection, REI is not confined by brick and mortar or the pages of a catalog. Today REI provides its broadest selection over the Web, with more products available online than are stocked in its 100,000 square-foot flagship store in Seattle. And that selection continues to grow.
- *Any time* signifies the convenience of a Web-based business, enabling customers to purchase products 24 hours a day, seven days a week.
- *Any place*, while also signifying convenience, has increasingly come to represent the ability to serve international customers, which continues to be an important and growing market for REI.
- *Any question* refers to the rich product information available to users of REI's three Web sites, which is far less feasible to provide in a catalog. "We sell a technical product," says Hyde, "and for providing rich content, the Web presents a distinct advantage over catalog retail, where you're confined by the pages of a catalog. You can't put the sort of technical information in [a catalog] that you can on the Internet and still allow people to slice and dice that information."

REI demands rigorous business performance from REI Online. "From day one, we looked at the Internet as a profit center and a business opportunity," says Hyde. "This vision has been our focus, and it continues to drive us today. It's an opportunity to serve our customers better through multiple channels, as well as an opportunity to find new customers."

Hyde notes that as REI's online sales have soared, it has become increasingly apparent that the "average" online REI shopper is the same as the "average" REI customer overall – implying that Web purchasing is taking place across a wide swath of existing customers. Indeed, Hyde believes that REI's strategic focus on the Web as yet another sales channel is borne out by the number of customers who routinely use the Internet. "We are finding a lot of multi-channel customers," says Hyde. "These are people who go to the store for one reason and shop online for another reason. They might pick up a catalog during the holiday season, flip through it and buy a couple of items over the phone. And that's great, because what we're trying to do is to let customers shop with us in any way that they choose." REI has installed network computer-based kiosks in each of their stores so customers – and employees – have easy access to the more than 10,000 items available through the Online sites. REI has integrated their customer channels – direct, catalog, online and kiosk – so that their customers have a single, seamless view of REI, and REI has a single, integrated view of their customers.

> ***"The bar has been raised in all areas, from breadth of product to the sophistication and usability of the interface to navigation."***
>
> *—Matt Hyde*

REI
www.rei.com
SEARCH
The Trail Awaits
Gear up for
adventure at
Welcome to REI.com

REI partners with IBM to advance its e-business to the next generation.

ADOPTION STRATEGY

> ***"We're finding a lot of multi-channel customers. These are people who go to the store for one reason and shop online for another reason....That's great because what we're trying to do is to let customers shop with us any way that they choose."***
>
> *— Matt Hyde*

Since introducing its online store in late 1995, REI has tracked an increase in performance demands among its users. Hyde believes that overall, consumers now expect more service, an easier interface and fewer technical glitches when buying over the Web. "Our 1995 site had glitches, and it was the best available," says Hyde. "Now, you can't launch a site like that and get any attention. The bar has been raised in all areas, from breadth of product to the sophistication and usability of the interface to navigation."

REI adopted Web commerce technology when it first established an online store using Netscape's Merchant Server software. While Hyde voices no regrets about REI's choice of Netscape software to run its commerce site, he concedes that the constant upward spiral in technical demands made it increasingly hard to achieve the kind of functionality that REI required. "In the Internet world, you're under constant development; it never stops," says Hyde. "Throughout the past few years, we've done a tremendous amount of custom coding and enhancements, but what ended up happening with the old system is that it didn't keep up with demand of what customers were driving us to build. On the surface, e-commerce sounds relatively easy. It's not until you have experience trying to integrate a high volume, high functionality Web site into existing business processes and applications that you realize that it's a lot harder than it seems. It's like an iceberg – the view from the browser is only 10% of what it takes to build a successful and profitable Web site." When REI began looking at adopting Net.Commerce it was important that their significant investments were not disrupted. IBM's commitment to open multi-vendor standards, embodied in the IBM Application Framework for e-business, enabled REI to leverage those investments in an entirely new way making their solutions more effective and allowing them to integrate with their back end systems.

What's more, the increasing amount of custom programming had begun to detract Hyde and his group from their core mission. "As a philosophy, I always remind the online store organization that we are not software developers. We're retailers," notes Hyde. "What we want to do is focus on what we do best, and that's selling equipment."

REI's flagship store in Seattle, Washington serves as a mecca for outdoor enthusiasts.

Adoption Timetable

REI first conceived its Web-based retail strategy in late 1995, then launched it in September 1996. The next major milestone was implementing real-time availability for checking and reservations, which was completed in February 1997. Some six months after this implementation, in mid-to late-1997, REI decided to change its commerce platform and announced its decision to adopt IBM Net.Commerce in early 1998.

REI executed its migration to IBM Net.Commerce in conjunction with launching its second online store, REI-Outlet.com, in August 1998. In fact, REI-Outlet.com, an entirely separate operation from REI.com, represents the first instance where the company used IBM Net.Commerce. Once REI-Outlet.com was successfully launched, REI then focused their attention on migrating the REI.com store to the Net.Commerce platform, completing the move in October 1998. Figure 1 represents the implementation timetable for REI's three Internet sites.

Recently, REI launched their third web site – Japan.REI.com (*www.japan.rei.com*), a new Web site specifically for Japanese outdoor enthusiasts. REI Japan provides fully translated product information and detailed product information on all gear and clothing, including specifications. The site is Japan's largest online outdoor store and is designed to better serve REI's large Japanese customer base of approximately 86,000 customers. Of REI's international Internet sales, Japan accounts for about half the orders. REI's online site preludes REI's first physical store in Japan, a 30,000 square foot retail store currently being constructed in the Tokyo suburb of Minami-Machida. The store will feature an indoor climbing pinnacle and outdoor mountain bike trail, along with many other special interactive features including Internet kiosks.

> ***"When you change commerce packages, there's a huge learning curve. I was going to make this change once, but I wasn't going to do it again, so I wanted to pick the right package... for the next several years."***
>
> *— Matt Hyde*

Planning initial online store
Implementing real-time availability for checking and reservations
Decision to change platform to IBM Net.Commerce
Migration to Net.Commerce on REI.com site
4Q95
3Q96
1Q97
3Q97
1Q98
3Q98
4Q98
2Q99
Launching initial REI commerce site
Decision to change commerce platform
Rollout of Net.Commerce on REI-Outlet.com site
Launched REI Japan

Source: Recreational Equipment, Inc., 1999

Figure 1. Implementation Timetable for REI Online

Architecture

REI's transaction platform comprises five IBM RS/6000 web servers and one IBM AS/400 back-end server. The main commerce site runs on four RS/6000 servers: two running Net.Commerce for REI.com, one running Net.Commerce for REI-Outlet.com, one running Net.Commerce for Japan.REI.com, and a fifth functioning as a data server for REI.com. These platforms are integrated throughout the organization with data stored on REI's mainframe as well as on IBM AS/400s and IBM RS/6000s. All told, REI Online is linked with six major databases, including the mail order system, pricing data, hierarchy product information and SKU databases. While the linkages related to product availability and reservations are real-time to an RS/6000 in its warehouse, most linkages (such as pricing databases) are performed using batch processing. Figure 2 illustrates the flow of REI's systems.

As mentioned above, REI's growing pains had little to do with hardware and everything to do with its core transaction software, which wasn't keeping pace with the demands of online retailing. In looking for a long-term solution, REI examined all the leading systems on the market, including offerings from Netscape, Microsoft, Open Market and Broadvision. According to Hyde, REI's decision to adopt IBM Net.Commerce is rooted in both the merits of the product and IBM's clear commitment to supporting e-commerce. Hyde says that the main deciding factor was flexibility. "Net.Commerce is more than just a stand-alone system. It's also a very strong development platform. It allows incredible flexibility," says Hyde. "How we use our store – and the interfaces we use – are a competitive advantage. We didn't want our hands tied on the way we merchandise our store, and Net.Commerce didn't tie our hands."

Mainframe
AS/400
RS/6000 Database Server
RS/6000 for REI.com
RS/6000 for REI.com
RS/6000 for REI outlet. com
RS/6000 for Japan.REI. com
Real-time Linkages = - - - - - - - - - - - -
Non-real-time Linkages = ————

Source: Recreational Equipment, Inc., 1998

Figure 2. Basic System Architecture: REI e-Commerce Platform

Featured IBM Products

Net.Commerce

IBM Net.Commerce is an integrated software solution for businesses to sell goods and services over the Internet. It is flexible and integrates seamlessly with a company's existing business system while offering customers a dynamic shopping experience. Net.Commerce is ideal for both business-to-business and business-to-consumer applications.
www.software.ibm.com/net.commerce

DB2 Universal Database

DB2 Universal Database is a relational database management system that is fully Web-enabled, scalable, and features multimedia capabilities with image, audio, video, text and other advanced object relational support. DB2 Universal Database delivers more Web enablement with built-in Java support, client/server functions, and more support for open industry standards.
www.software.ibm.com/db2/

RS/6000

The RS/6000 family combines the benefits of UNIX computing with IBM's leading-edge RISC technology. RS/6000 systems handle demanding scientific and technical computing, business intelligence and Web serving tasks. The platform provides the power to create change and the flexibility to manage it.
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AS/400

By integrating hardware, software, middleware and the operating system, AS/400 provides power and flexibility to your business. The latest hardware enhancements and newest version of the AS/400 operating system, provide you with the performance and tools needed to get a quicker return on your investment.
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Notwithstanding his enthusiasm for Net.Commerce's core functionality, Hyde sees IBM's commitment to electronic commerce as a "big issue" in selecting them as an e-business partner. In Hyde's opinion, this commitment is evidenced by the frequency with which IBM has upgraded Net.Commerce. Hyde, reiterating his disdain for getting into the software business, comments: "We want our *business partner* to be the software company, and IBM made a commitment to do that."

REI does not take the subject of platform changes lightly. Its choice of IBM as an e-business partner speaks volumes about REI's expectations regarding the long-term durability of the Net.Commerce platform. "When you change commerce packages, there's a huge learning curve," says Hyde. "I was going to make this change once, but I wasn't going to do it again, so I wanted to pick the right package...for the next several years." In addition to providing for its future needs, REI also wanted to preserve its legacy investments, principally the custom code that had been written over the past two years to connect its online store to its legacy systems. "I had hundreds of thousands, if not millions of dollars tied up in this [system], and we didn't want to throw it away. And since [Net.Commerce] has also lessened the need to do custom coding in the future, it's a two-fold benefit."

> ***"Net.Commerce is more than just a stand-alone system. It's also a very strong development platform. It allows incredible flexibility. We didn't want our hands tied on the way we merchandise our store, and Net.Commerce didn't tie our hands."***
>
> *— Matt Hyde*

Two of REI's more than 5 million members scale a mountainside with their REI gear.

RETURN ON INVESTMENT

> ***"E-mails from frustrated users have basically stopped, and we now implement the search box on the top of every page. Before, we didn't do this because it was not a feature we were very proud of."***
>
> *—Matt Hyde*

REI looks at the return of its e-business investments on two levels: benefits accruing to REI from doing business over the Internet in general, and benefits from doing business over the Internet *using IBM technology*. Clearly, the most important benefit to REI has been the added revenue and profit attributable to its Web channel. While Hyde declines to name specific sales figures, he notes online revenues have grown significantly, with a nearly four-fold increase between 1997 and 1998, and more than a million visitors per month. At present, Hyde says REI's online sales volume equals that of its largest retail store. A less tangible, but perhaps more important benefit of REI's Web initiatives has been an increase in customer satisfaction, which in turn drives loyalty and repeat business. "We're able to provide better customer service to all of our members and customers. As a retailer, I don't get to choose how my customer shops. The loyalty that people feel, and the repeat shopping that we see on the Internet is really amazing. 30% of our sales happen between 10 pm and 7 am when no store is open in the nation," according to Hyde. REI is rated highest in its category by BizRate®, a third-party customer service measurement firm, for such factors as usability, functionality, selection, price and customer loyalty. Figure 3 outlines the benefits of REI's e-commerce platform.

REI's return on its investment in the IBM Net.Commerce platform has already become clear (see Figure 4). According to Hyde, the benefits of Net.Commerce fall into four categories:

- *Improved merchandising capability* – "Net.Commerce provides the ability to merchandise in unique and meaningful ways to our customers because of the inherent flexibility of the technology. This improved merchandising will in turn drive conversion, the percentage of visitors to the site who actually complete a transaction." REI has relied extensively on Net.Data to customize its customer interface. "We were able to do a tremendous amount of merchandising through Net.Data, giving it the look and feel that we wanted, which is extremely important in any online retail business."
- *Reduced IT resource burden* – "Within a week after launching REI-Outlet.com (REI's first deployment of Net.Commerce), it became evident that the stability of the platform was going to free up IT resources to work on more meaningful projects."

Overall ROI Benefits

Function	**Benefit**
Sales and Marketing	Increased revenues overall Increased conversion of site visits to sales Increased customer loyalty
Customer Service	Increased customer satisfaction Ability to provide broader and deeper technical product information Broader product availability
REI Employees	Improved productivity for retail employees More efficient allocation of IT resources

Source: Recreational Equipment, Inc., 1998

Figure 3. Benefits of REI's e-Commerce Platform

Net.Commerce ROI Benefits

Benefit	**Result**
Improved merchandising capability	Drives percentage of visitors who complete a transaction (conversion rates)
Reduced IT resource burden	Platform stability allows IT resources to be redeployed
Improved customer search capability	Improved conversion rates Increased customer satisfaction
Enhanced employee search capability	Improved employee productivity

Source: Recreational Equipment, Inc., 1998

Figure 4. Benefits of REI's Adoption of Net.Commerce

•*Improved customer search capability* – Net.Commerce offers sophisticated ways of helping customers find products, including advanced text extensions to DB2 which allow proximity, boolean, fuzzy and synonym searching, and parametric, sales assistance and product comparisons using Net.Commerce Product Advisor. "Before we went with Net.Commerce, our number one complaint was search capability, which we really couldn't change on our old platform. With Net.Commerce, we were able to go in and customize the search function by product category, making it far more accurate." Hyde believes that this "tremendous" increase in accuracy will benefit REI's conversion rates, while increasing customer satisfaction. "E-mails from frustrated users have basically stopped," says Hyde, "and we now implement the search box on the top of every page. Before, we didn't do this because it was not a feature we were very proud of."

•*Enhanced Employee Search Capability* – REI has also been able to leverage the intelligent search capabilities of Net.Commerce to increase employee productivity in its 53 retail stores. "We're now rolling out the online store as a kiosk in all of our stores," says Hyde. "By doing some customization of the search box, store employees can search for products by SKU [number] and many other factors that are meaningful to REI employees."

FUTURE PLANS

> ***"When we made the move to Net.Commerce, we made a commitment.... There simply aren't any vendors out there that have a platform that is going to do the trick for us like IBM does."***
>
> *— Matt Hyde*

In Hyde's view, a successful online retailing strategy has four parts:

- Content (*e.g.*, product information)
- Merchandising (*e.g.*, presentation, "look and feel," navigation)
- IT architecture
- Site operation

Going forward, Hyde will continue to refine all aspects of REI's operation, while maintaining balance between these four factors. "The rapid pace of the evolution of our site isn't going to slow down at all," says Hyde. "We have a tight schedule for the next year that looks a lot like what has happened in the last year." One of the next developments that REI plans is the introduction of Net.Commerce's "Sales Assistance" function, which helps online buyers through the product purchasing decision tree by presenting a question-and-answer selection process to narrow down the range of product choices for each customer. As its plans unfold, REI intends to maintain a close partnership with IBM. "When we made the move to Net.Commerce, we made a commitment because we can't afford the money and time required to switch vendors, and there simply aren't any vendors out there that have a platform that is going to do the trick for us like IBM does. Actually, IBM undersold the capabilities of Net.Commerce. We've found it to be a much better product than we thought when we made the decision to switch," says Hyde.

REI sees IBM as more than a technology provider, and has found far greater value in the partnership than just great hardware and software. According to Matt Hyde, "IBM is a huge global company with incredible assets that we never knew existed. The more they understand about our business goals, the more solutions and ideas they bring forward to help us be a leading online retailer."

"The Internet has changed the way we are working as a retailer – there's no question about that," says Hyde. "It's multi-faceted and it spans everything we do. I believe very strongly that you have to pick your niche and you have to do it better than anybody else. My niche is outdoor retailing. My job is to do it better than anybody else."

For more information, please contact your
IBM marketing representative or
IBM Business Partner.

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Leading retailer makes Internet shopping a personal experience

By matching the ambiance of its unique stores, Brookstone (*www.brookstoneonline.com*) has elevated its online offerings of innovative, eclectic and hard-to-find tools and products from simply a digital catalog to an integrated shopping experience that can be shaped according to each consumer's interests. According to Brookstone, its e-business strategy had to be based on three key principles: close integration with other operations to deliver a seamless "Brookstone experience"; continued marketing to promote new and repeat site traffic; and the capacity to keep up with anticipated growth.

> *"It's a convenient way to shop online. The interactive nature of the medium also allows Brookstone to easily and inexpensively communicate with our customers about their product interests."*
>
> *—Michael Anthony, President and CEO at Brookstone*

"Brookstone worked hard to translate the special atmosphere of their stores and catalogs into their online site. They simulated walking down an aisle in the store and made it easy for visitors to browse," says Sharyn Rached, vice president of operations for the i9 Internet Commerce Group, the co-developer of *www.brookstoneonline.com.*

Application	Internet-based electronic catalog with secure online ordering
Business Benefits	International presence; site traffic increasing 10 percent each month; increased sales; increased knowledge of customer base
Software	IBM® Net.Commerce IBM DB2® IBM Net.Data™ IBM AIX®
Hardware	IBM RS/6000®

Creating a comprehensive solution

Brookstone Company, headquartered in Nashua, NH, realized early on that online success depended on more than merely hosting an online catalog. As a result, IBM Business Partners i9 Internet Commerce Group in New York City and Trifecta Technologies in Allentown, PA built and launched the new site. Subsequent updates to the Web site have been made by Web Emporium in Phoenix, AZ.

Brookstone's comprehensive e-business solution incorporates IBM Net.Commerce, Net.Data and DB2 on AIX powered by the IBM RS/6000 Web server. One reason Net.Commerce was selected was its robust AIX solution, which offers high performance and extensive hooks for the planned integration with Brookstone's fulfillment systems. Another key reason was the scalability of

Brookstone
SEARCH FOR A PRODUCT
REVIEW YOUR ORDER

Brookstone brings its unique ambiance to the Web for an integrated shopping experience.

e-business

Net.Commerce, which was necessary to accommodate the ever-increasing volume of visitors to Brookstone's site. Brookstone launched its Internet site in November 1997, and thanks to an aggressive marketing strategy, more than 100,000 consumers visited the site in the first month.

By January, Brookstone had expanded the site's offerings and capabilities. The site is updated daily, plus randomly displayed home page graphics and other selections ensure the site remains fresh to frequent visitors. Descriptions and photos convey the appeal of more than 600 available products, which represent about 50 percent of the products listed in Brookstone's print catalog. About 6 percent of online orders are from overseas customers, giving Brookstone an international presence it never had before.

Creating a unified image

Brookstone made a strategic decision to incorporate the "look and feel" of both its catalog and storefront operations into the Web site. The experience of "thumbing" through Brookstone's print catalog is duplicated by allowing shoppers to electronically "browse" their product selection by price or product description. Web Emporium designed the site's browsing feature to give all products an equal chance of being purchased. Upon entering the online catalog, each visitor sees a different set of products.

Specific items can be located by using the site's search engine, another unique Web Emporium design. Visitors to the site can conduct a free-form search based on any combination of catalog numbers, price ranges and specific categories including categories for special holidays, such as Father's Day.

Currently, after making a selection, customers can place orders online with secure credit card transactions or by phone or fax. In the near future, Brookstone plans to integrate the online site with its financial, inventory and logistics systems, which, for example, will allow customers to find out if an item is in stock before ordering or to view an estimated shipping date. Brookstone will benefit by being able to reduce call volumes at its call center.

Cultivating customers

In addition to creating synergy between its real-world stores and its Web site, Brookstone is also looking to its e-business solution to increase customer traffic. Traffic to the site has increased an average of 10 percent per month since the site was launched. A primary focus of the site is to register customers. Their profiles differ somewhat from Brookstone's retail and catalog customers. By cultivating these customers, Brookstone can expand beyond its traditional customer base.

"It's a convenient way to shop online," says Michael Anthony, Brookstone's president and CEO. "The interactive nature of the medium also allows Brookstone to easily and inexpensively communicate with our customers about their product interests. Brookstone has a wide variety of specialty gift items. The more we know about our customers, the more we can personalize and customize products for their needs."

Putting the focus on business

In addition to the usual traffic-generating tactics of promoting the Web site in its catalog and registering with search engines, Brookstone is also promoting mutual marketing agreements. These agreements offer other sites a commission for Brookstone products sold through that site. "Many companies make the mistake of designing a site, then creating a marketing plan to promote that site," says Barry Levine, president of the i9 Internet Commerce Group. "It's much more effective to create your marketing plan first, then build your site. That way you know what the goals of your site are, and you can more easily shape the site to meet targeted customer or prospect requirements as well as corporate imperatives."

Like IBM, the folks at Brookstone believe e-business is more than just technology. With careful planning and consistent integration with its existing promotional strategies, Brookstone has opened a store in cyberspace that delivers the same impression as its other retail stores. Everything's there at *www.brookstoneonline.com* — everything, perhaps, except for that heavenly feeling of sitting in a Brookstone massage lounger.

For more information, please contact your

IBM Marketing Representative or IBM Business Partner.

Visit our Website at:
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IBM Launches Global Small Business Initiative Backed by $100 Million Marketing Campaign.

WHITE PLAINS, N.Y.--(BUSINESS WIRE)--May 4, 1999--

Program Includes New Customized Web Link to Internet-enabled

Applications and Services

IBM today introduced the IBM Small Business Program, a sweeping new global initiative, backed by a $100 million marketing campaign, that will help small businesses leverage information technology and grow through e-business. The program, the most comprehensive small business initiative of its kind, includes an innovative new customized Web link, competitively-priced, customizable hardware and software bundles, e-business tools, and technology service and support programs.

In addition, IBM is adding renewed emphasis to its sales and marketing channels activities by actively recruiting Business Partners that support smaller businesses, or companies with fewer than 100 employees. This program further underscores IBM's small business strategy of reaching its customer through various distribution channels and builds on the momentum of the company's ongoing commitment to the small business marketplace. This year, for example, IBM announced the IBM PC 300GL Small Business

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Series, the company's first commercial desktop PC to be designed specifically for small businesses, and a new marketing relationship with American Express to provide products at discount to small business corporate cardmembers.

IBM Small Business CustomConnections

New offerings include IBM Small Business CustomConnections, a productivity tool that allows small businesses to manage and gain access to Internet resources they need to conduct e-business. This application allows users to create customized pages that "organize the Web" according to business needs. Web-based application links can be grouped into categories that define the application's business value to the company. Users can, for example, receive personalized news, weather and stock quotes based on the company's profile and be reminded about upcoming events and appointments via e-mail.

Additionally, small businesses can easily access existing Internet-based information in such areas as sales and marketing, market research, public relations, customer service, computing resources and legal because CustomConnections includes a set of links to some of today's leading Web-based applications. IBM is also negotiating with major companies, including Internet service providers and financial services companies, to tailor this application for their customers.

Small Business Program

"With today's announcement, IBM is offering the most extensive program of end-to-end solutions for small businesses than any other company in the world," said Peter Rowley, general manager, IBM Global Small Business. "With support including IBM's small business Web site and toll-free phone numbers, our program provides easy access to IBM's diverse products, services and solutions, as well as online consulting and education programs."

Underlying its all-inclusive, one-stop shopping approach for growing companies, the IBM Small Business Program is designed to enhance the relationship between IBM and its small business customers and, for the first time, unifies a number of IBM's existing small business initiatives and product offerings.

IBM employees go back to class.

Grabbing a cause: Jones Apparel Group takes on teachers.

The program provides greater value to small businesses via a series of distinct benefits in the following categories:

-- Price Advantage -- Delivers competitively-priced, customizable hardware and software bundles that provide small businesses with the solutions they need. One affordable lease offering of the program is SuccessLease from IBM Global Financing, which simplifies the leasing process by providing approval within 15 minutes on orders as small as $1,000.

-- Support Services Advantage -- Includes a wide range of on-site and remote packaged support options, as well as education and training programs to help small businesses manage technology. One program, for example, provides an Education Card that entitles an individual to attend unlimited IBM public classes or conferences (over 500 to choose from) for one year at a fixed rate. As part of this services package, IBM offers a series of online experts for small businesses and has also deployed a specially-trained staff of Small Business Advisors to personally answer questions via telephone from its Call Centers.

-- e-Business Advantage -- Offers a variety of tools designed to help growing businesses use the Web for communication, collaboration, and commerce. One example is the recently-announced IBM e-business Accelerator, an on-line consulting service to help executives understand how they can use the Web to achieve competitive advantage. IBM's e-business Accelerator is an interactive Web site that provides information, consulting advice, and customized assessments of a company's readiness to enter the digital marketplace.

In addition to these new program elements, IBM offers two customizable hardware and software bundles designed to meet a small business' needs while addressing its stage of growth. The PC-based IBM Small Business Internet Solution allows small businesses to make an easy transition to e-business. The base package includes an IBM PC with modem and monitor, IBM Internet Connection Services, IBM's Startup for e-business and Home Page Creator software applications. The IBM Client/Server Network Solution provides a turnkey networking solution for growing businesses. It features an

IBM Netfinity server, Lotus Domino Intranet Starter Pack software and all necessary interface cards, hubs, tape backup drives and modems for a customer's specific business needs.

"IBM's announcement is significant because it represents a complete e-business solution for small businesses. In doing so, it provides a single point of contact for a number of complementary technological and business solutions that, if adopted, help to place small business on a level playing field with larger enterprises," according to small business technology analyst Joseph Villarosa.

He further added, "IBM had the courage to step back, reevaluate its small business strategy and fill the holes with a new and exciting program that focuses on the core e-business related technology tools needed by today's small businesses. No other technology vendor has created such a far-reaching program."

The IBM Small Business Program is backed by a $100 million global marketing initiative which includes $70 million in print and electronic media advertising, as well as Web-based, affinity, and direct marketing campaigns. Not all offerings are available in every country covered under the program.

About IBM:

IBM is a world leader in providing business solutions for small businesses. Through its Global Small and Medium Business organization, IBM offers a host of cross-industry and industry-specific solutions designed to meet the needs of growing businesses. IBM also is a leading provider of electronic business solutions and is dedicated to helping customers, IBM Business Partners, and developers exploit the potential of network computing across a wide range of businesses and industries. For further information visit www.ibm.com/smallbusiness or call 888-IBM-5800.

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Electronic Commerce Environments: Corporate Obstacles and Opportunities to Competitiveness

by
Chris Vestal

INSS 690 Thesis
Masters of Science: Management Information Systems
Bowie State University

August 1, 1999

Graduate Advisor: Mr. John Meinke,
Bowie State University MIS Program Coordinator

Thesis Statement

The future of enterprise competitiveness relies on the entrance and active participation in the electronic commerce market and the management of resources through integration and cooperation.

Abstract

Electronic commerce (EC) is changing how businesses market their products, and how they serve their customers and business partners. EC growth has opened doors to new opportunities, new tools, and has also brought about new burdens on corporate entities. This paper surveys electronic commerce from the macro and micro perspectives by analyzing the external and internal pressures on business environments. After the

environments are defined, the paper studies the forces these environments exert on enterprises, and how enterprises are reacting to those forces. The paper reviews enterprise business relations, and the tools currently emerging in reaction to these drastic environmental changes. This paper will attempt to present some of the options available to the enterprises of today and tomorrow, and will present some of the apparent dangers to the enterprises if they fail to react promptly.

The EC environment is defined by the technologies, the benefits, and the barriers to EC development. The areas and levels of EC describe the types of EC and shows the extent to which a business can incorporate EC into its operations. Through EC, businesses can improve their marketing, distribution, and functional operations by combining their Internet sites with secure transaction systems. The Internet as a communication channel eases expansion into the global economy by reducing geographic and linguistic barriers. Businesses have increased opportunities to manage both business and customer relationships. Consumers gain new opportunities to browse, research, and purchase goods and services at their convenience. EC growth will accelerate when solutions to the market and legal barriers are actualized. The most important barriers include EC awareness, lack of confidence in Internet security, and lack of legal standards.

The EC business environment contains the concepts for the EC purchase process using secure messaging systems. The components found in this environment include the business model, the customer interface, security controls, and the secure messaging system. The secure messaging system enables the EC transaction process by offering a means to present, authorize, authenticate, process, and confirm the transactions.

The EC enterprise environment studies how the micro and macro environments mesh in a corporate culture. This environment describes the network environments, business-to-business relationships, and the tools used in front and back-end operations. EC has impacted the concept of the extended enterprise. Globalization has strengthened the need for network environments. Fitting with the network environments come the need for communities or value-nets. These communities find havens in extranets, the future marketplaces for the majority of EC transactions. These communities are the results of sharing, cooperation, and integration between business partners in the formation of their supply chains. To manage such extensive partnerships across multiple borders and in various directions, businesses must turn to complex enterprise management tools. These tools help enterprises control internal and external relationships and provide competitive advantages to its participants.

There are many innovative technologies emerging that will enhance the EC experience. Which of these technologies will endure and provide the EC community with the desired standards is still to be determined. This paper attempts to present a picture of the possible solutions available to businesses today, and what they can expect to see in the near future.

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Introduction

Electronic commerce (EC) is changing how businesses market their products, and how they serve their customers and business partners. EC growth has opened doors to new opportunities, new tools, and has also brought about new burdens and risks on corporate entities. Businesses must evaluate the parameters of establishing an online presence and conducting online operations with their customers and business associates. More than likely, the potential benefits will demand drastic changes within the company's borders. Before companies can offer such services to its external partners, they must look internally first. In essence, a company must efficiently conduct electronic business before it can conduct electronic commerce. In the near future, entering the EC marketplace is may no longer be an option--it will become a necessity.

This paper explores the major decision parameters involved in a business setup by studying their environments and their internal and external pressures. After the environments are defined, this paper will study the forces these environments exert on enterprises, and how enterprises are reacting to those forces. To accomplish this task, the paper will address enterprise business relations, and the tools currently emerging in reaction to these drastic environmental changes. This paper will attempt to present some of the options available to the enterprises of today and tomorrow, and will present some of the apparent dangers to the enterprises if they fail to react promptly.

This paper includes three important sections. The first section, the EC environment, discusses electronic commerce (EC) in general. It provides explanations to the types, the benefits, and the barriers to EC development. Defining this environment helps show the extent to which a business can incorporate EC into its operations. The second section, the EC business environment, contains the concepts for the EC purchase process using secure messaging systems. The components found in this environment include the business models, the interfaces, the security controls, and the secure messaging systems. The third section, the EC enterprise environment, combines the concepts defined in the external and internal environments and studies how they relate in a corporate environment. The enterprise environment includes studies on network environments, business-to-business relationships, and the tools required to conduct front-end and back-end operations at an enterprise level. Topics of discussion include extranets, outsourcing, supply chain management, and enterprise resource planning.

Since the majority of EC is conducted between businesses, this paper will focus primarily on business-to-business EC environments. Emphasis is placed on the reasons why EC is an important factor in retaining or gaining competitive advantages in the future economy.

The Electronic Commerce Environment

Electronic Commerce (EC) is the sharing of business information, maintaining business relationships, and conducting business by means of telecommunication networks (Zwass, 1998). In most cases, EC is not a stand-alone endeavor. Usually it is an add-on to the business environment that is integrated into existing operations. This integration demands many modifications in the organization's strategies, investments, business processes, and information technology (IT).

Principle technologies involved in EC include: telecommunications and networking, client/server technologies, multimedia and hypermedia technologies (WWW), Electronic Data Interchange (EDI), database management systems (DBMS), message handling and work flow management systems, groupware, electronic meeting systems, and cryptography (Zwass, 1998). Zwass also describes seven meta-levels of EC. The first three levels deal with the communications infrastructure. These levels relate to the communication backbone of the system that provides the functionality. The fourth and fifth levels, secure messaging and services, enable a secure means of search, retrieval, and information delivery. These levels include the tools and services needed to conduct the secure communications. The last two levels describe the products and structures. These levels contain the tools that grant the provision of goods and services to consumers and business partners (1998).

EC market development closely revolves around the technical developments in the IT community. Sinking hardware, software and communication costs enable even smaller businesses to participate in EC. New Web technologies are continuing to enhance the network environment and the user's interface to these technologies. Virtual companies and communities are forming to reduce the effect of geographic barriers and to increase global visibility. As secure messaging technologies improve, so will the EC experience. Before an organization "jumps on the bandwagon," they must first decide how they can benefit from EC, and who they can serve.

The Areas of EC

EC operations produce three major relationships. Each of these relationships may be independent, may overlap, or may even be combined in an integrated system. Each area is distinct because they are designed under different mindsets. The strategy, target audience, and purpose will define the interfaces, access capabilities, and the messaging system.

A business-to-consumer system applies to organizations that focus their operations towards a direct relationship with the consumer. They offer consumers access to information, products, and services, and use the telecommunications media as marketing, sales, and distribution channels. Their operations involve the pre-sale phase, the sale, and the post-sale phase of customer service (Row, 1997).

A business-to-business system is focused on business relationships. These types of business relationships, as listed by Applegate, McFarlan, and McKenney (1996), include joint marketing partnerships, intra-industry partnerships, buyer/seller partnerships, and IT vendor-driven partnerships (p. 186-188). Corporate procurement, electronic data interchange (EDI), and the sharing of resources for collaborative projects highlight the operations.

A business-to-administration system is similar to business-to-business, but provides functions to the administrative bodies of an organizational network (Booz-Allen & Hamilton, 1997). Businesses practicing this type of system most often have a buyer/supplier relationship in an integrated supply chain. The business-to-business and business-to-administration areas make up 89% of all EC activity (Cockburn, Wilson, 1995), and is expected to sustain that percentage through the year 2001(Computerworld, 1998). Business-to-business EC realized a 131 billion dollar industry last year. According to Forrester Research, this industry will reach 1.5 trillion by 2003 (Krantz, 1999).

The Levels of EC

Businesses have several options as to how much of their processes to integrate into their EC strategy. Their level should reflect the types of relationships they intend to serve. Booz-Allen & Hamilton (1997) state four basic levels of EC that describe the extent of integration which a business might choose to implement according to their business strategy. These levels are substitution, information access, business process management, and inter-enterprise/consumer business process management.

The lowest level of integration is a substitution of traditional forms of communications. E-mail may be a substitute for the postal service or telephones. Face-to-face meetings may be substituted with the implementation of video-conferencing or other multimedia applications.

The second level is information access. This level introduces data capture and management of business documentation. Optical scanning and remote access are prime examples of this level. Clarke (1999) disagrees that this is part of EC. In his definition, electronic business processes, such as electronic registration and enrollment processes, should not be included in the definition of EC because they have nothing to do with the exchange of goods and services.

The third level, business process management, enables new ways to perform business processes within the corporate boundaries. Business process reengineering is a common method used to optimize business processes around a new technology, or to fit the technology to the processes. There are many workflow applications on the market to address these tasks.

The highest level of integration extends beyond the corporate boundaries. Inter-enterprise/consumer business process management enables organizations to form new business processes that include electronic interaction between them and their macro-environment participants.

For those organizations that opt to enter the EC market, the goal is to reach the highest level of integration. With each level, the commitment, cost, and complexity increase; but each level also yields an increasing number of benefits. Substitution of traditional communications and access to information account only for 30% of the total potential benefits. The remaining 70% can only be achieved if the business processes are adapted to the new environment and a large part of business transactions are done electronically (Booz-Allen & Hamilton, 1997).

The Benefits of EC

Virtually all parties involved in the EC marketplace can benefit from their participation. Based on the concept of supply and demand, when consumers become aware of the benefits they can receive they will demand more service. Likewise, when businesses are aware of the benefits they can receive and the opportunities that await them, they will also demand more service and begin to offer more online services as well. The benefits are best grouped as generic, consumer, and commercial benefits.

Generic Benefits

The generic benefits include those that enhance the EC experience from both a business and consumer perspective. A major benefit is that it reduces geographic barriers. Consumers can search and purchase products that are not available in their immediate vicinity. Businesses can reach potential customers that need not rely on a face-to-face purchase. They can achieve global visibility through a relatively inexpensive means of communication. Businesses can monitor and conduct operations over great distances, leading to the formation of virtual companies. Multi-lingual interfaces enhance the communication possibilities found in an EC relationship. Once visibility is achieved and the language barriers are broken, businesses can then focus on presentation, analysis, comparative shopping, and product procurements.

Consumer Benefits

Consumers gain access to great amounts of information on all kinds of topics, including products, vendors, and companies. However, the information alone is not enough. The ability to search and analyze at their convenience adds functionality that the consumers will soon take for granted. Through the hypertext environment of the World Wide Web (WWW) consumers initiate and control their own searches. They can comparison shop and make their own purchase decisions without the pressures from overzealous salesmen and the hassles of long waiting lines (Curtis, 1998). They also receive a wider availability of hard-to-find products.

Commercial Benefits

The benefits to businesses are apparent in marketing communications, operations, and distribution (Hoffman, Novak, & Chatterjee, 1996). In the marketing arena, customer interaction facilitates relationship marketing and customer support, which provides a means for retaining direct relationships with the customers. The interactive nature of the medium can be used to engage consumers in activities that occur at their convenience. These activities may include customized advertising, promotions, sales incentives, and services. This engagement, combined with a personalized buying experience should generate customer loyalties, specialized communities, and enables up-selling and cross-selling opportunities (Alper, 1998). Customized services require a means of gathering market intelligence and consumer monitoring. These activities are usually achieved through server logs and cookie technology.

Operational benefits, given some form of EDI, result in reduced errors, time, and overhead costs in information and transaction processing. However, the development costs for back office integration often accounts for three-quarters of the total development costs (Berry, 1998). The formation of a new business channel allows the creation of new markets and segments, increased generation of sales leads, easier market entry (especially geographically remote markets), and facilitates faster time to market (Hoffman et al., 1996). Shikhar Ghosh (1998), Open Market's former CEO and current Chairman of the Board, also adds that companies can dominate the electronic channel of an industry or segment, control access to customers, and set the business rules and standards.

As a distribution channel, the WWW allows some firms to eliminate most of their distribution costs. Their catalogs are never out-of-date, brochure mailing costs disappear, and they can present the buyer with multimedia presentations (Buchanan, 1995). Virtual floor space is much less expensive than physical floor space. Companies can provide a market for low-turnover goods and those goods that are too costly to maintain at store locations (Row, 1997).

Firms may benefit from reduced costs in the procurement process through electronic proposals and contract awards. Online contract awarding using auction-based systems has become popular because a company's suppliers can bid against each other in real-time. Although, Bakos and Brynjolfsson (1993) warn that it may be more profitable in the long run if companies work closely with a small number of trusted suppliers, rather than vying a large number of suppliers against each other in competitive contract bids. Companies should find a balance point between coordination costs and the improved supplier fit. Companies should offer their suppliers some benefits to get them to invest in their relationship.

Buyers and sellers can access and contact each other directly, potentially eliminating some of the marketing costs and "middlemen." These relationships improve distribution and transaction processes, which in turn reduce overhead costs through uniformity, automation, and large-scale integration of management processes (Hoffman et al., 1996). Many believe that the role of the middleman is endangered, but according to Sarkar, Butler, and Steinfeld (1996), they will just alter their business models. They note four possible outcomes for affected intermediaries: 1) reinforcement of direct producer-to-consumer links without networks 2) producer-to-consumer links with networks 3) reinforcement of the intermediary structure 4) formation of new network-based intermediaries, such as directories, malls, search engines, and virtual resellers. Some industries are now facing major changes because of the power of direct marketing.

The music and publishing industries are two industries that are directly affected by the "middlemen dilemma." The sound format MPEG Layer-3 (MP3) is causing an outrage in the music industry because it grants recording artists the opportunity to distribute their works without contracts with a major recording company. This technology makes it possible for anyone to publish music recordings on the Internet. The music industry also stands to lose revenue because the format enables the exchange and distribution of recordings without participation and compensation to the music industry publishing value-chain. Attempts to restrict a recording format to specific hardware devices will likely fail because of the openness of the MP3 format.

The book publishing industry suffers from the same problems, but they are looking at other alternatives that will raise the switching costs of its users. Book publishers are researching electrical devices for electronic books (e-books). The purpose of the devices is to hinder the exchange and distribution of copyrighted works without compensating the appropriate parties. Xerox will begin producing electronic paper that can be reused as a daily newspaper. The owner downloads the information from Internet sites, and can carry and read the information like a traditional newspaper. The owner is no longer bound to a computer monitor to read the information. These industries are facing problems that severely affect the length of their value chains. By using specialized devices, the industries hope to retain intermediary participation in their industries.

The Market Barriers of EC

EC market barriers are obstacles that hinder consumers and businesses from participating in EC. When the barriers are overcome, we can expect an EC growth rate of exponential proportions.

An important issue is that critical mass among consumers and business partners has not yet been reached. A number of consumers have irrational fears of lack of security and privacy using electronic means. Stories of "hacker break-ins" are frightening to both consumers and organizations. Most consumers and organizations, including banks, would like to see more examples of success before they commit themselves. The access to funding problem is directly linked to these fears. Many banks are hesitant about loaning money to innovative businesses because of the risks. Investments and ongoing costs are important roadblocks for the use of new technologies.

Cultures and mentalities also play a role in the adoption of EC. Some countries actively restrict or prohibit Internet access to their citizens. European businesses are usually slower in adopting new technologies than their U.S. counterparts. Most Europeans are less technology-friendly and usually require a high percentage guarantee for success. Their fear of failure often prevents flexibility and entrepreneurship. The American approach often has a "Let's do it" attitude. Their readiness to take some risks makes the market advance much faster (Booz-Allen & Hamilton, 1997).

A primary barrier to consumer acceptance of EC is ease of access. Ease of access includes high-speed access, ease of finding a service provider, and the complexity of a PC hardware/software setup. Other barriers include ease of use, price, and risk, which also describes consumer fraud, privacy and security issues. Confidence in Internet transaction security has had a major impact on consumer willingness to buy and sell products. The National Technology Readiness Survey, conducted by Rockbridge Associates, found that 58 percent of the surveyed consumers do not consider any online financial transaction to be safe, and that 87 percent of the consumers want EC transactions confirmed in writing (Beale, 1999).

Currently, the majority of consumers still use the Web to browse rather than purchase. Booz-Allen & Hamilton (1997) found lack of awareness and too little provision of support and training clearly as the main barrier to EC. Many people and companies are not aware of the developments and the role they could play in this new marketplace. The information provided is often too technology-oriented and does not address their business priorities. This information confuses more than it educates and complicates any decision-making.

A barrier to firm adoption is the Web measurement problem. Firms are unsure of the number of people using the Web, and what they do while they are on the Web. This uncertainty makes investment decisions difficult. In addition, there are few established criteria for judging the success of Web sites. Standards are critical to demonstrate the viability of the Web as a commercial medium, and to provide mechanisms for measuring investment opportunities and business success (Hoffman et al., 1996). Telecommunications access and usage costs are still high, especially in most European countries, and is seen as a major obstacle for increasing EC penetration. Aside from the telecommunication costs come the costs of meeting the requirements of business partners. These partnerships, often using a "hub-and-spoke" bond, may involve proprietary protocols that are specific to a particular partner, rather than shared across many partners (Clarke, 1998). Although it has received less media coverage than security, network reliability and message validation is a major concern for companies conducting online operations. This barrier is especially relevant to those companies working in real-time modes (Buchanan, 1995).

The market barriers described affect all participants in an interconnecting circle. If businesses cannot find feasible methods to offer goods and services in agile competition, then the grounds for consumer involvement are reduced. If consumers recognize the opportunities and their demand reaches a breaking point, then business opportunists will take charge and pave the way for the followers. Often, the governments must take action to increase or impede EC growth because of its social effects on the economy. For this reason, it is important to look at the legal aspects of EC.

The Legal Barriers of EC

The legal barriers confronting prospective firms are, in fact, those areas where there is a lack of regulation. Confusion on the part of the regulators as well as the participants hampers clear decisions toward the implementation of online transactions. There are five basic areas of discussion: governmental intervention, legality, security, jurisdiction, and taxation.

Government Intervention

One of the monumental aspects of the Internet is that there is no omnipotent power regulating over its environment. In fact, the Internet community has successfully managed its expansion and operation, and has developed policies and mechanisms to govern its use without government intervention. But, at some point there must be some intervention on the part of governments to control their economic and political interests, and to protect consumers where the Internet community has failed to prevail. By leaving the Internet in the free market, the private sector can stimulate economic growth, allowing the market forces to determine supply and demand.

Larry Irving, the U.S. Assistant Secretary of Commerce for Communications and Information, developed a framework for the U.S. government's role in the development of EC. The Federal government should be engaged in; 1) promoting a market-driven environment 2) creating a predictable legal environment governing EC transactions, and 3) building business and consumer awareness about externalities that undermine healthy markets (1998). Irving supports a minimalist approach in the government's role to ensure competition, prevent fraud, foster transparency, and facilitate dispute resolution.

In some cases, international, intergovernmental action will be needed to facilitate EC and protect consumers. But, as many countries have learned, Internet restrictions are also a tool of political leverage. Some countries are limiting Internet telephony to protect their government-owned telephone companies. Others are trying to limit the influences from other cultures. In light of the conflicts in the former Yugoslavian areas, the U.S. government recently debated whether its trade embargo extends to Internet access for some of the citizens in the former Yugoslavian areas. The National Security Council said information services are generally considered exempt from trade embargoes, but that electronic commerce is affected (Associated Press, 1999).

EC Legality

Traditional transactions are processed under the premises that both parties will hold up their ends of the bargain. In cases of conflict, there are contracts to deal with the resolution. For this reason, the acceptance of digital signatures and the lack of authentication standards cause problems for many businesses. The binding acceptance of electronic contracts and other documentation is a major step in the progress of EC. It is often difficult to prove if the recipient actually received the document; and, if signed, is the signature authentic? Will these concepts hold up in a court of law? The U.S. Senate Commerce Committee unanimously passed a bill recently that would make electronic signatures as legally valid as handwritten signatures. Several states have already passed laws that validate electronic signatures, but this bill would make all electronic contracts and sales agreements made within the United States binding if they are sealed with an electronic signature. The bill, which doesn't endorse a specific technology, follows legislation passed last year by Congress requiring the federal government to use digital signatures for electronic transactions (Hillebrand, 1999).

Security Laws

Security laws affect business operations because of encryption and privacy issues. Many businesses are hesitant about offering online transactions because of the legal ramifications that could occur given a breach of security. Currently, strong encryption programs are only available in the U.S. because of export restrictions. Who takes the blame for a security breach when the users have taken all precautions stated by the system vendor? If private information is compromised, can the victims demand compensation? Most businesses offering payment by credit card do so at the risk of the customer. The fear of electronic eavesdropping often results in protective measures that become very expensive to the organization. These protective measures often need additional hardware resources and processing capability. To appease and prevent disgruntled users, it is an acceptable practice to notify them of their inconveniences.

The storage and disclosure of personal information carries implications. Many people refuse to participate in EC because they are not informed about how their information might be used. They lack confidence that the information will be used as described. If there is a privacy violation, who will respond? Media coverage of the use of the electronic channels to distribute child pornography has led to discussions about content regulation. The Federal Trade Commission (FTC) recommended legislation for parental consent before a child is allowed to give personal information. The legislative model is based on: 1) giving consumers notice of what is collected and how the information is used, 2) giving consumers a choice of secondary uses, 3) giving consumers reasonable access to allow corrections, and 4) ensuring security (Kalin, 1998). Kalin (1998) also notes that the European Union (EU) demands that its members pass laws that prohibit other countries from storing data on EU citizens without adequate security measures.

EC Jurisdiction

Where litigation is involved, one must address who has jurisdiction in cross-border transactions. Who is liable? At the moment there are many views. Here are three examples that illustrate the confusion on this topic. The *Wall Street Journal* reported that the European Commission supported a notion that the "country of origin" regulates providers of goods and services. Opponents of the proposal feared that such a rule would encourage companies to base their operations in the country with the least rigorous consumer protections (Edupage, 1998). In a recent change of direction, the latest proposal by the European Commission favors the laws in the country where the transaction originated, not where the company is based. The proposal still must pass the vote by the EU governments (Beale, 1999). To complicate the issues more, a three-judge appellate panel from the California Court of Appeal for the Second District ruled that the state of California has no jurisdiction over a Web site whose hosting servers are located in the state. The lawsuit claimed that contracts with California-based Web hosts provided the state with jurisdiction in the case. The judges disagreed. "Defendants' conduct of contracting, via computer, with Internet service providers, which may be California corporations or which may maintain offices or databases in California, is insufficient to constitute 'purposeful availment,'" wrote justice Mildred Lillie (Goodin, 1999).

EC Taxation

The Internet taxation process affects companies operating on national and international levels. Currently, there is no standard taxation process. Each country, state, and province has its own set of regulations that support and protect their economic interests. Basically, traditional retailers say a tax-free Internet encourages people to shop in cyberspace. On the same token, local and state governments stand to lose tax revenue as more shoppers buy their goods online to avoid paying sales taxes. Strangely enough, this is an expansion of a loophole that catalog shoppers and businesses have enjoyed for years (Gillmor, 1999). On the other hand, many believe that imposing an Internet tax will restrict the momentum of EC development. Many feel that if the U.S. imposes a tax and other countries do not, Americans will turn to overseas merchants, which will cost U.S. jobs and revenue. Currently, the Internet Tax Freedom Act makes the Internet a tax-free zone for most transactions over the next three years. This act, as reported by the *New York Times*, is based on the principal that information should not be taxed (Edupage, 1998). The same congressionally appointed committee has reconvened to address the subject before the end of the moratorium.

An important study by Ernst & Young will play a major role in the decision to tax Internet transactions. The report, summarized by the *Financial Times*, found that taxes not collected in 1998 amounted to $170 million, only 0.1 percent of total state and local government sales and indirect tax revenues. The impact is low mainly because 80 percent of EC transactions are business-to-business, which would not have been taxed anyway. Furthermore, 63 percent of online household sales involved items that could not be taxed, such as financial and travel services, as well as groceries. Among products that could be taxed, 60 percent substituted orders from mail order or telemarketing companies that do not generate taxes either (Edupage, 1999). Organizations planning to conduct online transactions across national borders should be aware of the taxation process because of the diversity of the laws.

As a summary, Howe (1997) describes a current situation that is directly affected by most of these barriers. The U.S. health care industry is desperately calling for uniform standards for health care information. These standards are prerequisites to enable a nation-wide transition from paper to electronic transactions. But, who will pay for the communications and database costs? Who is liable for the veracity of the patient health records during their network transits? Can the industry save money by purchasing goods online? Howe also believes that most solutions will occur through improved policies rather than technological advances (Howe, 1997).

In most cases, businesses have existing operations using conventional methods. By stepping into the world of EC, these existing operations do not just disappear. Both worlds have to be integrated before an organization can receive the full benefits of EC. This integration will require hardware and software changes, and business process reengineering. External to the organization, achieving critical mass is important for continuing EC growth. Gaining participants' confidence is achievable through awareness programs, a strong legal framework, security standards and policies, and reductions in the market barriers of EC. With these points in place more consumers and organizations will take the next step and join in on the EC crusade. Now let us look at the internal pressures and options open to new EC entrants.

The Electronic Commerce Business Environment

Once an organization has decided on an Internet presence or to participate in online transactions, there are still many topics to consider. Strategies must be set to support the chosen business model. Appropriate site designs with appropriate controls are needed to interface with the target audience. And, appropriate payment methods and security controls are needed to ensure secure transactions between participants. Although there are many EC business models, when goods are offered over the Internet there are basic steps that are generic to all models. The EC purchase process, whether it serves a business-to-consumer or business-to-business environment, follows this basic schematic: benefits/experience, navigation/selection, authorization, authentication, transaction processing, and confirmation. This section will step through this process and describe the process environments.

The Strategies and Business Models

The organization's business plan plays a major role in the EC implementation decision. Any IT implementation must, to be effective, support the organizational strategies and goals, management decision-making, and the organization's operations (O'Brien, 1996, p. 15). The EC implementation should add value to the company and its customers. The company will hopefully view the investments as strategic moves, and not just as operational costs. Those organizations that already maintain a pure information site and wish to convert to a customer-driven transaction site require an EC agenda with strategic focuses on security and external relationships (Berry, 1998).

The organization's EC strategy will decide what type of business model is appropriate for the company. Hoffman et al. (1996) produced a framework for organizing commercial activity on the WWW. They identify two major categories of sites: "Destination Sites," and "Web Traffic Control Sites." Destination Sites include Online Storefronts, Internet Presence Sites, and Content Sites. They describe the commercial site designs, and comprise the "ultimate destinations" housing a firm's virtual counterpart. Web Traffic Control Sites, on the other hand, direct consumers to these various Destination Sites. This group includes Malls, Incentive Sites, and Search Agents. Each of these six categories can be considered an element in an integrated marketing program. They provide the building blocks for a successful site, coupled with an integrated strategy that should involve many of these types put to different uses. The six components from Hoffman et al. are described below.

1) Online Storefront

Online storefronts offer direct sales through an electronic channel via an electronic catalog or other innovative format. Opportunities for this model include direct marketing, customization, relationship marketing, and the creation of "Web-only" products and services. Other procurement models include the "interactive bidding model," which places competitors against one another in real time; and the "auction," in which buyers compete for the right to buy from a merchant (Jahnke, 1998).

2) Internet Presence Sites--Flat Ads, Image, and Information

Internet presence sites provide a virtual "presence" for a firm and its offerings. They attempt to build relationships with consumers and potential partners even before the need to purchase the product or service arises. Three types of Internet Presence sites are identified: flat ad, image, and information. Flat Ads are single page electronic flyers with no hypermedia links. Image sites provide information about the product in the context in which the product is consumed, or has meaning to the consumer. Such sites appear to be suited to products that have low hard-information content. Information sites provide detailed information about the firm and its offerings. These sites are best suited to offerings with a high degree of hard-information content.

3) Content--Fee-Based, Sponsored, and Searchable Database

Content sites offer information to the visitors and are differentiated by their means of support. In Fee-Based content sites, the provider supplies and/or pays for content, which the consumer pays to access. Sponsored content sites sell advertising space to reduce or eliminate the necessity of charging fees to visitors. Advertising underwrites the editorial content. In a Searchable Database site, merchants or advertisers pay a provider for information placement in an organized listing. This is the inverse of the Fee-Based content model.

4) Mall

The Mall site typically constitutes a collection of online storefronts. The provider charges rent in exchange for the virtual real estate and advertising space, and may offer a variety of services to the storefront.

5) Incentive Site
The Incentive Site represents a unique form of advertising that attracts a potential customer to a site. The objective is to pull the user to the site, thus generating site traffic.

6) Search Agents
The purpose of Search Agent sites is to identify other Web sites through keyword searches of a database that extends throughout the Web. A recent trend in such sites is the emergence of fee-based or advertiser-sponsored search agents (Hoffman et al., 1996).

Applegate et al. (1996), state that EC is shifting away from vertical integration and moving toward alliances and partnerships. These alliances grant companies the ability to compete by allowing them new ways to cooperate (p. 184). This trend is visible in the formation of virtual corporations. Virtual corporations contract out the majority of their activities; thus, trimming costs and creating sales opportunities by connecting every corner of their corporation with partners and customers (Joachim, 1998). O'Brien (1996) lists six business strategies of virtual companies.

- Share infrastructure and risk
- Link complementary core competencies
- Reduce concept-to-cash time through sharing
- Increase facilities and market coverage
- Gain access to new markets and share market or customer loyalty
- Migrate from selling products to selling solutions (p. 426)

Joachim (1998) also describes two models that do not fit in with the Hoffman et al. (1996) framework. The "Collaborative Extranet" connects department peers for real-time collaboration, which reduces cycle times and allows greater creativity. United Parcel Service (UPS) launched a project to make some of its EC services less visible to the public. UPS integrated its package-tracking capabilities directly with corporate customer's sites. Customers can now track their packages from the sites where they placed their orders. This service helps retailers offer more services to consumers. It also generates more customer interaction, which may produce more repeat sales; thus, generating more shipping business for UPS (Machlis, 1997). The second model is the "Web Value Chain." This model uses supply chain management systems and customer facing systems that are fused together to allow real-time data exchanges of manufacturing, sales, and inventory information. This model supports the supplier's trend of building to sell-not stockpiling. This model also allows data from the demand side, the customers, to be shared among participating partners. Through this process, companies benefit from more accurate forecasts, quicker product reengineering, and higher customer satisfaction due to relaying product shortage information to the customer, which avoids customer disappointment and lost sales (Frook, 1998).

The last model, "E-Lancer," is a look toward future business. Malone and Laubacher (1998) believe that in the future, the individual will become the fundamental unit of the economy-not the corporation. The dominant business organization of the future may not be a permanent company, but rather an elastic network. The group may consist of electronic freelancers that temporarily join forces to form a network to produce and sell goods and services. When the job is finished, the group disbands. As evidence for the model's existence, the authors point to the Internet culture, the Linux community, and the film industry (p. 145-152).

The business models and strategies will ultimately determine how the company will present its products and services, with whom it will cooperate, and from whom it will generate its revenues. More than 90 percent of Fortune 500 companies have an Internet presence today, yet only five percent actually are generating online profits from EC (Callahan & Pasternak, 1999). Businesses must carefully assess the objectives they wish to meet through EC. Not to forget, some of the profits are in the form of intangible benefits that are difficult to quantify. How the business connections are integrated into the EC transaction process is determined by the interfaces.

The Interface and Web Design Factors

The marketing strategies, along with the business model are the main criteria in determining how the site design will generate initial visits, repeat visits, and long-term relationships with the customers. Initial visits are mainly a function of marketing. However, sites will only be successful in the long run if they generate repeat traffic. The repeat traffic problem is partly a function of Web site design and depends largely on customer need (Hoffman et al., 1996).

Although the purpose of this paper is not to become a "Web Site Design Manual," there are some points that should be made about maintaining and generating traffic. The Web site becomes the interface between the company and their customers and business partners. With an online business interface, the input data may be entered directly by the customer. These interactive relationships require that the interface use an adequate level of user-friendliness. Any interaction between the information system and customer must be robust. First, for reasons of data integrity, and second, because it is the main interface with the customer, which leaves a lasting impression and may determine if the customer will return.

For success, marketing departments must design their advertising models to take advantage of the interactive, consumer controlled characteristics of the medium. The traditional customer loyalty ladder (suspect, prospect, customer, client, partner, and advocate) is still applicable, but now operates in a different fashion. The first three stages are often instantaneous in EC but the transition from customer to advocate relies on loyalty earned through trust. The instantaneous nature of the Internet makes this transition much more difficult (Meirs & Hutton, 1998).

Before companies can offer goods and services on the Internet, they must register a domain name. Companies are finding that the "right" domain name is as important as the location of their real estate. In essence, their domain address is where the customers must travel to visit the site. The domain names must be easy to find and easy to remember. The Internet community has coined the term "cyber squatting" to refer to the act of registering domain names that are of interest to corporations willing to pay high prices for the domain name. Such initiatives have not always been successful, as some cases fall under trademark infringement.

Traffic generation is just the beginning of a customer relationship. The ultimate goal is to turn visitors into paying customers. Customers that just "surf" the site are just skimming the surface. The site requires a compelling consumer benefit to get the customer's interest (Kirsner, 1998). This benefit can be price, convenience, service, or something that they cannot receive elsewhere. Companies must ensure privacy and should post their privacy disclosure policies for the customer's viewing. The design should be logical, user-friendly, and absent of broken links and long download times. Frustrated customers will bail out early if image downloads take too long (Hodges, 1997). What companies must remember, is that in an online environment, the competition is only a "mouse click" away. Customer service and quick responses should be a priority in customer relationship management. Typical online customer service tools include knowledge base access (e.g. FAQ), e-mail management applications, personalized content, and live connections (Kalin, 1998).

Once a relationship is created, it must be maintained to generate repeat visits. A number of authors have reported methods currently in use in the online community. Generating repeat traffic involves some form of interaction between the customer and the site that brings the customer back for a return visit. Hodges (1997) notes the most common methods as marketing offers by e-mail, mailing lists, newsletters, product visualizations, and chat opportunities. Cockburn and Wilson (1995) add competitions, offering cost-free products, and combining entertainment with the purchase process.

Basically, the interfaces should reflect the type of relationship between the participants. The interfaces are communication ports that directly support the company's business model and strategy.

The Site Maintenance Factors

Site maintenance is the practice of updating, maintaining, and controlling the site and its contents. Businesses should not believe that once their site is functioning, that it tends to itself. Somebody must be in charge of site maintenance. Most companies either hire the services of a professional site design firm, or hire a dedicated

"Webmaster." Depending on the type of site, there will be procedures and costs that deal directly with updating the content, measuring the site's efficiency and effectiveness, and tracking visitor activities.

Maintaining a Web site is not inexpensive. Most companies find that a professional site will have a six-digit cost affixed to it. Costs for the site include development, staff, training, administration, and service costs. Outsourcing Web site functions has gained popularity because of the costs relative to the responsibilities of staffing and training. In a comparison between brick-and-mortar and online operation costs, the *New York Times* reported the findings of an outdoor retailer Recreational Equipment (REI). REI found that although maintaining an Internet site requires a smaller staff, salaries must be higher in order to attract talented employees with technological knowledge; thus, the payrolls for the company's 300-person Seattle store and its 60-person Internet site are about equal. Furthermore, the incessant requirement of upgrades has forced REI to spend about $15 million on technology since 1996 (Edupage, 1999).

Content updating depends on the site type. Pure information sites may only require updates on an exception basis. Other types, for instance real-time inventory databases or news sites, require constant content updating. Many sites will allow customers to register to gain authorization to access information and to purchase from the site. This customer information must be carefully managed because it represents the bond of the relationship. Also, customers will expect all information on the site to be current. A site that emits this feeling will relay a message to the customer that the organization is interested in their presence (Kirsner, 1998). This step may be as simple as providing a "What's New" page. Companies should be aware of the cost/benefit tradeoff for content updates and create their maintenance schedules accordingly.

Site measurement is the process of evaluating network efficiency, measuring site traffic, and monitoring visitor navigational habits. Since many online business models have connections between their revenue and the number of page hits received, site measurement is a requirement. Companies have two service options. Depending on their site location, they can either employ the services of a subscription service, or use self-hosted monitoring tools.

The primary means of measuring site traffic is through server logs. Businesses should be aware that they have limitations and are difficult to decipher. Common server logs using the common log format (CLF) deliver the visitor's host address, time stamp, requested page address, file size, and the return request code. There are also extended log formats (ELF) that vary in functionality. These formats can return the browser type and the address from which the request came (Net.Genesis, 1996).

Server logs are susceptible to data distortion. Net.Genesis (1996) describes the different types of distortion that may occur in server logs. Dynamic IP addressing changes on a login-to-login basis. Customers with this type of connection cannot be tracked because their addresses change with each access. Tracking users at large institutions is difficult because they may have many users with different interests on one machine. Proxy servers skew the data because hundreds of users may have accessed the proxy, but only the proxy access will appear on the server log. Cache requests also leave no server log entries.

Attempting to track user movements is difficult. With each page request, a connection is made between the server and the browser. This connection is terminated after each image and page request. Each image download causes a new connection. During high traffic periods, these log entries may not even be sequential, and there is no information stored to tie these log entries together. Most analysts use some form of heuristics to help decipher the server logs (Net.Genesis, 1996).

The main problem with server logs is that the measurement information is technology-oriented and not oriented towards the business transactions. Businesses must connect page hits with sales to prove revenue growth and cost savings. AutoVantage, for example, uses a ratio based on the number of price requests to the number of visitors. They do not want to increase the number of visitors without increasing the number of price requests. If the ratio is too low, the marketing mix is modified (Kirsner, 1998).

Another method to track user traffic is through "cookies." Cookie technology was developed by Netscape as a method to store request and domain information. They enable sites to store information about the navigational habits and preferences of its visitors. When a page is requested within a cookie's domain, the cookie is sent back to the server along with the request. One drawback is that not all Web servers offered on the market support cookie technology.

Awareness of site traffic is needed to measure the success of the site. By analyzing site usage, one can pinpoint trouble spots and hone development, and decide if the investment was overall worthwhile.

The Transaction Environment

Online transactions rely on secure messaging systems. Zwass (1998) describes the attributes for secure messaging. A secure messaging system must provide confidentiality, which is achieved through encryption. It must provide message integrity, which is controlled through hash tables and parity. Authentication of both parties is achieved through an authentication system (e.g. digital signatures or private key). Non-repudiation is achieved through contractual acceptance by both parties. Together, these attributes produce the basis for a successful EC transaction system. These attributes are represented within the protocols, payment systems, and the security procedures.

EC Transaction Protocols

Secure transmissions demand a set of protocols. EDI is the oldest and most common transaction standard used today between businesses. It allows a reduction in paper and postage costs, faster transactions, reduction in errors, and allows increases in productivity. It also enables just-in-time inventory systems (O'Brien, p. 336). The disadvantages of EDI systems lie in costs, complexity, and inflexibility. Many believe that Internet commerce will force the disappearance of EDI, even though EDI transactions valued 14 times more than Internet business-to-business commerce transactions (Reinhardt, 1998). EDI documents must conform to rigid formats and demand special software applications. Adding trading partners to EDI networks is expensive to because every link requires complex software translators to convert data between participants. The Internet, on the other hand, is much more flexible in it usability of document formats, and companies can use standard Web browsers. Still, many believe that EDI will remain in use for years to come. Many EDI users are not ready to give up their investments because they need time to unwind their commitments to proprietary standards (Clarke, 1997). Others have the perception that VANs are more reliable than the Internet (Reinhardt, 1998). However, in the end we will see an increase in Web-based interfaces. Many companies have already converted their EDI transactions to an Internet-type network, allowing them to keep their systems in place, and allowing their smaller business partners to use Web browsers instead of an expensive EDI setup.

On the Internet, Secure Sockets Layer (SSL) is the most commonly used protocol. This is the protocol used by most Web browsers. Secure HTTP (S-HTTP) is similar to SSL, and is supported by software companies like Open Market on a larger level. Secure Electronic Transactions (SET) is a protocol used by VISA and MasterCard. SET for credit card transactions. It automates many of the back-end processes (presentation and clearing) that SSL alone does not provide. SET also uses digital certificates for security. There are other standards currently emerging. Open Buying on the Internet Consortium (OBI) defines a method for business-to-business purchasing using SET, and Information and Content and Exchange (ICE) defines a standard based on business rules and trusted relationships (Karpinski, 1998). Another proposed standard, called x9.59 (Account Authority Digital Signatures, or AADS), addresses the necessity of binding a certificate to an account number. The fundamental concept of AADS is that it limits the scope of a digital signature to a specific account, so that the certificate authority's liability is limited as well. If a card is reported stolen, both the card and account can be blocked at the same time (Denny, 1998).

All of the above standards utilize some form of public key encryption in the exchange of messages. This system requires two keys: a public and private key. To send an encrypted message, one uses the recipient's public key. The private key is then used to decrypt the message. Naturally, private keys should be kept safe. Stamper (1999, p. 387) provides a description of the encryption process. If many keys are used, encryption key management is not an easy task. Public Key Infrastructure (PKI) is a management system designed to provide public-key encryption and digital signature support for applications and services. By managing keys and certificates through a PKI, an organization can establish and maintain a secure networking environment (Gibbs, 1999). Examples of PKI products include VeriSign and CyberTrust.

One important date exchange enhancement in the Internet environment is the eXtensible Markup Language (XML). The most important contribution XML makes to the Internet is the ability to recognize the context of data on a Web page. Unlike HTML, which defines how a page looks, XML defines what the data on a page stands for. This technology enables smart searches involving comparisons, and allows automatic updates from multiple catalogs. At the moment, XML is the preferred standard for displaying database-driven data on a web page (Crosby, 1999).

Data exchange standards enable smooth transactions in business-to-business and business-to-consumer transactions. The standards should create an environment where information can be seamlessly exchanged between EC participants. One of the challenges is that one cannot control a partner's platform, data formats, or business processes. One can, however, influence their decisions. When preparing to make a substantial IT investment, should an organization's decision be partially based on compatibility towards their customers, or should they expect their suppliers to implement a system that is compatible to theirs? The solution to this question is a policy decision. Ideally, a universal protocol will emerge that will allow transactions between any payment method and any merchant (Hodges, 1997).

EC Payment Settlement Systems

Authentication is synonymous with trust, yet, also contradicting. Partners must trust each other to perform successful transactions; but they must also be suspicious of each other. Authentication involves a process where each party proves that they are who they say they are. This process is needed to verify the identity of the involved parties. Without authentication, non-repudiation of online transactions cannot be achieved.

There are a number of payment settlement systems available. Most sites today employ one or more of the following payment schemas: conventional ordering and payments, online ordering with conventional payments, credit card payments with a registered member identification number (credit card information is given over the telephone or through the postal service), or credit card payments with information sent through secure network connections using SSL or SET (Cockburn & Wilson, 1995). E-mail also plays a role in the transaction process. It is often used for ordering and transaction confirmations. Alternative systems may include electronic cash systems, electronic funds transfer, and smart card technology combined with digital signatures.

Digital signatures have become a popular authentication method since receiving backing from the Federal government. Digital signatures consist of credentials issued by a trusted third party, called a certification authority, that ties identification and account information to a public key stored on a hard-drive or smartcard (Berry, 1998). Digital certificates, as described by Hapgood (1999) are relatively cheap, flexible, transparent to the end user (once the initial qualification and software download have been completed) and easy to manage. They can be easily issued or revoked to whole classes of users or applications, and they scale readily. One disadvantage of digital certificates, since they are typically client-based, is that they actually authenticate a computer or device and not the user (Hapgood, 1999). In theory, anybody could be using that machine or certified device. This problem can be addressed by requiring password requests in the transaction process, but this is still not completely failsafe.

Electronic wallet technology was a popular topic a couple years ago. These technologies, although still available, failed to get widespread support because they demanded the need for special software or reprogramming of a Web site. However, the *Wall Street Journal* recently reported that Microsoft, Sun Microsystems, AOL, and IBM, as well as Visa and MasterCard, have agreed on an electronic-commerce modeling language (ECML) standard for electronic wallets. ECML will simplify online transactions for consumers by eliminating the need for retailers to require consumers to re-enter personal information for each purchase. Instead, personal information will be stored on the consumer's Web browser or on an Internet server (Edupage, 1999).

No matter what standards are used, authentication processes must be present to stimulate trustworthy relationships between business partners. Gartner Group predicts merchants will demand protection. A commerce model will emerge that offers buyers discounts and promotions in exchange for their using a digital signature or other secure means of verification (Berry, 1998).

One of the most interesting areas of EC includes the formation of electronic money. The U.S. money supply exceeds four trillion dollars, but only 400 billion dollars actually exist in hard currency (Zwass, 1998). Since the majority of the world's money supply exists electronically, it would seem to be a fairly simple task to produce an electronic currency, but there are many barriers. First, electronic transactions are very costly because they involve many parties and different documents which must be checked, transmitted, reentered into various systems, processed, and filed. Secondly, cross-border transactions can amount to 10% of the transaction value because of international laws and conversion rates. Third, because of these high costs, such transactions are not feasible for small transaction values (Crede, 1996). Some believe that micro-payments are needed to stimulate the Internet community because consumers refuse to pay $50 for a subscription, but will pay 10 cents for an article (Hodges, 1997). The ultimate electronic currency would be one without a country, would have its own denomination, is infinitely exchangeable at defined rates with other traditional currencies, and is cost effective with small payments (Crede, 1996).

EC Security

Since security is a major barrier to EC acceptance, businesses must earn the confidence of its customers. The goals of security are to provide secrecy, integrity, and availability, which means that the data may only be accessed and modified by authorized persons (Pfleeger, 1989, p. 4). Security plans should be included in the business strategy and should focus on data integrity, network integrity, and authorized access. Access controls, firewall systems, and encryption tools should be implemented to minimize security threats that may come from outside and from within the company's boundaries.

Threats to data integrity, privacy, fraud, theft, and sabotage can occur at many levels. As in any system, the system's security is only as strong as its weakest component. Ghosh (1997) states that securing EC environments must occur on four fronts: 1) securing the Web clients, 2) securing the data transaction, 3) securing the Web server, and 4) securing the network server operating system. To date, only the data transaction protocols have gained recognition and development of secure properties. Failure to secure any one of these four components may result in the entire system being insecure.

Many times the threats come from within. To address this thought, many companies, in addition to the security controls focused on external threats, employ electronic monitoring devices to monitor the activities of its employees. Similar to audit mechanisms, office automation devices and software enable methods of safeguarding the computer systems and tracking employee productivity. Many employees believe that they can discourage losses by monitoring. The most common methods and devices implemented are video cameras, telephone surveillance, keystroke and file access monitoring.

It is in the organization's best interests to take security seriously. Security breaches may not only be costly in the financial sense, they may also affect the company's reputation. While firewalls, encryption, digital signatures, passwords, and biometrics may protect data and privacy, their success depends on the adherence and coordination of security policies and procedures.

The EC business environment, for the most part, is still in its infant state. There will be many changes occurring that will enhance the EC experience, but the fundamental concepts will remain. The business environment must fully support the EC transaction process. The business model creates the framework. The strategies define the interface and relationships. The design creates the atmosphere for nurturing the relationships. Site maintenance provides the feedback and controls. And, the transaction environment provides the means for the business to conduct secure operations within the EC environment.

The Electronic Commerce Enterprise Environment

The EC enterprise environment describes an industrial environment. It describes an environment containing an industrial supply chain. It includes the factors that affect an enterprise and its ability to compete. It involves all participants in the industry, from the competition to intermediaries. One must note, an enterprise is not stand-alone. An enterprise is affected by many external factors emitted from many industries, and it is affected by many factors from within its corporate boundaries. Since many corporations are involved simultaneously in a single EC enterprise environment, the internal factors stretch beyond a corporation's borders and affect their partners as well.

The EC enterprise environment is an intermediate level that integrates the attributes of the EC macro and micro- environments. It acts as a "common ground" for negotiations between the two environments. These two environments are melded together through networks, relationships, and tools. This section examines how these subjects work together to provide environments for agile competition.

The Network Environments

Networks have become the backbone of businesses. As it is now a rarity to see businesses without computers, it is becoming hard to imagine a business without a computer network. With the introduction of the Internet in commercial activities, networks have taken bounds because of the global environment that the Internet provides. As an effect of the Internet phenomenon, gateways to external networks have become somewhat of a business requirement. The benefits of networks are obvious: high-speed data transfers, additional internal and external communication capabilities, and internal and external resource sharing to name a few. Much of the credit for today's contemporary business relationships has to be given to the advent of networks.

Computer networks are used to support the business operations and must be designed to support the internal and external business relationships. The requirements for a successful network system include performance, consistency, flexibility, availability, reliability, recovery, and security (Stamper, 1999, p. 13). These attributes must be monitored and managed to ensure that the network achieves the prerequisite requirements of the business. As companies defined information as a corporate resource, their networks also achieved this status because the network is a tool that helps ensure the integrity and distribution of its corporate data.

Companies have migrated the majority of their centralized mainframes to client/server architectures. With these types of configurations, their information is no longer stored in a centralized location. The networks have to ensure multiple user access capabilities from multiple locations, and an efficient workload distribution across the network. The network landscape may include any number of file, application, database, and other types of servers. Important to ensure a smooth integration of the network is the transparency to users. Much of the network presence and activities should be transparent to users as to not interfere with their daily operations. They should not be aware of the details involved in their transactions over the network, or that they may be accessing files located on other computer systems, possibly on different system platforms as well.

Most businesses use one or more wide area networks (WAN) to connect numerous local area networks (LAN) in the organization. WANs often involve third party organizations, such as common carriers to provide data transmission lines. It is also common for LANs and WANs to be connected to a larger enterprise network. LANs are most often used in the departmentalization of the network. This departmentalization is often necessary because of port limitations, and it makes the network much more manageable.

As a company's network expands, the network becomes much more difficult to manage. Topics such as user support, performance, and cost-effectiveness must be constantly maintained, monitored, updated, and planned. With the exception of small peer-to-peer LANs, network management should not be shared. Most client/server architectures will expose businesses to distributed environments. Network management becomes even more complex when businesses start dealing with distributed data and replication. For this reason, Carayannis (1997) foresees extensive growth over the next few years for larger, professional services companies that build centralized network management systems. These companies will allow network administrators to monitor highly heterogeneous and geographically dispersed networks from centralized locations.

Firewalls are used extensively to erect access barriers to and from corporate networks. Firewalls consist of computers and/or software that sit between the Internet and the protected business network. It controls and monitors the traffic through the passageway, effectively filtering unprivileged access attempts in both directions. Stamper (1999) describes four firewall implementation possibilities. The first possibility uses a screening router, which filters out packets from unauthorized source addresses. The second approach, a screened-host gateway, uses a computer as a gateway to the private network. The gateway system is the only node recognized as an Internet node. The third, a screened subnet, allows the availability of the subnet to the Internet, and demands that the protected system communicate with the Internet only through the protected subnet. The last approach is an application-level gateway. It allows certain defined messages to pass through, such as e-mail and business transactions (p. 393). Erecting firewalls can prevent attacks against internal systems; however, they can only provide trivial security assurance against data-driven attacks through the Web. Client-side software and active content applications, such as Java applets, ActiveX controls, JavaScripts, browser plug-ins, and e-mail attachments all pose security and privacy hazards for EC end-users (Ghosh, 1997).

Many companies use the services of value-added networks (VAN). VANs are usually associated with a higher level of security because they provide private connections. VANs, usually X.25 or frame relay networks, are extremely popular with EDI systems. Their main drawbacks are that they have high sign-up costs and bill based on amounts of data transmitted.

The most intriguing development in corporate networks lies in the use of intranets and extranets. Intranets are private networks built on the underlying network structure using Internet technology for the purpose of allowing common data representation mechanisms. Most commonly, intranets allow businesses to share company-wide information accessible with standard Web browsers. According to Carayannis (1997), intranet commerce has already surpassed Internet commerce in terms of revenue.

Virtual private networks (VPN) and extranets have become popular as a middle-step between the Internet and VANs. Extranets combine Internet and intranet use in a logical network where the boundaries are described by its access privileges. The Economist Intelligence Unit expects significant growth in the use of extranets over the next three years (Calahan & Pasternak, 1999). They use open software standards to curb networking costs and allow innovative applications across many platforms. Extranets enable tight control over the privacy of connections and ensure identification of the people that visit a site. Extranets create a "pipe" that encrypts data sent across the Internet and provides complete control of what resources are visible at the service end of the connection (Gibbs, 1999).

Extranet popularity has brought about a number of powerful new security management tools designed for extranet applications. In general, they allow managers to build a profile of security procedures from a pool of possibilities and then tie that profile to specific data resources, applications, user groups and network components over a wide range of scales. Since the members of a network can be both competitors and partners, they need to be able to draw secure perimeters around any group (Hapgood, 1999). Furthermore, Hapgood (1999) explains that the network establishes a single network-wide certification authority that any member can use to authenticate data requests from any other member. At the same time, any company can issue its own private certificates, allowing it to raise and lower security barriers against the other members.

Extranets are helping corporations integrate their EDI operations with supply chain management (SCM) tools through Internet access. Letting users access sophisticated SCM systems using Web interfaces requires minimal up-front investment, is inexpensive to maintain, and is far more trouble-free than complex client/server approaches (Dyck, 1997). Dyck (1997) also states that wrapping Web-based front ends around established EDI mechanisms provides immediate accessibility and a usability boost. Extranets help forge intimate business links among partners, allowing them to share business data, and even collaborate on product design and development in private online communities.

The networks of today are becoming more logical in nature. In the 1980's, networks were usually best described as physical, data communication connections for large data transfers. Today, we speak of corporate extensions and logical boundaries. Where does the network really stop? Businesses must learn to deal with their own networking environments, as well as those external to their boundaries. Without these links to the outside world, their ability to communicate and compete is weakened. Carayannis (1997) feels that the rise of extranets is a natural result of the quest to achieve greater inter-organizational coordination through information sharing. And, that extranets will evolve naturally into the "virtual corporation" model. The network environment is not only important because it provides a means for EC transactions, it also is a catalyst for building new types of business relationships.

The Business Relationships

Changes in the world economy are placing requirements of skills and resources that often exceed those of a single enterprise, requiring the formation of multiple alliances to ensure that the members of each alliance can attain the intellectual capabilities to deal with the complexities of their environment. Only through the careful application and sharing of knowledge can firms hope to outperform their counterparts and achieve sustained competitive advantage.

One of the catalysts for business relationships arises when companies decide to expand into the global marketplace. When the corporate network extends across borders, there are many additional factors that complicate the EC enterprise environment. International networks must consider political, legal, hardware-oriented, and language and cultural issues.

In a study published in December 1998, Euro-Marketing Associates reported that 42 percent of the total Internet user population is non-English speaking (Gibbs, 1999). Many companies form local partnerships to increase their local acceptance, increase their communication capabilities, and to attain accurate local intelligence on the new markets. Companies must assess if their products appeal to a global customer base, and if they can be marketed, sold, and shipped in a cost-effective manner. Parties local to the area of interest may have experience readily available to solve many of the issues at hand. By forming local relationships, companies can address the commercial and cultural differences. A common mistake made by companies entering global markets is to apply successful homeland trends and experiences to foreign marketplaces (Bennett, 1998). Many do not consider the extra overhead needed to meet trade and export laws. Just because a company is able to reach a potential customer does not mean they can sell or deliver the goods and services at a price and level of convenience acceptable to both parties.

Johnson, Marsh, and Tyndall (1999, p. 80) offer excellent advice for companies expanding their market boundaries. In their list "Principles for Supply Chain Excellence," they advise companies to "Think globally, build regionally, and operate locally." Thus, setting the stage for inter-organizational system relationships.

The Inter-organizational Systems (IOS)

To understand how companies can form and nurture successful relations in the competitive marketplace, one must study the underlying concepts behind the different organizational models. The organizational models provide frameworks for business-to-business relationships.

EC transactions depend on cooperation between two or more systems. Clarke (1999) presents a classification framework for the different types of inter-organizational relationships. He calls them "Supra-Organizational Systems." His classification in comprised of three major classes: inter-organizational systems (IOS), multi-organizational systems (MOS), and Extra-organizational systems (EOS).

The first class, IOS (1-to-1) relationships, involves two organizations in which a degree of trust and commitment exists. These relationships are usually in the form of a partnerships or alliances. The second class, MOS relationships, occur between two or more organizations through different types of system connections. Cascading (1-to-1-to-1) systems integrate a succession of inter-organizational systems along an industry value chain. Hub-and-spoke (1-to-n) systems involve a central system that exercises its market power over its associated partners. Networking (m-to-n) systems involve multiple organizations that interact collaboratively with multiple other organizations. The third class, EOS relationships, cross organizational boundaries, but also include key participants who are not organizations, such as consumers and unincorporated enterprises (1999). The type of relationship will help define the types of transaction environments required to support the company's operations.

The relationships listed above can include varying levels of control and interaction, and they can overlap. Companies may maintain any number of relationships involving one or more of the above classifications. Many of the relationships may directly or indirectly impact other relationships held by the company or those held by its participants.

The "golden rule" in organizational relationships is that they be beneficial to all participants. At any point when one party does not benefit, the strength of the relationship is endangered. The most important objectives of commercial relationships are cooperation (the joint activity toward a goal), coordination (the need for mutually consistent responses), and differentiation (the avoidance of mutually incompatible activities) (Carayannis & Alexander, 1997). Relationships should also include positive incentives to participate, as well as negative disincentives not to participate.

There are four types of information partnerships that can evolve through the execution of an enterprise strategy. Applegate et al. (1996) defines these partnerships as joint-marketing, intra-industry, buyer-seller, and IT vendor-driven. In joint-marketing partnerships, participant companies gain access to new customers and new territories. They expand their borders by sharing the cost of transacting, coordinating, and controlling market changes. Intra-industry partnerships evolve among competitors who see an opportunity or need to pool resources in order to keep up with the competition. This type of partnership is potentially difficult-to-manage because they are driven by the need to survive. Buyer-seller partnerships are those set up by sellers to serve their customers. Through a partnership agreement, the manufacturer or supplier is bound by a performance contract to provide a service, such as maintaining stock levels. An IT vender-driven partnership allows a technology vendor to bring its technology to new markets by providing a platform for industry participants to offer novel, technologically sophisticated customer services (p. 186).

The Partnership Types

The objective of IT in the supply chain is to create added value to the corporation and its stakeholders. It can help reduce costs, shorten process cycles, and improve communication. Revenue may improve through better customer service, improved responsiveness to time-sensitive customers, and differentiation in the market. Fewer physical assets, lower raw materials and reduced finished goods inventories will also enable companies to free up fixed capital and reduce working capital by optimizing inventory deployment (Gattorna & Hanlock, 1999, p. 7). These benefits are only likely to increase as companies achieve greater degrees of supply chain integration, moving from transactional focus, to information sharing, to a collaborative approach. These steps are depicted in the figure titled "Benefit Evolution."

The most common partnerships and alliances in today's economic marketplace include vertical integration, co-opetive relationships (horizontal integration), and outsourcing relationships. These relationships are bound by varying degrees of trust, sharing and control.

vertical integration relationships.

The basic idea behind vertical integration, or "insourcing," stems from the traditional theory that activities depending on external parties for resources or services be integrated within the organization's borders to reduce risk. Vertically integrated corporations purchase other companies, possibly in other industries, to guarantee possession and control of resources they need to reach their goals. These companies have internal control of their supply chains through ownership, and are in a better position to demand adherence to procedures and platforms from its suppliers. These relationships typically use cascading or hub-and-spoke structures, and are said to have intra-organizational supply chains. As an example, Ace Hardware demanded their suppliers go electronic or start paying a fee for every paper-based transaction (Reinhardt, 1998). The problems with vertical integration is limited expansion, and the companies may be left by behind if their competitors join forces.

The complexity of any project is dramatically increased when another company is brought into the team. As in any team, the more participants, the greater the need for teamwork and communication. By succeeding internally first, the company also positions itself more favorably for external collaborations. Gattorna & Hanlock (1999, p. 14) believe the most successful organizations will be those that can abandon hierarchical, command and control styles of operation and instead, build a collaborative internal culture. Companies should empower their people to make their own decisions and understand the significance of their tasks while not losing sight of the "big picture." Carayannis & Alexander (1997) also believe that collaboration begins from within. They state that by encouraging knowledge sharing at the individual level, the firm gains in two ways. First, it can guarantee that knowledge will flow efficiently to those employees who are in the best position to utilize that knowledge at a given time. Second, it bonds individuals together in a collaborative mode to ensure that they work toward common goals, which in turn will drive firm innovation. Moving away from centralized traditional structures will enable an organization to successfully take part in the web or network of partnerships and alliances that are becoming an increasing feature of today's market.

outsourcing relationships.

Outsourcing is seen as a midway point between vertical integration and virtual corporations. Managers make critical make/buy/outsource decisions regarding their operations and IT departments. Should they buy off-the-shelf hardware and software solutions and customize heavily, or outsource the entire project? Making an informed decision requires more than creating a detailed list of pros and cons. It starts with a detailed comprehension of the company's mission statement. The difference between the virtual corporation and outsourcing models depends on the extent of outsourcing. The outsourcing model is based on "selective" outsourcing, whereas the virtual corporation is formed by an array of outsourcing partnerships.

An outsourcing relationship is suitable for diverse organizations that face a changing business model. It translates to more independence within the various business functions, and allows them greater flexibility and speed of operations. This relationship gives the companies more freedom to focus on their core competencies, while delegating less important functions to their outsourcing parties. Companies also gain flexibility in human resource management. They do not have the staffing worries and can expect pre-trained employees. Outsourcing may be an expensive option, but it could represent the only option to solve the problem quickly, or at least temporarily. The decision to outsource should include a realistic assessment of the outsourcing costs weighed against whether the company has the infrastructure at their disposal. The infrastructure includes the equipment and systems, staff, experience, and time. Third party outsourcing companies have the skills and products, the bandwidth, the monitoring services, and more importantly, the services they provide are their core competencies. Ridout (1997) provides a list of additional, potential outsourcing benefits:

- Increased flexibility and speed (cost and delivery)
- Access to new technologies
- Work elimination through differentiated and/or reduced service levels
- Ongoing productivity improvement
- Operational reliability and infrastructure renewal
- Enhanced training and development opportunities for IT employees

One of the disadvantages of outsourcing is the loss of control. Companies must distinguish their operational processes from their strategic processes. These processes demand careful control. There is much resistance in the corporate ranks whenever core processes and systems are subject to outside influences. According to Ridout (1997), outsourcing also carries the risk of decreased employee morale and retention. The risk is greater if the company's employees and subcontractors work side-by-side. The solution is open, honest communication on both sides. Most outsourcing contracts have employee clauses that prohibit the parties from hiring workers from one another. When outsourcing any critical IT functions, it is important to agree on service and performance levels up front. A service level agreement should contain guarantees for such topics like uptime, problem repair times, upgrades, and help desk response times. These details will lower the risk of unsatisfied service.

Traditionally, only low risk activities were available for outsourcing. Today, many companies are choosing to outsource activities that require significant investments. The current trend is in application rentals. Many major IT players are now offering products and services that let service providers rent applications such as e-mail, Web hosting, network management, and enterprise application hosting over the Internet. Renting applications over the Internet's WWW enables any company with an installed base of browsers the opportunity to acquire top-notch enterprise applications with a moderate up-front cost. The renting party is free of maintenance worries; they just have to learn to use the software. Companies also gain the right to test certain modules of an enterprise resource planning (ERP) package before committing to buy the whole package.

Forrester (Fabris, 1999) predicts that over the next five years, the market for application rentals over the Web will rise from near zero to $6.4 billion. A stimulus for the high growth curve is in part a corporate reaction to the high failure rate of ERP implementations. The Standish Group found that 70 percent of ERP implementations fail to reach corporate expectations. Furthermore, the risks seem greater when cost, schedules, and efficiency is examined. The research found that ERP implementations are plagued with 178 percent cost overruns, 230 percent schedule overruns, and 59 percent efficiency deficits (Buckhout, Frey, & Nemec, 1999).

A major reason for ERP rollout failures, according to the Aberdeen Group, is the lack of education starting at the beginning of the implementations. Research showed that not using education, in the best case, leads to under-utilization of the new technology; and in the worst case, causes an outright rejection of the system by its intended users (Alugas, 1999, p. 61). Project managers often attempt to get their projects back on track by eliminating the redesign of certain business and physical processes. According to Buckhout et al. (1999), this method rarely works. The organization implements a less than optimal system. Whether there is a deficit or overload of features is not important, the company has a system that must be fixed.

Fabris (1999) comments that a typical ERP rental costs from $50,000 to $200,000 per month depending on the number of modules used. A typical application service provider (ASP) charges $500 per user per month for renting ERP systems. Most ASP's can install and configure a rental application in 6 to 10 weeks, and they generally absorb the costs for data migration, software licenses, and hardware. With an accelerated installation, ASP's do not provide much customization, so companies have to weigh the benefits of speed versus the limitations of going with off-the-shelf packages. A typical ERP installation project lasts one year, longer with extensive customization.

co-opetitive relationships.

Companies increase their importance in a market through their relationships with stakeholders and other firms. Co-opeting occurs when a company collaborates with its rivals and competes with its partners in pursuit of market relationships with profitable situations for all parties. Co-opetion is exercised through the formation of "value nets," where the firm interacts with suppliers, customers, competitors and complementors to maximize its own added value, in turn raising the returns of the other players in the network (Carayannis & Alexander, 1997). Instead of viewing all players as competitors, this approach can reveal that some opponents are in fact complementors who may add value to others.

The goods of an information relationship are in the form of knowledge. Thus, knowledge management is a function in today's enterprises that proves critical to their success. An important characteristic of knowledge is that it is not simply exchanged like currency, it is shared because both parties can use that knowledge independent of each other once they attain it. According to Carayannis & Alexander (1997), many relationships fail because the participants are either unwilling to share knowledge, on the faulty assumption that they are "parting with" that expertise, or because the parties are unable to attain a mutually-agreeable arrangement for the sharing of knowledge. Possession of knowledge is important; but its application and control is much more significant. Hence, firms may be willing to cooperate to share and develop jointly "generic knowledge," which they then apply in their unique ways in differentiated products on the market. The availability of that generic knowledge adds value to the products of both firms, yet still allows them the freedom to compete with each other at the market level (Carayannis & Alexander, 1997).

Trust and sharing are two factors that must be managed in a relationship. Carayannis & Alexander (1997) discuss the importance of intellectual and social capital in organizational relationships. Social capital is an organization's ability to cooperate towards a common goal beyond purely financial motives. To form and lead the kinds of hybrid, cooperative organizational relationships, companies must command substantial social capital. Clearly, just as knowledge is the lever of intellectual capital, trust is the lever of social capital. They argue that building trust in such networks requires the sharing of intellectual capital to build social capital (1997). In other words, knowledge exchange forms the foundation for trust in corporate alliances, linking intellectual capital with social capital.

Thus, co-opetive relationships can be built by knowledge sharing within a network of supply chain partnerships as long as they establish fair exchanges to build trust. They should adopt a negotiation strategy of exclusivity and commitment to each other, and develop bilateral communication and establish long term and informal contracts (Gattorna & Hanlock, p. 14).

Many companies would like to combine the integration benefits of supply chain relationships and the expertise of outsourcers, but most are either unwilling to invest or do not have the capability to combine both worlds. On the other side, third-party providers would like to increase their skills to better meet the needs of their clients. Anderson Consulting saw this need and developed a new type of supply chain outsourcing relationship called Fourth Party Logistics (4PL). The 4PL organization acts as a supply chain integrator: it assesses, designs, builds, and runs comprehensive supply chain solutions, combining its own expertise with that of a number of complementary service providers. 4PL is based on a "best of breed" approach. The 4PL concept is distinct from current approaches to outsourcing because it delivers a comprehensive solution, and it delivers measurable, sustained value through the ability to have an impact on the entire supply chain (Gattorna & Hanlock, p. 16).

For any company to survive in the global market, they must form and maintain relationships. Friedheim (1998) contends that we are heading towards "trillion dollar enterprises." He believes that a few dominant enterprises will control two-thirds of the global market in their respective industries. They will not be global corporations; rather, vast networks of corporate alliances. We will see coalitions formed by independent firms acting in concert as single companies.

As business relationships grow, so do their borders. The problem of managing the demand and supply chains at a technical level boils down to a problem of distributed communication (Dyck, 1997). To adequately handle this level of communication, businesses must employ enterprise tools.

The Enterprise Tools

The growth of enterprise tools is attributable to the drastic increase of competition on a global scale. Corporate decision-makers require accurate information about production, sales and marketing, finance, research and development, and personnel. They require timely information about their corporation and their business environments. How does one retrieve information that is dispersed throughout many corporate business structures, on a wide variety of platforms, and in many types of applications? Information retrieval in an enterprise environment is complex and time-consuming. Once the information is attained, it still must be analyzed.

The enterprise tools of today have become multi-dimensional. They focus on achieving an overview of a landscape with ever-changing borders that extend beyond the intellectual grasps of managers. Business intelligence concepts attempt to bring quicker data-to-information conversions and apply methods to format the results for accurate decision-making. These tools integrate many technologies to provide end-to-end business intelligence solutions to enterprises. These tools are classified in two groups: back-end and front-end.

The Back-end Tools

Back-end tools are large, complex software and hardware configurations that encompass a large area of information processing, analyzing, formatting, and presentation. The tools mainly focus on streamlining in-house operations. Implementation of back-end tools almost always requires some business process reengineering. These tools use preset transactions that require companies to rearrange their processes to fit the standard settings. Customization is possible and often needed, but customized transactions are expensive and time-consuming to develop. The companies must also be aware that the solutions are no longer standard and may not work further along the links of the supply chain. Most of the tools at this level are vendor dependent, but may have the capability to communicate with other tools using common communication standards. A mix and match of enterprise tools at this point is difficult to achieve. In most cases, the vendor prescribes pre-defined hardware and software configurations. The back-end tools being implemented include enterprise resource planning (ERP) systems, supply chain management (SCM) tools, data warehouses, and data mining technologies.

ERP systems are modular-based, real-time systems that integrate information from many organizational functions. They are designed to tie together dissimilar company functions to create more efficient operations. These tools have been successfully applied in the automation of processes along a supply chain. For example, placing an order using one of the ERP programs can trigger a shipping order via a logistics company with billing, inventory, customer service, and other functions following automatically. Below is a list of standard, integrated functions typically available for ERP systems. This list comes from the SAP R/3 system (Will, Hienger, Strassenburg, & Himmer, 1997, p. xvii).

- Production Planning (PP)
- Sales and Distribution (SD)
- Office and Communications (OC)
- Controlling (CO)
- Material Maintenance (MM)
- Human Resources (HR)
- Quality Assurance (QA)
- Asset Management (AM)
- Plant Maintenance (PM)
- Project System (PS)
- Industry Solutions (IS)
- Financial Accounting (FI)

ERP systems must be installed in a business-driven, cost-effective manner. One disadvantage to ERP systems is that they tend to lock a company's principles and processes. Making changes to the processes becomes expensive. For this reason, companies must be aware of their location in a supply chain and anticipate where they may be heading. In a supply chain type environment, companies must also be sensitive about the well being of their partners if they decide to change their strategic positions. Companies must not feel that they are obligated to install the complete range of services provided by ERP systems. They must focus on strategic processes. If the data is stored, will the company take advantage of its presence? Many times, installing unneeded features provide added bottlenecks that can actually lead to efficiency deficits.

ERP systems provide solid transactional information focused primarily on the internal operations of an organization. This is, in many cases, insufficient to meet complicated supply chain planning needs of organizations integrated along a complex supply chain. Broader supply chain planning solutions are equipped to cope with the complexity of integrating information across any number of disparate information systems spanning the entire length of the supply chain. Supply chain planning systems provide the critical link between the supply chain strategy and supply chain operations. They involve all links in the supply chain, from internal companies operations, to suppliers, customers, and third-party providers (Gattorna & Hanlock, 1999, p. 10).

A few years ago, most IT projects were focused on business process automation. Now that most business operations are supported by IS, the main focus has turned to process optimization. This concept carries over to the supply chain. A supply chain is defined as a network of facilities that procures raw materials, transforms them into intermediate subassemblies and final products, and then delivers the products to consumers through a distribution system. SCM tools facilitate negotiations between different functional areas competing for communal resources. Typical negotiations arise between manufacturing, research and development, and marketing. Postponements in any one of these areas directly affect the actions of the other participating functions. The challenge of SCM is to balance the requirements of reliable, prompt customer delivery with manufacturing and inventory management costs. To meet this challenge, managers must assess the supply chain in its entirety, not just the sum of its various parts (Billington, 1999, p. 36).

Billington (1999, p. 38) believes the keys to effective SCM are metrics, models, and cooperation. Supply chain managers require metrics to measure the economic robustness of their product's supply chain configuration. Applying appropriate metrics ensure that decisions made locally actually improve the overall performance of the supply chain from the customer's perspective. Companies may find situations where local managers invest to improve their part of the supply chain, but the resulting change brings little or no value to the end customer. Ironically, the cost of the total supply chain may actually increase with no improvement in customer service (p. 39).

Analytical models are needed to make sense of the complex supply chain relationships. They are used to determine the most cost-effective place to buffer uncertainty, such as delivery and manufacturing times. At a minimum, a firm should understand the basic flows (financial, informational, and physical) associated with their supply chains. Cooperation along the supply chain is needed to help buffer uncertainties. For example, managers must realize that product delays due to unreliable deliveries can either drive their product sales down, or their inventory investments up. Without cooperation between all parties, the productivity of the entire supply chain is endangered.

A data warehouse is a separate application environment with a dedicated database that receives its information from a diverse set of data sources. The data warehouse structure is designed to store information according to four characteristics: integrated common representation across business functions, subject-oriented, historic time-slices, and the data is non-volatile (Rob & Coronel, p. 690). Some companies find the need to create multiple, independent data warehouses for the specialized needs of business units or departments. These types of data warehouses, called data marts, are smaller and can be consolidated in a centralized data warehouse. Information warehouses are designed to support complex queries and analysis, and they may draw upon many databases and other enterprise tools for information.

The goal of the data warehouse is to transcend the internally focused control culture by using internal and external data patterns to identify events which trigger strategic decisions (Carayannis, 1997). Data warehouses may be used with many different types of technologies. Various forms of Online Analytical Processing (OLAP) and artificial intelligence are finding successful applications in enterprise EC environments. The data warehouse forms the storage structure, data mining methodologies provide an improved means to access and analyze the data within these structures.

Beneath the standard steps in building a data warehouse, that is, forming a team, finding, gathering, cleaning, and transforming the data, organizing it automating the process of moving the data to areas for quick access, is the task of uncovering previously overlooked information nuggets (Carayannis, 1997). Data mining tools view the database as a whole and attempt to find previously unknown relationships. They provide visualization tools for quicker data analysis. Among the fruitful areas identified, are consumer marketing using scanner data and the financial industry, analyzing stock market data, especially in trying to uncover time patterns and sequences (Carayannis, 1997). Data mining tools often use logical "info cubes" in combination with slice-and-dice and drill-down techniques, such as association rule discovery, and decision-tree induction.

The basic technologies described above are combined for many uses in enterprise management. In essence, back-end tools provide a means for information consolidation from sources that span across many borders. These tools are beginning to become successful in areas of knowledge, workflow, and document management. There are also strategic enterprise management tools that comprise of a suite of monitoring tools for executives. These tools focus on information consolidation, planning and simulations, performance monitoring, and stakeholder relationship management. At any rate, there is a definite trend towards enterprise level tools. SCM programs sold only $2 billion in 1997. Advanced Manufacturing Research Inc. expects the number to hit nearly $14 billion in 2002 (Gross, 1998).

The Front-end Tools

While back-end tools have an internal focus, front-end tools focus on the external relationships. Front-end tools are customer-oriented. They are more flexible and less costly than their back-end counterparts. For the most part, they are customizable to a much higher degree, and their configurations are easier and faster to modify. These tools help businesses share knowledge, they are easy-to-use, and they provide a means of competitive advantage. Front-end tools are available as stand-alone applications and as integrated suites. Similar to office suites, they suffer from the same downfalls of other suite type applications. As a suite, they reach a higher level of integration, but their functionality is less than optimal. If a business decides to go the other route, they have more vendors to deal with, but they receive higher functionality from the product.

Many companies have spent millions on total quality management (TQM) programs. Such programs are a must for any corporation that works in a distributed environment. These programs demand that the company take an inward look at their processes for efficiency and consistency. TQM programs ensure that standardized procedures are followed in all areas the company may operate. They stress ongoing corrective action to encourage individuals and organizations to understand better the root causes of their problems. In this manner, they can develop corrective strategies, and they learn both how to solve problems better and how to diagnose their own problem solving strengths. Many companies have devised their own versions of the TQM concept.

ISO 9000 standardization is one TQM method that has become extremely popular. ISO 9000 certification has become just as popular today because of consumers' perception as a status symbol, than from its actual purpose of improving and ensuring efficient processes. Besides the fact that businesses benefit from process standardization and cause/effect analysis, ISO 9000 certification improves the marketability of the company's products because their customers see that they have reached an accredited level of quality.

The most important area in the front-end category belongs to the customer relationship management (CRM) tools. Enterprises consider this an opportunistic area to add value through customer-focused strategies and service differentiation. Effective customer relationship management depends on the value placed on customer information. CRM tools attempt to apply customer information as strategic capital. Even though most companies store large amounts of customer information; they are not able to generate, retrieve, research, and analyze this information in an efficient manner. The challenge of CRM is to help the company use their customer information to endow their customers with a feeling of importance, show the customers that the company understands their predicaments, and to ensure customer satisfaction.

CRM tools are designed to support the organization and customers through all stages in the customer relationship life cycle. These tools retain historical data on each relationship as they evolve through contact, and they allow organizations to share this data across functions. Since many teams may be involved with the same customer for different purposes, they still need to coordinate their actions. SAP AG. (1999) states the goal of their CRM suite is to present an integrated set of applications to support processes between customers, the enterprise, and other business partners. Only through integration of a company's mainly internal functions with its customer-centric functions allows it to get the maximum benefit from both its CRM and ERP systems.

Many companies are using their intranets and extranets to provide Web-based self-service front-ends for their employees and customers. These front-end services function as information boards or can provide transactions that the customers or employees perform on their own. The possibilities range from help desk operations to record correction and updating, to business procurement. In one example, Prudential reduced their service costs by using a self-service extranet. In doing so, they cut hundreds of calls per day to their 800 number (Reinhardt, 1998).

Call management centers enable a company to provide customer support to a wide geographical area. They are expensive in terms of cost, but provide the highest quality and most satisfying customer service. Many critical application support centers are experimenting with "follow the sun" type systems where the support is handed over to the next station at the end of normal work hours in the area of support. This type of operation saves the company from paying after-hour wages, and the support personnel retain a more humane work schedule.

Many online retailers do not adequately prepare for the need of online assistance. Some companies' reputations were damaged due to their use of faulty electronic customer service systems that failed to answer customers' e-mail messages adequately and timely. To improve customer relations, many EC companies are adding real customer support representatives to their online customer service offerings, using such technologies as live chats and Internet telephony. These companies maintain that the high cost of the live service is worth the potential revenue from selling pricier items and adding repeat customers. One disadvantage with Internet telephony is that it requires the user to have an audio-equipped PC and a reasonable connection speed.

As EC companies move more towards automation, they begin to lose spontaneity in business decisions. Workflow automation has two sides. It reduces time and cost, but it also takes away the "personal touch." There is great fear on Wall Street that if all companies configure their transactions automatically to, for instance, sell at a certain amount, a virtual landslide of sales could be devastating to an economy. At the business procurement level, there are new businesses appearing using electronic "business agents" to control business-to-business procurement transactions. The agents, or "bots" as they are called, link various sites in an industry. These links create "e-markets," or according to BusinessBots, Java Agent-Enabled Marketplaces (JAM). JAMs form 24-hour, real-time automated markets. JAMs are also programmed for bartering, quality estimations, and reputation management. These tools offer many benefits, but may also lead to impersonal relationships (Krantz, 1999).

Enterprise tools bring about many benefits for businesses and consumers and have become necessities to enterprise environments. The benefits are so great that businesses can no longer function without them once they have implemented them. If their use becomes commonplace to all businesses in the industry, the competitive advantage is again reduced and new possibilities must be researched. Klaus Besier, President of CWC Inc. commented "If every company is using SAP, the question is: What is the competitive advantage to me? Not much. The only differentiator you have left is in the sales and marketing arena" (Fisher, 1998). The trick is to reach that level of sophistication to be able to benefit in the way these methods allow. Similar to the EC environment, the enterprise will also evolve in steps. Reaching the next step will bring the company that much more ahead of the competition. To stay one step ahead, businesses must continue to strive for competitive advantage through innovation. Is that not the purpose of the free market? And even if all businesses receive the same information base, what the business eventually decides to do is dependent upon the actions of its decision-makers.

In essence, the EC enterprise environment must fully support the EC business environment according to the social rules determined in the EC environment. This support is achieved through telecommunication networks, network-type relationships, and tools requiring networks. All three of the above aspects require teamwork, sharing, cooperation, and integrated processes. The networks provide a means of distributed communication to support the tools and relationships. The relationships enable the pooling of resources that can be beneficial to many parties simultaneously. And, the tools provide decision support for large areas of responsibility with ambiguous borders and many areas of uncertainty.

Conclusion

Electronic commerce is still in its growth stage. When solutions to market and legal barriers are actively pursued, growth will rise at an even steeper rate. In the next few years we will see many advances in how businesses conduct operations, how they market their products, and how they handle their business and consumer relationships. Standards will take hold. As EC awareness rises, we will see more and more businesses achieving higher levels of EC, benefiting from the global, interactive environment of the Internet. The macro view of EC helps the potential EC participant prepare solutions to combat the external pressures that will affect their decisions. It will help them recognize the strengths and weaknesses of their position and help them decide which strategies will help them build a competitive edge.

The EC business environment is the heart of EC. It contains the concepts for the business models, the customer interface, and the EC purchase process using secure messaging systems. It provides awareness of the technologies and tradeoffs available to the businesses. And, it shows how these technologies work together to produce purposeful systems. The EC business environment represents the micro view of online operations. This view helps the EC participant prepare solutions that allow smooth integration between the customers, employees, and the process phases.

At this time, a universal, totally secure environment has not and may not ever be created. For this reason, the perceived lack of security remains a major obstacle to EC. However, there is progress being made on both fronts. Lead by the private sector and governments alike, they are beginning to provide awareness programs and making decisions toward future infrastructures to increase the capacity for the future economy. We should continue to allow the market forces to guide us through the next developments in EC, as they provide the stimulus for flexibility and innovation.

Without networks, none of the latest accomplishments of the Internet would be possible. As a compromise between open standards and secure, private communities, the future of EC lies within the realms of extranet environments. In agreement with Cayannis & Alexander (1997), the differentiation between the Internet as a global network of computers and the intranets/extranets, corporate-based computer networks protected by firewalls and involving well-defined communities, is a potentially more promising technology platform for fostering Internet-related commerce. Extranets have also changed the perception of security from a burden to a service. Extranet partners concerned about data integrity and privacy protection will demand security (Hapgood, 1999). To become members in an extranet, we must be able to form, lead, and maintain relationships with a variety of partners.

These relationships will cultivate into the value-nets perceived by many as the "extended corporation." The partnerships and alliances based on trust and sharing allow companies to pool their resources in co-opetive environments. Knowledge sharing allows firms to access generic knowledge to cooperate and compete simultaneously for greater productivity. To achieve this level, businesses must be able to step away from the rigid command hierarchies and stress sharing, beginning at the individual level. They must also integrate their processes within the supply chain. The integration process must occur internally first, before one can expect successful external integration.

Companies see major opportunities for applying EC to supply chain activities, such as planning, purchasing, and logistics. Fundamental changes in business operations will focus on the core processes of an enterprise: channel management, supply chain optimization, demand forecasting and other operations that can maximize customer service levels, minimize inventory levels and control other costs. To achieve these goals, companies are relying on powerful new tools that speed up and automate the flow of information. In the enterprise environment, EC loses some if its visibility because it is just one variable in a chain of business channels. However, EC is integrated into many functions. Without active participation in the EC market, enterprises cannot fulfil their goals at a competitive level.

Basically, a company that attempts to conquer the world on its own is doomed. Without the help of "industrial friends," a single company cannot attain the benefits available to those that actively contribute to trustworthy, cooperative relationships. No matter how well IT can catapult a company ahead of its competition, those that maintain strong relationships have optimal chances of surviving, even during the worst of times.

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The Emerging Landscape of Business to Business E-Commerce

By

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A quiet revolution is underway in business-to-business (B2B) e-commerce. Most of the attention in B2B e-commerce has focused on individual firms like Cisco and Dell who eliminate middlemen and sell directly to business customers. However, the real B2B e-commerce revolution is taking place outside the boundaries of individual firms, and this revolution involves the *creation* of new middlemen.

A new breed of intermediaries is emerging to facilitate B2B e-commerce. These new intermediaries go by different names – "Vortexes", "Butterfly Markets", "Net Market Makers", and "E-Markets". We prefer to call them **eHubs** for two reasons. First, these intermediaries do for e-commerce transactions what a network hub does for bits - concentrating, routing, and switching transactional traffic in B2B e-commerce. Second, they occupy a central position between buyers and sellers, much as airline hubs do between city pairs. We define eHubs as *neutral Internet-based intermediaries that focus on specific industry verticals or specific business processes, host electronic marketplaces, and use various market-making mechanisms to mediate any-to-any transactions among businesses*. eHubs create value by aggregating buyers and sellers, creating marketplace liquidity, and reducing transaction costs.

eHubs promise to reshape the landscape of B2B E-commerce. They will create lucrative franchises for themselves in the process. Charles Finnie at Volpe Brown Whelan, a San Francisco-based investment bank, estimates that transaction volumes through eHubs could grow from $290m in 1998 to $20b in 2002. The Precursor Group's estimates are even higher, at $50b-$130b by 2002. Even with the lower estimates, eHubs could generate transaction fees of more than $10 billion within three years, with gross margins of 85%. If these numbers sound too optimistic, consider eBay, an eHub in the consumer-to-consumer market. eBay boasts gross margins in excess of 80%, and, more strikingly for an Internet company, reported a profit within a year of its inception.

Despite their enormous significance for B2B e-commerce, eHubs remain poorly understood. Like the bulk of an iceberg below the surface, they remain largely invisible in the eyes of the media, investors, and analysts. While the landscape is still blurry, and few eHubs have achieved any degree of prominence, it is possible to describe what eHubs are, what they do, how they create value, and what the future is likely to hold. Although our analysis at this early stage is less precise and our predictions less certain than we would like, understanding the underlying forces at work is likely to be valuable for entrepreneurs and investors. It is productive to begin by contrasting eHubs with eTailers in the Business-to-Consumer arena.

eHubs versus eTailers: A different kettle of fish

At a time when eTailers like Amazon.com and Buy.com are positioning themselves as "commerce hubs", it is tempting to think about eHubs as the B2B equivalent of eTailers. Nothing could be further from the truth, as the contrast in Table 1 illustrates.

Returns to scale: This is the most important and perhaps the least well understood difference between B2C commerce hubs and B2B eHubs. B2C commerce hubs are *one-way networks* (also called "Sarnoff Networks after the inventor of TV broadcasting) that deal directly with buyers, and create benefits mostly for sellers. However, B2B commerce hubs tend to be *two-way networks* (also called "Metcalfe Networks" after Metcalfe's Law of switched networks) that mediate between buyers and sellers, and create benefits for both buyers and sellers. Consequently, *the value created by B2C hubs tends to increase linearly in the number of* *buyers, while the value created by B2B eHubs increases as the square of the number of participants*. This difference is illustrated in Figure 1.

Consider a B2C retailer like Amazon. The benefits to an individual buyer are roughly the same whether Amazon has 100 customers or 100 million customers, because the benefits to buyers are primarily the time saved from going to a physical bookstore and ordering a book. Amazon does, however, benefit on the supply side from marketing and procurement economies of scale. These benefits tend to be linear, so the total value created by Amazon increases only linearly in the number of customers. There are no strong demand-side externalities, other than user-generated content and option value of brand extensions.

Now, consider a B2B eHub (or a C2C eHub like eBay with similar two-way characteristics). eHubs create value by reducing search costs, reducing information transfer costs, standardizing systems, and improving matching for both buyers and sellers. Buyers benefit because they have more choices and sellers benefit because they have access to more buyers. All of these value drivers increase with the square of the number of participants in the hub. To see how this works for search costs or information transfer costs, take the case of five potential sellers and five potential buyers. In the absence of the eHub, each seller would have to determine the identity of each buyer. Determining potential buyers might be done through advertising, a direct salesforce, etc. After having determined the buyer's identities, each seller would have to contact each buyer each time it wanted to do a transaction. Without the eHub, the participants in this market would have to undertake 25 searches – each seller looking for five buyers – and, then, make 25 contacts – either faxes or phone calls – each time the sellers wanted to sell. With an eHub, the eHub finds the buyers and sellers, reducing the number of searches to ten. Similarly, each time the sellers want to sell, there are only ten contacts – five postings on the eHub and five views by the buyers. An eHub reduces searches and contacts by 15 (= 5^2 – 5x2). For 100 buyers and sellers, an eHub reduces searches and contacts by 9800 (= 100^2 – 100x2).

The "hubonomics" are similar for matching buyers and sellers, transferring information like credit checks, product descriptions, and evaluations, and for standardizing systems. Further, the non-linearity of the benefits to an eHub makes it difficult for a competitor to offer customers similar benefits. This is particularly true for matching between buyers and sellers in auctions and exchanges. A buyer is far less likely to find a match in an illiquid eHub than in a liquid one. For these reasons, it comes as no surprise that eBay is profitable, and commands a rich valuation.

Importance of domain expertise: Setting up shop as an eTailer does not require deep knowledge of specific categories. The founders of many popular eTailers, including Amazon.com and eToys, had no previous category experience, and Amazon has quite easily migrated across retail categories. In contrast, domain expertise is a must for creating an eHub. Consider an eHub like SciQuest that mediates between buyers and sellers in the laboratory and scientific equipment marketplace, or PlasticsNet, that makes a market between plastics manufacturers and plastics processors, or e-STEEL, that makes a market between buyers and sellers of steel. The founders of these eHubs had extensive industry experience and relationships with key buyers and suppliers. Domain expertise and relationships are key barriers to entry for eHubs.

Customer acquisition and retention: eTailers typically use advertising and affiliate programs for customer acquisition. However, buyers and sellers don't simply see a banner advertisement and sign up with SciQuest. Customer acquisition requires sales calls made by a nationwide direct salesforce. The process for signing up buyers and sellers is time-consuming and expensive – supplier catalogs have to be loaded online, business processes need to be understood, business rules need to be defined, and the eHub's systems need to be integrated with the systems of buyers and sellers. However, customer switching costs and customer retention rates are correspondingly higher for eHubs, once they embed themselves into the business processes of buyers and sellers. For eHubs, competition is much further than a mouse click away.

In summary, the higher entry barriers due to increasing returns to scale, to domain expertise, and to higher customer switching costs from process embeddedness, cumulate into stronger profit potential and more defensible business designs than B2C retailers.

Types of eHubs: Vertical versus Functional eHubs

In contrast to pure financial marketplaces, eHubs are *contextual marketplaces*. The importance of context means that eHubs need to focus on a specific dimension of context. Attempting to be everything to everybody is a recipe for failure, as the experience of Jim Manzi's Industry.Net suggests. Industry.Net was designed as a B2B shopping mall across different verticals and different functions. One of the primary reasons that it failed is that it had no focus or context. It was neither vertical nor functional. As a result, it was never able to attract enough buyers and sellers to generate liquidity.

An eHub can specialize *vertically* along a specific *industry or market*, or it can specialize *horizontally* along a specific *function or business process*. Based on these dimensions, we classify the universe of eHubs into two primary types - **vHubs** (vertical eHubs) and **fHubs** (functional eHubs). Together, vHubs and fHubs form the quilt of B2B e-commerce illustrated in Figure 2.

vHubs are hubs that have a vertical market or industry focus. They provide deep domains-specific content, and domain-specific relationships. Examples of vHubs include Altra Energy (energy) Band-X.com (telecommunications), Cattle Offerings Worldwide (beef and dairy), Chemdex and SciQuest (life sciences), e-STEEL (steel), FloraPlex (flowers), IMX Mortgage (mortgages), PaperExchange (paper), and PlasticsNet.com (plastics). vHubs typically start out by automating and hosting the procurement process for a specific vertical, and then supplement their offerings with industry-specific content.

The likely success of a vHub increases with:

- Greater fragmentation on the buyer and the seller side in the vertical market.
- Greater inefficiency in the existing supply chain.
- Ability to create critical mass of key suppliers and buyers.
- Domain knowledge and industry relationships
- Ability to create master catalogs and metadata schemes for searching across catalogs.
- Presence of attractive adjacent verticals for leveraging existing supplier or buyer base.

The primary challenge for vHubs is the difficulty of diversifying and extending their business into other vertical markets, because their expertise and relationships are fairly domain-specific.

Table 1: eTailers (B2C) versus eHubs (B2B)

	etailers (B2C E-Commerce)	eHubs (B2B E-Commerce)
Objective	Connecting consumers to information, products, and services they want.	Improving the efficiency of buyer-seller transactions in business markets.
Customer attractors	Content, community, commerce	Process automation, process outsourcing and hosting.
Value proposition	Convenience, wider assortment relative to physical stores.	Transactional efficiency, improved liquidity.
Customer acquisition methods	Mass communication - Advertising, affiliate programs.	Personal selling - Direct salesforce, trade shows.
Customer acquisition costs	Low –referral fees, advertising CPM.	High, declines over time –sales calls, system integration costs.
Entry barriers for competitors	Low - Audience size, logistics capability, experience quality.	High - Domain expertise, buyer/ supplier relationships.
Switching barriers for customers	Learning, user-generated content, affinity programs.	Process embeddedness, liquidity.
Partners and complementors	Content providers, logistics and fulfillment providers.	Logistics, credit approval, escrow, receivables, payment processing, inspection, etc.
Value creation as a function of scale	Typically linear, driven by one-sided (demand) aggregation.	Typically nonlinear, driven by two-sided (buyer-seller) aggregation and liquidity.

Figure 1: Hubonomics 101 - Why B2B and C2C hubs create more value than B2C hubs

One-way (Sarnoff) network in B2C commerce: Value $\propto N$

Two-way (Metcalfe) network in B2B or C2C commerce: Value $\propto N^2$

fHubs focus on providing the same functions or automating the same business process across different industries. Their expertise usually lies in a business process that is fairly "horizontal", which means that it is generalizable across vertical markets. For example, iMark.com focuses on buying and selling used capital equipment. Their target participants are investment recovery managers responsible for the equipment. Other examples of fHubs include Processors.com (reverse logistics), MRO.com (MRO procurement), Employease.com (employee benefits administration), Celarix (global logistics monitoring and tracking), Bicdom.com (project management), AdAuction.com (media buying), and energy management (Youtilities.com).

The likely success of an fHub increases with:

- Degree of process standardization and generalizability.
- Process knowledge and workflow automation expertise.
- Ability to complement process automation with industry-specific content.
- Ability to customize the business process to respond to industry-specific differences.

The primary challenge for fHubs is the lack of industry-specific content. fHubs target functional managers who affiliate and organize their work primarily around their functional area, and not their industry. But many functional managers also affiliate with their industry. There is a risk that they will gravitate towards a vHub for their vertical and relegate the fHub to become a back-end service provider for the vHub.

Figure 2: Vertical versus Functional eHubs

vHubs: Vertical (market) focus
Plastics
Steel
Chemicals
Paper
Energy
Cattle
Telecom
Flowers
fHubs: Functional (process) focus
Investment Recovery
MRO procurement
Reverse logistics
Logistics management
Benefits and staffing
Project management
Media buying
Energy management

Hub design: How to create and scale an eHub

Architects of eHubs must address a number of key design and execution issues. These include:

Choosing market-making mechanisms

eHubs can employ a variety of market-making mechanisms to mediate transactions between participants in the hub. These mechanisms can be fixed-price mechanisms that are typical of catalog purchasing, or dynamic pricing mechanisms that include auctions, exchanges, or barter. We compare these mechanisms in Table 2.

Table 2: Market-Making Mechanisms employed by eHubs

	Catalog mechanism	**Auction mechanism**	**Exchange mechanism**	**Barter mechanism**
How it works	Demand and supply aggregation	Spatial matching	Temporal matching	Reciprocal asset matching
How buyers benefit	Lower search costs, lower transaction costs, broader supplier base	Catalog benefits, better matches, better prices	Auction benefits, Manage peak-load demand, hedge risk in volatile markets.	Ability to manage currency risk, savings in transportation costs.
How sellers benefit	Broader customer access, lower transaction costs	Catalog benefits, better prices.	Auction benefits, ability to liquidate excess supply, ability to manage volatility	Same benefits as buyers
Returns as a function of scale	Quadratic for information flows, linear for physical flows, aggregation-driven	Highly nonlinear, aggregation and liquidity-driven	Highly nonlinear, aggregation and liquidity driven	Highly nonlinear, aggregation and liquidity driven
Where it works best	• MRO products • Pre-planned purchases • Fragmented supplier base	• Used capital equipment • Perishable capacity • Hard-to-specify products	• Near-commodities • High fixed-cost assets • Volatile markets	• Cyclical demand • High-inflation regimes • High transportation costs
How prices are set	Pre-negotiated, usually static	Most attractive bid, prices move only in one direction	Marketwide bid-ask, move up or down	Subjectively set based on relative prices
Can buyers be sellers?	No	Yes, sometimes	Yes, quite often	Yes, by definition
Key challenges	Creating master catalog, gaining supplier critical mass	Liquidity, misrepresentation/ fraud, fulfillment	Asset specifiability, matching algorithms, off-exchange trade	Liquidity, determining exchange rates for assets

A listing or *catalog model* creates value by aggregating suppliers and buyers. It works best in industries characterized by fragmented buyers and sellers who transact frequently for relatively small ticket items. Given the small transaction size, it is too costly, even on the Internet, to negotiate each transaction. The catalog model also works well when most of the purchasing takes place with pre-qualified suppliers and with pre-defined business rules, and the occasional purchase requires searching across a number of smaller suppliers. Finally, it works best for situations where demand is predictable, and prices do not fluctuate too frequently. Chemdex, SciQuest, and MRO.com are examples of catalog-centric eHubs.

An *auction model* creates value by spatial matching of buyers and sellers. It works best in industries or settings where one-of-a-kind, non-standard, or perishable products or services need to be bought or sold among businesses who have very different perceptions of value for the product. Capital equipment, used products, unsaleable returned products, and hard-to-find products fit this description. iMark.com uses an auction model to sell used capital equipment. AdAuction.com auctions off perishable online and print advertising inventory.

An *exchange model* creates value by temporal matching of supply and demand. It requires a real-time bid-ask matching process, marketwide price determination, as well as a settlement and clearing mechanism. The exchange model works best for near-commodity items that can have several attributes, but are easy to specify. Exchanges create significant value in markets where demand and prices are volatile, by allowing businesses to manage excess supply and peak-load demand. PaperExchange in paper, e-STEEL in steel, and Altra in energy are all good examples of eHubs that employ exchange models.

A *barter model* creates value by matching two parties who possess reciprocal assets within an asset class, or across asset classes. While barter has traditionally been used in inflationary economies with shortages of hard currency as a tool to minimize currency risk, there are other innovative applications. These include bartering manufacturing capacity, bartering services for other services, and bartering high-transportation cost assets (like paper or steel). Interestingly, barter is a symmetric exchange, and there is no distinction between a buyer and a seller in a barter transaction. We predict that several innovative barter-related eHubs will emerge in the near future.

In many cases, an eHub will find it valuable to offer more than one market-making mechanism. Customers of eHubs will favor eHubs that allow buyers and sellers to choose the appropriate market-making mechanism. This means that eHub architects need to take care in choosing a technology platform, because technology providers have tended to focus on catalog (Ariba, Commerce One, IBM), auction (Moai, Dynamic Trade, Open Site), or exchange (TradeEx) models, and lack integrated multi-mechanism platforms.

Solving the chicken and egg problem

The value created by an eHub increases non-linearly in the number of participants. The key goal of any eHub, therefore, is to obtain liquidity – a critical mass of buyers and sellers – as quickly as possible. The problem, of course, is that it is difficult to attract buyers without sellers and difficult to attract sellers without buyers.

While eHubs need to market to both sellers and buyers, they will generally be better off marketing more heavily to the party in the transaction that receives greater relative benefits. Once the eHub has gained the participation of that side, it can market more easily or even compel the other side to take part in the eHub. Despite conventional wisdom that eHubs tend to be buyer-centric and hence need to attract buyers first, there is no reason why eHubs will consistently favor buyers over sellers or vice versa. Chemdex and SciQuest focused on buyers first in order to attract sellers. PaperExchange, in contrast, has focused on sellers first in order to attract buyers.

In its early stages, eHubs might also consider injecting liquidity into the market. A good example of this is the strategy that Priceline.com adopted in growing its eHub for airline tickets. Priceline.com focused on getting buyers (who arguably receive the greater relative benefit) and injected liquidity by buying airline tickets at a loss in order to attract buyers. Once it achieved critical mass, the incentives for airlines to cooperate increased. A related strategy is to act as a "temporary buyer". For instance, the reverse logistics eHub Processors.com has good relations with sellers (grocery store chains), and might decide to act temporarily as the buyer in conjunction with selected liquidation brokers, to inject liquidity.

Timing the market entry

How quickly should an eHub open for business? eHubs that start early reach buyers and sellers more quickly, preempt competitors, and begin to learn earlier about the market. But these benefits must be weighed against the risks that premature opening will discourage market participants from returning because of lack of functionality or lack of liquidity and alert potential competitors. Given the network externalities associated with eHubs, we are inclined to favor early entry over waiting. The risks can be mitigated by making it clear that the eHub is early and by soliciting feedback from early users. Another strategy can be to open an informational or content-focused eHub, and to add transactional functionality as liquidity improves.

Managing channel conflict

Some existing intermediaries are initially likely to be hostile to eHubs, because of concerns around disintermediation and price erosion. To deflect the disintermediation concern, eHub architects should stress that an eHub can complement an intermediary rather than act as a substitute. For example, an eHub can provide more volume and better matches to existing intermediaries. This is particularly useful in industries with uncertain or volatile supply and demand. To counter the price erosion issue, sophisticated eHubs should provide *value proposition transparency*, and not merely *price transparency*. This can be done by providing metrics related to quality, reputation, reliability, speed, or service, in addition to providing prices. Finally, eHubs can create "virtual private marketplaces" that preserve pre-negotiated terms and relationships between specific buyers and suppliers.

Expanding the scope of the offering

While liquidity is the key determinant of an eHub's success, an eHub also should try to increase the depth and breadth of its relationships with participants. This can be done by providing complementary services to participants that make it more costly for buyers and sellers to transact elsewhere. Such services might include IT services like system integration and hosting; financial services such as payment processing, receivables management and credit analysis; logistics services like shipping, warehousing, and inspection; and risk mitigation services like escrow and warranties. Partners like Skyway (time-definite logistics), PayLinx (enterprise payment servers), iEscrow (escrow), eCredit.com (credit analysis), and USInternetworking (application hosting) help to round out the offering. In addition, each of these complementors are potential sources of referral revenues from the existing participant base.

Managing growth and diversification

Over time, the eHub will need to diversify beyond its initial choices of strategic position. These growth vectors can be along four key dimensions – *horizontal scope*, *vertical scope*, *offering scope*, and *mechanism scope*. Consider e-STEEL, a vHub specializing in the steel industry, the procurement process, using an exchange mechanism, and by largely outsourcing logistics services. On the horizontal dimension, eSTEEL could choose to add logistics tracking or investment recovery services. On the vertical dimension, it could choose to branch into the packaging vertical. On the offering scope dimension, it could choose to offer credit analysis or fulfillment services. The choice of the growth vector should be based on the relatedness of the new supplier and buyer base, the relatedness of the new business process, the relatedness of the knowledge and relationships needed to win in the new vertical or horizontal eHub, and the need for alternative market-making mechanisms within the current participant base. In some cases, the growth may be derived through partnerships and acquisitions.

Figure 3: Growth vectors for eHubs

Vertical scope
• Steel
• Plastics
• Energy
• Paper
• Construction
• Process automation
• Fulfillment
• Receivables
• Credit approval
• Inspection
Offering scope
Initial focus
• Procurement
• Marketing
• Logistics
• Human resources
Horizontal scope
• Catalog
• Auction
• Exchange
• Barter
Mechanism scope

HubCasting; Forecasting the evolution of eHubs

In conclusion, we offer some predictions of what the future holds for eHubs over the next one or two years:

1. *eHubs will have winner-take-all characteristics*: The strong increasing returns characteristics will create even more scale advantages for the first eHub to achieve scale and liquidity than in the consumer portal or eTail business. Even being the second-biggest player may not be enough.
2. *vHubs will find it hard to diversify beyond their verticals:* vHubs compete on domain-specific relationships and expertise. Unless they are able to find closely related domains where they can leverage these assets, they will find it difficult to diversify into other vertical markets.
3. *vHubs will form a patchwork of alliances with fHubs*: vHubs possess domain expertise but lack functional expertise. fHubs possess functional expertise, but lack domain expertise. This complementarity will result in a number of alliances across the "quilt" between vHubs and fHubs. In these alliances, vHubs will usually emerge as the ones that control the customer relationship.
4. *Software vendors will climb out of their silos*: Currently, software vendors sit in three silos that correspond to their market-making mechanism of choice – buy-side software vendors (e.g., Ariba and Commerce One), auction software vendors (e.g., Moai and OpenSite), and exchange platform vendors (e.g., TradeEx). The walls of these silos will break down, and a flurry of mergers and alliances between software vendors will ensue.
5. *Exchange models will evolve to include derivatives:* The exchange mechanisms in eHubs currently are limited to spot markets. As participants become more sophisticated and eHub

software platforms improve in functionality, eHubs will begin to offer derivative products like forward contracts and options on commodities and manufacturing capacity.

6. *All except the biggest firms will give up on hosting eHubs*: Early generations of B2B e-commerce software focused on catalogs, auctions, and exchanges hosted by individual firms. This firm-centric model limits liquidity, and will give way to catalogs hosted by eHubs.
7. *Metahubs may emerge with shared infrastructure and services*: Although vHubs will not consolidate across vertical domains, there is no reason for them to have dedicated infrastructure and supporting services. We may see the emergence of Metahubs – "malls of eHubs" with shared back-ends and common fHubs servicing the different "tenant" vHubs. These Metahubs may be operated by Application Service Providers.
8. *The power of conventional commodity exchanges will erode:* Conventional commodity exchanges are devoid of context. Therefore, they will find it difficult to compete with the powerful integration of context and exchange functionalities that eHubs will provide. They also lack business process integration capabilities. As a result, eHubs will gradually drain liquidity from conventional commodity exchanges.

Clearly, we are going out on a limb in making these predictions at a time when the landscape of Business-to-Business commerce is changing daily. However, if the recent successful IPOs of VerticalNet and Ariba are any indication, the Year 2000 might very well be the Year of the eHub. In any event, it would be refreshing if e-Commerce gurus moves beyond Amazon and Yahoo!, and finally gave B2B e-Commerce the attention it deserves.

New Architectures for Web-enabled EDI-Applications and their Impact on VANS[*]

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Abstract

While the benefits of EDI (Electronic Data Interchange) and its integration into related business processes are widely recognised, the diffusion of EDI and its adoption especially by small and medium-sized enterprises is far behind the expectations. Various reasons can be given for the slow adoption, such as

- lack of awareness,
- lack of support from business partners and application software providers,
- complicated standards and lack of approved messages,
- lack of convincing cost-benefit analysis,
- complicated data transmission and high cost of communication services.

We would like to start with the last argument and illustrate how the diffusion of Internet services will affect communication costs and in the second line the proliferation of EDI itself. Moreover, the structural features of Internet services lead to the development of new architectural concepts for EDI, in particular they allow a considerable extension of the initial usage scenario of EDI and thus affect cost/benefit calculations.

The analysis from a functional and user perspective is appended with an argument about the trends in the EDI services industry and the impact on VANS (Providers of Value Added Network Services).

The Web as platform for EDI solutions

> "The whole EDI service 'industry' is holding small and medium sized businesses 'hostage' to a needlessly complex, overformalized set of standards, and forcing possible EDI users to pay through the nose for costly and unnecessary VAN's.
> It's high time that the VAN's were removed from the picture, and that the internet be used to encapsulate and deliver EDI messages, just as the rest of the virtual world does with other types of information. A small business shouldn't have to have anything but some translation software and an internet account."
> User statement posted at the EDI list (EDI-L)

While the market for EDI services has not fulfilled the expectations of VANS, they have nevertheless or even in response to the relatively small transaction volume charged fairly high prices for their services, such as data transmission, storage of communication profiles of business partners, security, file conversion and traffic analysis. Outsourcing the communication and conversion part of EDI to VANS has become a convenient yet expensive solution. As communication costs are the biggest part of variable EDI transaction costs, companies have started to look for alternatives to VANS for the transmis-

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sion of EDI messages. The following cost comparison between VANS charges and Internet-based EDI underscores this finding:[1]

A scenario by Richard Hornback posted to EDI-L

World of Widgets (WOW) is planning to use a VAN for its EDI communication. The Value Added Network which WOW is planning to use can connect to all trading partners either directly on the VAN or through interconnects with other VANs.

- Cost of setting up its account with the VAN, its mailbox, and connections to its 15 trading partners at $500, depreciated over five years at $100 a year.
- Communication cost per EDI transaction will be $1.50. For 135 transactions per week, the yearly cost of exchanging these transactions is estimated at $12,000.
- Cost of adding a 9600 baud modem to AS/400 is estimated at $1,000, depreciated over 5 years for $200 a year.

The yearly total estimated communication costs for EDI is $12,300.

Comparing this to the cost of one of the commercial internet service providers in San Jose, CA:

- Setup charge (including domain name registration): $35
- Monthly fee: $20
  - UUCP email and news up to 100MB/mo (additional $15 for >100MB/mo)
  - WWW service at T1 speed (1.5MB) for 5MB (~2000 Web pages) with an own Web address www.domain.name)
  - Automated mail servers (very low usage charge)

Redundant feeds to two separate internet backbones.

Equivalent yearly cost: $35/5 + $20*12 = $247.

On the one hand expert opinions whether the Internet can be recommended for the transfer of EDI messages are split, on the other hand the development of required technologies and services is in full swing (e.g. Houser et al. 1996). The paper discusses the potential impact of the Internet on the development and diffusion of EDI. We show that Internet services - beyond communication cost reductions - offer different application scenarios for EDI focused on business-business applications. We expect, however, an extension of EDI into the realm of electronic retailing.

As the development of EDI has been largely influenced by VANS we will scrutinise current changes in the EDI VANS industry in response to Internet services and new architectures..

Comparison of traditional and emerging EDI applications

Based on the illustration of stylised traditional VANS-based architectures and a discussion of their underlying business scenarios we will sketch Internet-based EDI solutions and emerging forms of electronic commerce.

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[1] Although the scenario is hypothetical, it gives an overview of cost categories and realistic assessment of respective cost levels.

VANS-based architectures

Figure 1 shows two commonplace EDI architectures (Klein 1995, Klein/ Lindemann 1996):

a)
Application
Con-
verter
Network
(VANS/ Telcos)
Con-
verter
Application
b)
Application
Con-
verter
Network
(VANS/ Telcos)
Con-
verter
Windows-
Application

Figure 1: VANS-based EDI Architectures

Architecture (a) sketches the first EDI scenario in the form of traditional EDI implementation with converters used by both communication partners and communication services provided by VANS or telecommunication companies. The costs for setting up such links are fairly high. To establish a reliable and secure communication link, negotiate the interchange agreement and integrate the incoming data into internal databases and application environments accounts for the major cost factors. High volume business transactions which can be mostly automated, such as just-in-time links in supply chains, provide the rationale for this solution. However, for many, especially small and medium-sized enterprises (SMEs), high volume transactions are the exception rather than the rule. And even for big companies, high volume transactions account only for core functions and a limited number of business partners.

The extension of EDI beyond that group in order to leverage the benefits of an universal standard for all types of functional areas (from procurement to marketing) requires differentiated solutions. In order to lower the entry barrier for SMEs, different client programs were developed which provide a forms-based interface (b). The data were then converted e.g. into EDIFACT (Electronic Data Interchange for Administration, Commerce and Transport) and transmitted via a preconfigured communication link. Examples for this variant are DanzLink, a program to generate EDIFACT export orders and customs notification (Cathomen et al. 1995) developed and distributed by Danzas, a leading Swiss freight forwarder, and TeleCounter, a prototype for a financial client software for SMEs and private customers (Schmid et al. 1995, 27-29). While these solutions provide little assistance for the integration of incoming data and the export of data from existing applications (TeleCounter provides API's and import/ export formats), the user is not bothered with the conversion of data which is done transparently. These solutions represent a second EDI scenario: low-cost and simple or simplified access e.g. to EDIFACT with little or no assistance for internal integration of EDIFACT messages for smaller business partners. At the same time, the sponsors[2] run the traditional EDI model for themselves and with larger partners. The rationale for Danzas to develop and offer DanzLink to its customers - and a software license to the Swiss freight forward association - was to accelerate the diffusion of EDI among their small and medium sized customers and thus increase the proportion of incoming EDIFACT export orders. Despite a positive response from their customers, less than 200 copies have been sold and the maintenance of this solution is quite expensive.

For both business scenarios the proliferation of Internet services provides a chance to reach further business partners and to lower the costs.

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[2] In many EDI applications there is a distinction between the drivers or of EDI application, often larger companies with a profound interest in EDI, and the followers or adopters. We will refer to the drivers as "sponsors" and to the followers as "adopters" (cf. Cavaye/ Cragg 1994).

Emerging Internet-based architectures

As a result of the dissemination of Internet access points and services, more and more trading partners can be reached over the Internet. Recently, EDI applications based on several Internet services have been announced and pilots are currently under evaluation.

Internet communication services for the EDI message exchange

Two Internet services can be used to transmit EDI messages (cf. Lindemann 1996):

(1) Different Internet services can replace X.400/ X.435 or similar store & forward protocols to transmit EDI messages. Based on the Internet mailing protocol (SMTP) the paper *MIME Encapsulation of EDI Objects* specifies the necessary instructions to identify EDI body parts and to pass on EDI data to EDI business applications (Crocker 1995).

(2) When transmission time and immediate confirmation of the receipt of the messages is an issue, the Internet file transfer protocol (FTP) which is similar to FTAM (File Transfer, Access and Management), may be used to exchange EDI files between trading partners. FTP, however, requires additional agreements among the partners about access rules, directories etc.

The number of potential communication partners that are already hooked up to the Internet as well as substantial cost savings have motivated even big players like NASA to use Internet services (cf. Communications News; May 1995, 61) despite its anarchic nature and existing security risks. These risks require considerable attention and counter-measures in order to avoid negative effects on business relations (cf. Borenstein 1996, 42).

Application platform World Wide Web (WWW)

Similar to the forms-based architecture described above, WWW-based client programs provide user friendly graphical interfaces to gather EDI-related information. The conversion e.g. into the EDIFACT format takes place on either the server or the client side. While the usage of SMTP or FTP only affects data transmission, World Wide Web applications which use HTTP (Hypertext Transfer Protocol) either based on Web forms or with intelligent Web clients lead to far-reaching changes of the EDI application architecture.

a)
Application
Web server
+ Converter
Internet/
World Wide Web
Web
forms
b)
Application
Web server
Internet/
World Wide Web
Con-
verter
Java/ ActiveX-
Application

Figure 2: New Web-based EDI-Architectures

The first architecture (a) depicts easy-to-use and cost-saving EDI clients on the basis of the WWW technology. The only requirement for the user is an Internet account and an installed Web browser. From the sponsors' point of view, e.g. logistics companies or banks, this architecture supports the diffusion of EDI (cf. Roche 1996). The adopter, however, has little control over the conversion, it may be difficult to fulfil legal documentation requirements and is left alone with the integration of the Web forms into his internal applications.

The TeleCounter architecture described above is transferable to Java or ActiveX applications for the World Wide Web (b). In addition to data representation and conversion these applications provide functions on the client side, e.g. local databases for frequently used information about carriers, pick-up and delivery addresses. By shifting a part of the EDI application logic to the client, the server can be relieved from the computation for data conversion and the client retains a higher degree of flexibility and control over the data conversion. In case of a Java solution, a dynamic loaded Java applet is responsible on client computer for converting the client information into the EDI message format. The converted data are send via HTTP to the sponsor's Web server and forwarded to (established) sponsor's business application.

Either of the two architectures will enable companies like Danzas to proliferate EDI interfaces and applications to their customers more easily and at less cost. The relative advantage of the architectures depends on the functional requirements (flexibility, allocation of computing load etc.) and on organisational considerations.

Design of Web-based EDI commerce applications

Following, we will explain the proposed architectures in more detail and exhibit a hybrid systems architecture which integrates EDI into a broader setting of Internet services for electronic commerce. This hybrid architecture reflects the extension of the EDI application scenarios.

Forms-based server applications

With HTML (Hypertext Mark-up Language) Web forms can be developed which are provided to adopters with Internet access and Web browser. The browser functions as an interface to the sponsor's business applications. Requested and completed Web forms are sent from the client to the server. The HTTP server passes the data either through special interfaces or server APIs (Application Programming Interfaces) on to an external server program, so called script, or to a dedicated server daemon (e.g. R/3 Internet Transaction Server). This EDI server application module translates the form data and forwards them to sponsor's EDI business application. Finally, the script sends a transaction confirmation in form of a dynamically generated HTML page through the Web server back to the browser.

A Web/ EDI program is a script, which provides pre-defined order forms to the client, accept the filled out forms and convert the gathered information on server side into the agreed EDI standard format. In this way trading transactions are noted and data are passed on to the EDI business application. Figure 3 shows the basic structure of such an popular ("shopping") application.

Web browser
Application Part
TCP/IP
Communication Part
INTERNET
Data Transmission
Web server
HTTP-Daemon
TCP/IP
Communication Part
EDI Business Application
W E B - E D I
Communication
EDI Converter
Validation
Application
HTML Document
HTML Document
HTML Document
HTML Document
Profile
Products
State
T
T
Transient

Figure 3: Forms-based Web/ EDI Application Structure

The communication between Web client and Web server takes place by means of HTTP based on the packet switched TCP/IP protocols, that is, the communication is based on client request and server response. The interaction with the server is stateless. Therefore, if an application consists of more than one form, temporary state data are necessary to save the current session state and to include order and customer information as well as application specific information, e.g. to initiate the following program step. State data are deleted after placing an order or after a particular time-out. The profile data specify supplier and/or customer preferences. Product data specify the related product information. Generic HTML documents stored on the server are independent of customer, session and supplier specification. Pseudo code is used for situation specific adaptations. Before these pages are sent to the client this code is translated to standard HTML which than includes current information about status, profile and products. After validation and conversion of received data the script forwards the form data to the EDI business application. Transient files are necessary for processing form pages if external programs were used for this actions. These files communicate with the external programs and are deleted after processing.

The major advantage of this client/ server architecture is the centralised data and application management. Information can be selected on the server side and data as well as functions can be linked to user profiles. Furthermore, server components can change without affecting the client application. That is, the adopter doesn't need a business partner specific application. He is able to use a standard Web browser of his choice. However, integration into internal business applications may be cumbersome for the adopter, in particular as he has no say over the design and future design changes of the interface. Innovative (multimedia) extensions like 3D data representation can easily be added. The portability of these applications provides advantages over proprietary solutions.

Intelligent Web clients

In contrast to the forms-based approach, the development of stand-alone applications with intelligent Web clients requires higher technical skills: software engineering with experienced programming expertise is necessary rather than tool-based HTML "painting". Due to the allocation of more application logic on the client, the server can be relieved e.g. from the computation for data conversion. With Java applets or ActiveX controls, portable, dynamic objects are responsible on the client computer for dedicated functions, e.g. message translation. This programming scheme will abbreviate application development and deployment through prototyping, code reuse, and easier testing. Applications are adaptable to changing environments because users dynamically download program objects - or modules - from Internet sites. Users with Java or ActiveX enables Web browser gain more flexibility, more functionality, and better geared graphical user interfaces for higher usability of Internet-based services. This effect will be intensified when traditional operating systems and these techniques melt together. The following description is based on the Java development environment and related technologies. ActiveX is left aside because of its proprietary character - only Microsoft Windows platforms are supported - and its current limited dissemination. Figure 4 shows a Java implementation of the architectural concepts described in the previous chapter (cf. Kramer 1996).

Web browser
Application Part
Embedding HTML
(received from server)
Java (EDI-)Applets
(dynamically downloaded)
Application
Validation
EDI Converter
Java API's
Java Virtual Machine
(with access to local databases)
TCP/IP
Communication Part
EDI Business Application
Communication Module
Web-Server
HTTP Daemon
Wed server Application
(with downloadable client objects)
HTML
Document
Java
Applet
DB1
DB2
DBn
TCP/IP
Communication Part
INTERNET
Data Transmission

Figure 4: Applications with intelligent Java-based Web clients

The Java platform

The Java platform is a new software platform for delivering and running dynamic applets and/ or applications on networked computer systems. It resides on top of the common application platform. Compiled, platform independent bytecodes are machine instructions for a machine dependent Java virtual machine. That is, a program object which is written in the Java language and compiled to a bytecode file can run on any operating system that is running the Java platform. The two basic Java platform parts are the Java virtual machine and the Java application programming interface (Java API). Combined, these two parts provide an end-user runtime environment for deploying Internet applications.

- The *Java virtual machine* is an abstract software machine which can be implemented in software (e.g. "JavaOS") or hardware (e.g. "JavaChip") on top of existing processors. Particular porting interfaces and adapters support portability and therefore further dissemination.
- The *Java API* is the essential framework for application development. It forms a standard interface to applets and applications, regardless of the underlying operating system, and provides interfaces for basic operations like I/O, network, GUI and more complex one for multimedia or electronic commerce solutions.

Implications for the diffusion of EDI and the role of VANS

While the Web and in particular Java provide the technology for new applications, new services and new architectures, the implications the technology will have on the emergence of EDI on the one hand and on the role and functions of VANS is not yet clear.

Extended EDI scenarios

Classic EDI applications (cf. Figure 1) focus at an application-to-application link and need high transaction volumes and a high degree of automation in order to be cost-efficient (e.g. Klein 1996, 62). Examples for successful EDI applications are just-in-time logistics concepts in the automotive industry, continuous replenishment solutions in the grocery sector or inter-bank transactions. However, this business scenario does not fit in many cases, especially where companies target a broader functional scope and where SMEs are involved.

In contrast, the emergence of Web technology from static HTML pages to interactive applications with links to internal databases has opened up the scope of applications towards more comprehensive support of business transactions including semantically rich product representations (Schmid et al. 1995; Baty/ Lee 1995), technical specifications, interactive customer support, order and feedback forms, payment functions, and email interfaces. Client/ server technology with Web browsers as standardised intelligent clients provides an environment to develop versatile and flexible inter-organisational applications (Kalakota/ Whinston 1996).

The multiplicity of functions and services addresses a much broader scope of business functions than EDI ever meant to cover. In particular they are not limited to automate application-to-application links but provide interfaces to informate (Zuboff 1988) the relationship with business partners and customers. However, the organisational integration will remain a difficult and resource-intensive task. The main characteristics of the Web EDI scenario are:

- the communication scenario includes human-to-application links as well as application-to-application,
- EDI becomes an integral part of a much broader set of electronic commerce applications which cover areas like marketing and customer support,
- internal integration and automation are maintained wherever possible and functional.

While the diffusion of EDI-related software products such as converters was slow and software developers hesitated to integrate EDI functionality into business software, Internet technology has already become pervasive. As a result, low-cost software products are becoming available that allow a relatively easy entry into this field. The foreseeable competition will yield a broad stream of high-quality products at reasonable prices. Virtually all major software companies are working to integrate Web technology. The availability of integrated solutions is just a matter of time.

New roles and new businesses for VANS

The Web as an electronic market space provides opportunities for disintermediation. With respect to VANS specialised on EDI this might mean a loss of business. However, we expect a growing salience of cybermediaries, inter*mediaries* in *Cyber*space (Sarkar et al. 1995), even in the field of EDI related service, however with an adapted service profile which puts more emphasis on application development and integration:

Building and maintaining Web server and client applications

Although the Internet provides an easy access to electronic commerce, the complexity of advanced WWW EDI applications as depicted above, requires more technical know-how than many EDI sponsors have today. Moreover, initial experience with Internet applications indicate that technical pitfalls in the anarchic environment require Internet-savvy customer service departments (cf. Borenstein 1996, 40). The extension of EDI applications to a broader group of business partners, many of them with only limited technical expertise, requires even more attention.

Consequently, new business segments are emerging for those service providers that are able and willing to adapt to the requirements of this application environment: solutions in general are more open, the adoption of new technologies is extremely fast and the price level for software is generally lower than in the traditional EDI world.[3]

Building extended electronic commerce services

For most companies, WWW EDI will be an integral part of a broader electronic commerce application, such as inventory control and order management systems with Web (EDI) interfaces. The set-up of electronic commerce services and their integration into the existing application environment amounts to a second business segment.

New structures of electronic commerce on the Web, in particular the emergence of electronic malls, which host numerous Web sites and provide generic functions like navigational, payment, EDI and security services. These services can be jointly used by different principals and reduce the complexity of electronic commerce for the customers (Schmid et al. 1995). The provision of such generic services or even the set-up and maintenance of electronic malls is a third business segment.

Security services

The Internet is notorious for security breaches and many experts warn against using the Internet for doing EDI. Currently two main responses towards the security risks are pursued:

(1) Peer-to-peer security mechanisms, e.g. based on public key encryption, are used.[4] However, the application of theses mechanisms in an open market requires institution which are responsible for key management and distribution, so called Trust Centres - a fourth business segment.

(2) In order to guarantee delivery times and to exert control over the communication infrastructure, virtual private networks (VPN), sometimes called Extranets, are set-up which use the Internet protocols. The maintenance of such VPNs amounts to fifth business segment.

These are just a few examples which underline the emergence of new business segments for EDI service providers. Table 1 may give some examples on how VANS open up new Internet-based business segments. However, Internet related services are a different playing field with different rules of business and new players are heading for these segments.

GETradeWeb of GE Information Services *http://www.getradeweb.com/*

- Forms-based, entry-level EDI service for SMEs
- Provides generic or customized form templates
- Directory service to find (TradeWeb) trading partners
- Mailbox services with Web front-end

DynamicWeb of DynamicWeb *http://www.dynamicweb.com/*

- Hosting services and build up of Web-based online storefronts
- Document routing between VANS and Internet
- Tracking services of order and shipping status
- Gathering of Web-forms data and forwarding to supplier's EDI application

CommercePOINT of IBM *http://www.internet.ibm.com/commercepoint/*

- Internet-based end-to-end service for wholesalers and manufacturers

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[3] Initial products are for example GE TradeWeb, http://www.getradeweb.com/ or IBM CommercePoint, http://www.internet.ibm.com/commercepoint.

[4] Products are offered for example by RSA (http://www.rsa.com), Premenos (http://www.premenos.com) or VeriSign, http://www.verisign.com/).

• Services for creating Web-based virtual storefronts • Services to operate electronic malls • Support of secure credit card transaction and registration services for authentication
TEMPLAR of Premenos *http://www.templar.net/* • TCP/IP-based end-to-end service • Suite of software, service, and network solution based on SMTP/MIME (mail) • Authentication agent ensures data integrity, authentication, and non-repudiation • Supports EDIFACT and X.12
AT&T WorldNet of AT&T *http://www.att.com/worldnet/* • Intranet connection service for closed user groups with secure intranet access • Directory services "Business Buyer's Guide" and "Shopper's Guide" • Conferencing services for virtual meetings with video, voice, and data • Dial-up Internet access for consumers or dedicated access for businesses
BlueWindow of SwissTelecom *http://www.bluewindow.ch/* • Electronic mall with virtual storefronts • Consulting services for Web publishing, Web marketing, Web hosting etc. • Closed-user groups for business-to-business communication, club administration etc. • Dial-up Internet access with starter-kit software packages

Table 1: Overview of some new Internet-based services offered by VANS

Conclusions

The diffusion of EDI-based inter-organisational systems (IOS) has been hampered - among many other reasons - by its complexity, dedicated infrastructures and limited scope of its usage. The examples given show that

- the public awareness,
- the rich potential of application areas and cheaper software,
- combined with state-of-the-art technology
- at a low entry price

provides the platform for an accelerated diffusion of electronic commerce in general and EDI in particular. However the emergence of the Web may become a mixed blessing for the diffusion of traditional EDI based on the exchange of standardised EDIFACT or ANSI X12 messages as many future users may opt for bilateral or proprietary Web-based solutions. At the same time, many warn companies to use the unsecure Internet for the transmission of EDI messages.

"The death of EDI?"

With the diffusion of commerce applications on the Web, the conversion into EDIFACT or other EDI message standards can be obsolete. Instead of converting the data, a direct database access is provided and specific server interfaces are used to connect a HTML-based Web application with the business database. A well known example of such an application is the World Wide Web-based FedEx-Tracking System (http://www.fedex.com/). Some consulting companies already predict the demise of EDI.[5] Based on our research we would however expect a wider diffusion of EDI for the following reasons:

- The Internet lowers entry barriers for EDI

  Lower costs and attractive Internet services intensify the dissemination of the Internet itself. Internet services are quickly becoming an easy to use low-cost commodity. Subsequently, EDI can be set-up within an existing, low-cost communication infrastructure.

  Unlike pure application-to-application EDI, Web-based applications provide an interface for human agents to make inquiries or to initiate transactions. As a result, interchange agreements which are necessary for EDI can be linked to the Web pages and need not be negotiated up-front. Furthermore, standardised or harmonised terms of trade will facilitate the diffusion of (international) electronic commerce. Several initiatives like the CommerceNet have been started to develop adequate solutions.

  EDI functions best within business communities. For many companies the Web has become a community builder and enabler for cooperation: it lowers the threshold for cooperation and allows the coexistence of cooperation and competition. The combination of a fluid and dynamic medium which encourages trials and low initial investments helped to overcome prior obstacles to develop an IOS.

- The Web enables the integration of EDI into a multiplicity of services

  The plurality of services available on the Internet enables all types of players to develop customised electronic commerce applications. The easy-to-use, state-of-the-art (object-oriented, hypermedia, client/ server etc.) technology lowers the entrance barrier especially for SMEs and provides a much broader potential customer base. Electronic commerce on the Web covers and integrates a broad range of interrelated applications from retail, to business-to-business and intra-organisational applications.

- Differentiation of interfaces on the adopter side

  The different architectures that we have depicted enable EDI sponsors to support different adopter interfaces in order to facilitate the proliferation of EDI and a receive higher volume of standard messages. In this way, adopters can respond to different customers/ adopters needs and at the same time maintain just one internal interface for the integration of incoming messages.

Pitfalls of Web EDI and the role of VANS

While the Internet is not suited for time-critical transactions yet (e.g. financial sector), it is an economical alternative for many companies who want to cut their communication costs on the one hand and who are looking for more comprehensive electronic commerce solutions. However, security concerns, the anarchic nature of the Internet and increasing complexity of commerce applications will lead more and more companies to look for professional assistance.

This will lead to a growing number of business segments which might be covered by VANS which have been active in the area of EDI before. However, they will have to learn new rules of the Internet game and will face competition from new players.

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[5] E.g. Forrester Research, cf. http://www.forrester.com.

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EVALUATING THE PERFORMANCES OF ELECTRONIC COMMERCE SYSTEMS

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ABSTRACT

Electronic commerce over the Internet is a new concept. In recent years, several companies, including CyberCash, DigiCash, First Virtual, and Open Market started to provide a variety of electronic commerce services. To be successful, these services must meet their customers' needs. The purpose of this paper is to propose a general simulation model that can be utilized to evaluate the performances of various electronic commerce systems in meeting their customers real time access and responsiveness needs.

1 INTRODUCTION

The exponential growth of the Internet and the World Wide Web (WWW) created a new type of commerce: electronic commerce (E-commerce) on the Internet. E-commerce on the Internet is the exchange of goods, services, and information for money using the Internet capabilities. There are many forms of E-commerce: virtual shopping malls, electronic bill payment services, and electronic newspaper stands, to name a few. The volume of E-commerce on the Internet is expected to grow very quickly in the next few years, and according to some estimations it will reach 600 billion dollars by the year 2000 and 1250 billion dollars by the year 2005 [Lynch and Lundquist, 1996].

Currently, the most common E-commerce payment method is by credit cards, but the use of credit cards for this purpose has several deficiencies: credit cards are not suitable for micro payments (payments of less than $5, such as buying a single copy of an electronic newspaper), and without additional security measures, credit cards do not provide an adequate level of security. To address these issues, several companies have begun to provide a variety of electronic commerce payment services: CyberCash provides secured money transactions using alternative payment methods (credit-cards, digital checks, and digital coins); DigiCash provides a service that enables its users to transfer money into electronic cash in the form of encrypted electronic mail messages; First Virtual uses electronic mail to process debit transactions; and Open Market uses credit cards with additional security (PIN, passwords, and encryption).

2 A TYPICAL E-COMMERCE SYSTEM

2.1 E-Commerce System Architecture

The typical architecture of an E-commerce system consists of three major components: a "digital wallet" application which is connected to a WWW browser, and is installed on the customers' PCs; an "electronic store" application which enables the transfer of funds via the Internet; and a central processor application system which tracks and controls the transferred funds and provides access to banking institutions that are not directly linked to the Internet. In addition to that, the customers are connected to the Internet via Internet Service Providers (ISP). The E-commerce system architecture is shown in Figure 1.

2.2 E-Commerce System Operations

The communication between the different components of the E-commerce system is accomplished using a set of pre-defined messages.

For example, to buy a certain product using a credit card, the customer uses a WWW browser to reach the merchant web site. After the customer selects a product or service, he or she initiates the transaction by sending a C1 message to the merchant. Next, the merchant sends a C2 approval request to the Central processor. After the customer details are validated, and the transaction is executed, the Central processor sends a C3 approval message back to the merchant. Finally, the merchant completes the transaction and sends a C4 acknowledgment back to the customer. The primary E-commerce messages are listed in Table 1.

Customers
Merchants
ISPs
The Internet
Financial Institutions
E-Commerce Processor
Customer Service

Figure 1: E-Commerce System Architecture

Table 1: E-Commerce Messages

Type	Description	From	To
R1	Register new user	Wallet	Processo
R2	Approve	Processo	Wallet
M1	Move funds	Wallet	Processo
M2	Approve transfer	Processo	Wallet
B1	Initiate cash sale	Wallet	Merchan
B2	Request approval	Merchan	Processo
B3	Approve cash sale	Processo	Merchan
B4	Finalize cash sale	Merchan	Wallet
C1	Initiate credit sale	Wallet	Merchan
C2	Request approval	Merchan	Processo
C3	Approve credit sale	Processo	Merchan
C4	Finalize credit sale	Merchan	Wallet

2.3 Digital Cash

E-commerce cash transactions are executed using digital cash. Digital cash is the most promising alternative to credit card payments on the Internet, especially for micro-payment transactions. Digital cash is a pointer to money that an E-commerce customer transfers from either a bank account or a credit card into an escrow account. When the customer pays with digital cash, the paid amount is transferred from the customer's escrow account to the merchant.

2.4 The E-commerce Messages Structure

Each message consists of multiple fields (typically between 10 and 50). These fields vary in size between 1 byte and 256 bytes. Each message has a unique transaction number field and a time tag field in addition to the fields that hold the relevant information about the customer, the transaction, and the merchant. There are three types of fields: mandatory (such as credit card number), optional (such as second address), and conditional. The conditional fields enable the use of the same message type for various purposes, for example, using the same M1 message to transfer money from either a bank account or a credit card into a customer's "digital wallet."

2.5 Processing Time

The system central processor validates and processes all the transactions, and records them in a database. Similarly, all the transactions that are sent to a specific merchant are being validated and recorded by the merchant's application. The actual processing time depends on the central processor hardware and software implementation. Additionally, in order to provide an acceptable level of security, the messages are encrypted. In the context of this discussion, the only impact of encryption is additional processing time.

3. ASSUMPTIONS

The following assumptions are made about E-commerce systems and their operations:

1. On average, the E-commerce customers generate 10 transactions per second.
2. All of the E-commerce customers can be represented using a single computer group.
3. The E-commerce merchants can be represented using three user groups, based on their business: product merchants, information merchants, and service providers.
4. The response messages from information merchants to their customers contain the requested information as encrypted attachments. Consequently, these messages are significantly larger than the other messages in the E-commerce system (up to several megabytes).
5. The messages generated by the E-commerce system customer service department may be excluded from the preliminary simulation since their volume is relatively small.
6. The messages inter-arrival time has a negative exponential distribution with mean λ.
7. In order to provide an acceptable level of security, the messages are encrypted. In the context of this

discussion, the only impact of the encryption and decryption processes is an additional processing time.

4 SIMULATING E-COMMERCE

4.1 The E-commerce system model

The proposed E-commerce system model consists of two models: a model of the E-commerce network and a model of the E-commerce user profile. The E-commerce network model is shown in Figure 2. It consists of a single computer group that represents the customers, three separated computers groups that represent the three different types of merchants (product, service, and information), and the E-commerce processor. These components are connected through the Internet. An additional computer group that represents financial institutions is directly connected to the E-commerce processor via a private network.

Figure 2: E-Commerce System Model

The detailed design of the simulation requires detailed specification of the various messages, their sizes in bytes, their inter-arrival times, and a definition of the time it takes to process each type of message. The E-commerce users profile model consists of multiple scenarios. These scenarios describe the customers' generated message distributions, their processing times, different message destinations, different digital cash and credit card transaction distributions, and a variety of Internet delays. Table 2 illustrates the contents of these scenarios.

4.2 Quality Of Service (QOS)

In order to evaluate and interpret the simulation results we need to select a set of Quality Of Service [QOS] parameters. According to a recent survey that was conducted by ORC for MCI, the primary QOS parameters for Internet users are: Real time access, Responsiveness, and Reliability. The following QOS parameters represent these requirements:

- The E-commerce system blockage probability
- Time to complete new customer registration
- Time to complete a money transfer
- Time to complete a digital cash transaction
- Time to complete a credit transaction

Table 2: Typical Scenarios

Parameter	Scenario 1	Scenario 2
B1 interarrival time	0.2	0.2
C1 interarrival time	0.2	0.2
% of product trans.	***25***	***33***
% of service trans.	***25***	***33***
% of information trans.	***50***	***34***
% of digital cash trans.	60	60
% of credit cards trans.	40	40

5 APPLYING THE SIMULATION MODEL

5.1 When To Apply Simulation

Simulation should be applied through the E-commerce system life cycle, beginning with a crude simulation model in the design phase, and enhancing this model as we collect more data about the actual processing times and the delays in the system.

5.2 Selecting a Simulation Tool

The process of selecting a simulation tool was discussed at length by the author in a paper that was presented at the 1996 WSC [Yarden, 1996]. In order to shorten the distance between research and application, and to focus on the E-commerce system rather than on the development of the simulation environment, it is recommended to use a Commercial On The Shelf (COTS) communication simulation package, such as CACI's COMNET III ®.

COMNET III is a discrete-event communication networks simulation environment that contains pre-defined hardware, protocol objects, and built-in graphics and reporting. COMNET III has two built-in functions that are particularly relevant for this application. One is the response message capability that makes it very easy to simulate cascades of events. The second function is the ability to capture actual communication loads using standard communication probes (such as HP OPENVIEW) and feed them back into the simulation. For more information about communication network simulation tools in general and COMNET III in particular, the reader is referred to two papers that were presented in the 1995 WSC [Law and McComas 1995, Jones 1995].

6 CONCLUSIONS

This paper describes a proposed simulation model of an E-commerce system. One of the primary parameters that define the QOS of an E-commerce service is its typical response time. Discrete event simulation can be used to evaluate and project typical response times and delays in E-commerce systems.

The proposed simulation model consists of a model of the E-commerce system network and a model of the E-commerce system user profile. In this model, customers generate request messages that are sent to the system central processor and to the electronic merchants via the Internet. The system central processor and the electronic merchants process the customer requests and send appropriate response messages. In addition to that, the system processor sends messages to financial institutions.

The detailed design of the simulation requires a specification of all the various messages and of the corresponding processing times. Such a model can be easily implemented using a COTS network simulation tool such as COMNET III .

A crude simulation model should be developed in the early phases of an E-commerce system design and implementation. As the E-commerce system expands, a higher fidelity simulation model can be developed using actual measurements.

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STRUCTURE AND MACRO-LEVEL IMPACTS OF ELECTRONIC COMMERCE: FROM TECHNOLOGICAL INFRASTRUCTURE TO ELECTRONIC MARKETPLACES

VLADIMIR ZWASS

Abstract

Electronic commerce (E-commerce) is sharing business information, maintaining business relationships, and conducting business transactions by means of telecommunications networks. Traditional E-commerce, conducted with the use of information technologies centering on electronic data interchange (EDI) over proprietary value-added networks, is rapidly moving to the Internet. The Internet's World Wide Web has become the prime driver of contemporary E-commerce, which has been vastly broadened and redefined by the use of the new medium. The paper presents a hierarchical framework of E-commerce, consisting of three meta-levels: infrastructure, services, and products and structures, which meta-levels, in turn, consist of seven functional levels. These levels of E-commerce development, as well as of its analysis, range from the wide-area telecommunications infrastructure to electronic marketplaces and electronic hierarchies. The paper proceeds to discuss several nodal areas of E-commerce impact on the activities at the meta-levels. These impact areas are: integrating electronic payment into the buying process, building a consumer marketplace, moving supply chains and products into the marketspace, the governance of electronic business, and the new intermediation. A perspective for further analysis of these impacts is provided.

Key words and phrases: electronic commerce, information infrastructure, World Wide Web, electronic marketplaces, electronic hierarchies, supply-chain management, new intermediation.

I. Introduction: From Traditional to Internet-Driven Electronic Commerce

As electronic commerce is being redefined by the dynamics of the Internet, we wish to analyze the present structure of the enterprise defined by this term, and to look forward to future developments. We shall thus present a hierarchical framework for electronic commerce, within which we shall analytically survey the mutually reinforcing changes in the business practices and in the underlying information technologies.

Electronic commerce (E-commerce) is the sharing of business information, maintaining business relationships, and conducting business transactions by means of telecommunications networks. In today's business environment, where the operational boundaries between firms have become fluid, it is often both pragmatically and analytically unfruitful to separate the interorganizational business processes from the intraorganizational ones. Therefore, in our understanding, E-commerce includes the relationships and transactions between companies, as well as the corporate processes that support the commerce within individual firms.

Electronic commerce is a new and certainly trendy name, but the practice it refers to originated a half century ago in the Berlin airlift (Seideman, 1996). This practice became electronic data interchange (EDI), the computer-to-computer exchange of standardized electronic transaction documents. Although what can now be called traditional E-commerce has not been limited to EDI and has included business practices built around computer-to-computer transmissions of variety of message forms, bar codes, and files, the use of EDI has arguably led to the most significant organizational transformations and market initiatives (see, for example, Jelassi & Figon, 1994). Some of the well known cases in point are Wal-Mart, Levi Strauss, General Motors, and other companies that have built new kinds of relationships with their suppliers and customers through bilateral electronic linkages. Electronic integration, supported by EDI and other information technologies, drastically reduces time and space buffers that shelter a firm, but that also limit its competitive opportunities.

Electronic integration has led to dramatic shifts in the definition of a firm, with the emergence of virtual companies, whose capabilities to deliver their products to the market are defined largely by their ability to organize and maintain a network of business relationships, rather than by their ability to manufacture a product or deliver a service. Extensive business networks have been formed by relying on this form of integration; the local and global business communities using TradeNet in Singapore can serve as an example (and have done so - to the authorities of the Port of Rotterdam in The Netherlands, for instance). Entire industries are being radically changed; the U.S. grocery retailing, for instance, is being reshaped by the EDI-based Efficient Consumer Response initiative, expected to save tens of billions of dollars in the distribution channel ("H.E. Butt," 1994). To understand and rationalize the operations of an individual firm, it is now necessary to study the business networks in which the firm is embedded.

It is the arrival of the commercial use of the Internet, driven by its World Wide Web subset, that has been defining new E-commerce since 1993.[1] E-commerce now emerges from the convergence of several major information technologies and business practices. Among the principal technologies directly enabling modern E-commerce are: computer networking and telecommunications; client/server computing; multimedia, and hypermedia in particular; information retrieval systems; electronic data interchange (EDI); message handling and workflow management systems; groupware and electronic meeting systems; and public key cryptography. In a broader sense, all the major computer and telecommunications technologies, and database management in particular, undergird E-commerce. The set of technologies driving E-commerce is embodied (for a want of a better word) today in the Internet. This conglomerate is a transformational technology (in the sense of Fedorowicz & Konsynski, 1994) that has challenged old assumptions and helps shape new workplaces, organizations, and markets. The Internet offers an open platform for new E-commerce, removing the long lead times, asset specificity, and bilaterality of E-commerce based on the traditional proprietary EDI.

It would be entirely wrong to interpret E-commerce as a largely technological development. This way of doing business can be understood as the deployment of information technologies together with the organizational and management advances that pull the technology and are pushed by it in turn. Team-centered work organization with international teams working around the clock if desired, telework, moving products and operations to virtual value chains, demassing the firm by building it around core competencies, and transnational organizations are some of these advances. In the process of creative destruction described by Schumpeter (1950/1975), the use of transformational technologies challenges the pre-existing ways of doing business, of collaborating, and of competing. In a wider realm, the underlying technology of global, accessible, and non-proprietary connectivity changes many aspects of our life in the public and private domains.

The paper first presents a systematic view of the complex enterprise of E-commerce within a hierarchical framework, extending from the networking infrastructure to global marketplaces. It then analyzes some of the nodal impacts of E-commerce, relating them to this framework.. A number of open questions emerge from this analysis.

II. The Framework of Electronic Commerce

The Hierarchical Framework of E-commerce and Its Meta-Levels

The established way both to analyze and to develop very complex systems, such as that of E-commerce, is to structure them as a hierarchy of several levels, with each of the lower ones delivering a well-defined functional support to the higher ones. Such a hierarchical framework of E-commerce is shown in Table 1, updated from (Zwass, 1996). The framework will help us in the sense making and in our subsequent analysis of the impacts of E-commerce.

Table 1. The hierarchical framework of E-commerce

Meta-Level	Level	Function	Examples
Products and Structures	7	Electronic Marketplaces and Electronic Hierarchies	Electronic auctions, brokerages, dealerships, and direct search markets Interorganizational supply-chain management
	6	Products and Systems	Remote consumer services (retailing, banking, stock brokerage) Infotainment-on-demand (fee-based content sites, educational offerings)

			Supplier-customer linkages On-line marketing Electronic benefit systems Intranet- and extranet-based collaboration
Services	5	Enabling Services	Electronic catalogs/directories, smart agents E-money, smart-card systems Digital authentication services Digital libraries, copyright-protection services Traffic auditing
	4	Secure Messaging	EDI, E-mail, EFT
Infrastructure	3	Hypermedia/Multimedia Object Management	World Wide Web with Java
	2	Public and Private Communication Utilities	Internet and value-added networks (VANs)
	1	Wide-Area Telecommunications Infrastructure	Guided- and wireless-media networks

The framework recognizes that E-commerce consists of three meta-levels:

I. Infrastructure: the hardware, software, databases, and telecommunications that are deployed to deliver such functionality as the World Wide Web over the Internet, or to support EDI and other forms of messaging over the Internet or over value-added networks;
II. Services: messaging and a variety of services enabling the finding and delivery (on business terms, if desired) of information, including a search for potential business partners, as well as the negotiation and settlement of a business transaction;
III. Products and structures: direct provision of commercial information-based goods and services to consumers and business partners, intra- and interorganizational information sharing and collaboration, and organization of electronic marketplaces and supply chains.

We shall now proceed to discuss the individual levels that constitute these three meta-levels, to examine the impacts engendered by their functions later on in the paper.

Technological Infrastructure

The first three levels of the hierarchical framework are the technological infrastructure of E-commerce. The foundation is the intermeshed network of wide-area telecommunications networks, extended by the metropolitan and local-area nets. Deploying both guided (such as the fiber-optic and coaxial cable) and wireless transmission media (such as the satellite microwave and the radio) under computerized control, these networks span the globe. Thus, E-commerce is inherently global. Yet there are, and will persist, major differences in national and regional development of the infrastructure, as well as in the national governance of telecommunications, with government monopolies in a number of countries limiting the development and imposing high telecommunications costs. In Europe and, to a degree, in Latin America a movement toward privatization has produced, or is expected to produce, beneficial effects on prices and services. In salutary cases of government intervention, such as that of Singapore, national development programs support the development of E-commerce. The inadequacies of the telecommunications infrastructure in many developing countries make it impossible for them to partake of the benefits of E-commerce and perpetuate their underdevelopment (Dutta, 1997).

The telecommunications capabilities are delivered for business use through two essential means. The older order is that of proprietary value-added networks (VANs), established by vendors to deliver services over and above those of common carriers that are licensed by governments to provide communications services to the public. The new order is that of the Internet, which has become the principal vehicle of E-commerce. The history of the almost organic emergence of the today's Internet from its U.S. Department of Defense-sponsored origins as a network for research support is well known. The salient features, conditioned by the development trajectory of this *de facto* global information infrastructure are: easy and relatively inexpensive public access in the more developed countries of the world; absence of centralized control and the consequent organic growth combined with the limited security, reliability, and bandwidth; reliance on an open and simple packet-switching protocol suite (TCP/IP), and thus the ease of linking in additional networks with routers, with the standardization managed by the Internet Society and its subsidiary bodies, such as the Internet Architecture Board.

The Internet has become the driver for E-commerce thanks to the invention of the World Wide Web as a principal means of sharing information and of the browser as the universal front end. The Web has turned the Internet into a global, distributed, and hyperlinked multimedia database. By relying on the client/server architecture, the Web further builds on the decentralized model of the Internet. It is easy to join and it is easy to organize an information space for a small or a very large group. Internet communities can carve out and shape the space that suits their purposes (Armstrong & Hagel, 1996). The Web can serve as a medium for presentation, distribution, and use-based sale of passive or active (in the sense of software) information objects. Specialized platform-independent programming languages, such as Java, facilitate making the electronic pages of the Web into a source of active software objects. It needs to be seen clearly that, as a separate and software-based layer, the Web can and may be replaced in the future by an information management mechanism that would better meet the demands of very-large-scale use of the global network of networks.

Services: Enablers of Business Communication and Commerce

The meta-level of services consists of provision of secure messaging and of enabling services for E-commerce. Taken together, these services provide the *business* infrastructure for E-commerce.

As opposed to the traditional, EDI-based, E-commerce relying on secured private VANs, the public communication utility of new E-commerce is based on the TCP/IP protocol suite that was developed to share information freely rather than to underlie a marketplace. The fundamental security flaws in the Internet infrastructure include the ability of any computer that lies on the path of a communication between two parties to eavesdrop (and potentially be a tool in stealing information such as a credit card number), the absence of authentication of the communicating parties (making impersonation at either end possible), and no precautions against altering the contents of message's packets (Bhimani, 1996).

Secure messaging for business transaction processing has to feature the following attributes: confidentiality (generally accomplished through encryption, but secure key logistics remains a problem even in the public key systems); message integrity (achieved with hash totals or similar tokens accompanying the message); authentication of both parties (generally via a digital signature and possession of a private key); and nonrepudiation by either party (achieved through a combination of the means mentioned before). Some transactions require additional attributes; thus, generation of electronic cash requires anonymity of the receiving party (accomplished with a blinding factor during the encryption).

Considering the limitations of the Internet's protocol suite, the attributes of secure messaging have to be provided by other means, and the organization's own information systems are generally separated from the public Internet by a firewall system that screens out unauthorized traffic. A number of secure protocols are being actively considered for various levels of communication, from the network to applications. A notable example is the Secure Electronic Transaction (SET) protocol layer, developed by the Visa and MasterCard organizations to secure credit card transactions over the Internet, which relies on digital certificates to be issued to cardholders and presented by them when making a purchase. At this time, a uniform secure environment has not been created and the perceived lack of security remains a fundamental obstacle to E-commerce. In particular, by often making it necessary to separate the settlement from the informational and contracting steps in an acquisition, the security concern is a serious obstacle to consumer-oriented E-commerce.

The principal messaging services include EDI, electronic funds transfer (EFT), and E-mail; voice messaging and telefacsimile are also available and have high potential as business initiatives when placed on the Internet. The basic motivation for implementing EDI is economy. Thus, corporations spend on the average about $150 to process a paper order, but only about $25 to process an electronic order (Verity, 1996). Beyond economy, companies seek strategic benefits, such as a compressed business cycle and intensified relationships with business partners. Time-based competitive moves of quick-response retailing by "pulling in" demanded products from the supply chain and just-in-time manufacturing with close-to-zero inventories are enabled by EDI.

Traditional EDI relies largely on the hub-and-spoke model, with a dominant business partner (the hub) gradually surrounding itself with the spokes of its supplier, customer, and collaborator firms. This form of EDI is still largely VAN-based, with proprietary standards and relatively high costs of bundled-in services. While industry standards have emerged in such segments as grocery or railroads, the international EDIFACT standard has found only a limited measure of adoption. At this time, many leading companies are moving their EDI communications to the Internet, seeking the benefits of lower costs and seamless global connectivity. This move will have important consequences for industries and entire economies, even more so when combined with a semantically enriched open-EDI. Such open-EDI will offer public international standards for common business scenarios. The objective is to interact spontaneously with a new trading partner, without a prior agreement on a common protocol of interaction. Multilateral interactions may be facilitated as well. Global business-to-business E-commerce is expected to benefit hugely by moving forward from the simple transaction sets of the traditional EDI, which are basically electronic equivalents of paper forms, to far more elaborate, validated, and customizable business scenarios of open-EDI ("*The Open-edi*," 1996; Bons, Lee & Wagenaar, 1998).

A form of messaging is also a special type of secure EDI used in electronic funds transfer systems (EFTS) that enable interbank transfers of funds in the form of information. Electronic mail (E-mail) has become a ubiquitous means of communication and organizational integration, often with profound organizational effects[2]. E-mail remains the most popular use of the Internet. It may be expected to remain such, incorporating the transmission of multimedia documents and combined with such enabling services as, for example, negotiation tools and smart software agents.

The most turbulent technological and entrepreneurial activity is taking place at the level of enabling services. These services facilitate searches for business information as well as for business partners, negotiating and maintaining a business relationship, as well as consummating business transactions by financial settlements and other information-equivalent transfers. This E-commerce level includes (or will include) digital libraries (Fox et al, 1995), electronic catalogs and directories, smart agents helping to seek out a desired good or service, electronic authentication services helping to establish the bona fides of a partner, copyright-protection services (perhaps relying on digital watermarks), traffic auditing to establish the worth of an electronic site for the advertising purposes (the dominant revenue source for many Web sites that do have significant revenue), smart-card systems that enable financial and information transfers of various kinds, and a variety of other services that are being invented and introduced (Kalakota & Whinston, 1996).

In particular, the development of electronic money (E-money) is the subject of much work and popular excitement. Called reengineering of money by some (Clemons, Croson, & Weber, 1996-97), it may be expected to further limit the role of cash in the economy. E-money in its various forms is expected to become a substitute for credit (e.g., credit cards) and debit instruments (e.g., checks or debit cards), or for bank notes and coins that offer anonymity to the owner (within certain legal limits in the United States) at the considerable expense of handling to commercial organizations. At present, the money supply of the United States surpasses $4 trillion, but only one-tenth of that, $400 billion, exists in physical form of bills and coins. Moreover, two-thirds of even that amount has been taken out of circulation, largely in the form of $100 bills, by various agents (many of them abroad) uninterested in banking (Gleick, 1996). Thus, most of the currency extant today in the United States and other developed countries already exists only as magnetized domains in the secondary storage of a computer system. Many actors other than buyers and sellers have a vested interest in the course the development of E-money will take; these include the vendors of the new instruments, but also the banks of issue, regulators, and the agencies entrusted with the national security and law enforcement.

Products and Structures of Electronic Commerce

Products and structures of E-commerce cover its three categories: consumer-oriented commerce, business-to-business commerce, and intraorganizational business. All three are experiencing vigorous developments, albeit with differing economic outcomes at this time.

The most highly touted applications of E-commerce are consumer-oriented. They include remote (or home) shopping, banking, and stock brokerage, accompanied by (and in some cases, so far paid by) on-line advertising. The intended audience for this market has not reached a critical mass, although the immense potential of this segment is driving much of the interest in E-commerce, as expressed, for example, by the stock-market capitalization of a number of companies that address it. The fact that the relatively successful vendors are so well known is a testimony to their dearth. These vendors include Amazon.com, a bookseller with huge, since virtual, inventory of 2.5 million titles, an impressive market capitalization, and a large following that has grown just in the third quarter of 1997 by 54 percent (Carvajal, 1998) . CDnow and N2K are reportedly profitable sellers of recorded music and already public companies with very high valuations relative to their sales. Virtual Vineyards, a virtual storefront selling wine and gourmet foods, and SportSite.com that sells sports equipment and apparel, are other well-known (yet limited-size) examples. A large number of traditional vendors derive incremental revenues from E-commerce. In many cases, purchase over the Internet is a substitute for a purchase in a physical outlet. This cannibalization belies its name by its desirability. Thus, Dell Computers, for example, realizes very significant savings by selling to consumers over the Web $3 million worth a day of personal computing hardware and software[3]. A number of firms provide remote financial services. Security First National Bank has successfully introduced branch-less banking over the Internet (Clark & Lee, 1998) and has been acquired by the Royal Bank of Canada at a valuation significantly exceeding that suggested by $54.7 million in deposits accumulated by Security First. Lombard Brokerage (now Discover Brokerage Direct) was the most notable pioneer of offering securities on the Web, along with a variety of free information services. For a chance of success in the consumer marketplace, the firm must identify an actual customer need and the firm's relationship with the customer must build on the key feature of the medium, namely interactivity (Hoffman, Novak, & Chatterjee, 1996).

The other principal consumer-oriented segment is infotainment-on-demand. The segment builds on the Web as a new communication medium, whose nature is as yet being explored. Infotainment ranges from education, through the delivery of specialized information, on to entertainment. Many educational offerings can respond to just-in-time, specialized requirements. Some of the educational programs and courses may be expected to bear appropriate accreditation and degrees; virtual universities are being formed and some see the traditional university model threatened. The segment also includes such content sites as webzines (such as *HotWired* and Microsoft's *Slate*, both not viable commercially at this time) as well as electronic newspapers and books, access to analytical reports, expert opinions, and to the experts themselves. Legitimation of expertise, packaging of knowledge and information from several sources, preservation of intellectual property, and use-based payments (including micropayments for the chunks of information bundled together) are issues to be resolved through further research, development, and experimentation in the marketplace. The entertainment side, overlapping with the informational one, includes several categories of webzines and electronic books, as well as video-on-demand, virtual-reality experiences on demand, and games that can provide an engrossing and continuing experience to multiple players. The sector known as adult entertainment is reputed to be the most profitable aspect of infotainment (Weber, 1997).

The consumer-oriented category is expected to expand in many ways, only some of which can be foreseen. For example, electronic benefit systems can be used to distribute government transfers over the Internet, which can then be employed for direct payments; the multimedia capability can redefine the notion of a magazine by including, for example, film clips; a variety of electronic interactions with "live" creators of infotainment may be expected to complement their creations.

The business-to-business supplier-customer linkages maintained with EDI are the best established category of E-commerce application. This category will be vastly expanded by the growth of new E-commerce, leading in many cases to interorganizational supply-chain management, which we shall discuss below. The business-to-business commerce is facilitated by consortia such as CommerceNet and by firms that organize industrial marketplaces on the Web, such as Industry.Net. Total business-to-business purchases made on the Web in the United States in 1997 are estimated at $10 billion by International Data Corporation ("Commerce by numbers," 1998).

The fastest growing area on this level of E-commerce is the intranet- and extranet-based information sharing and collaboration. Intranets support the opening of the organizational databases and data warehouses within the firm, dissemination of information on Web pages, as well as geography-independent team-oriented collaboration within the corporate firewalls. A typical intranet, employed by Morgan Stanley, displays on the globally accessible Web site automatically generated up-to-the-minute data summarizing the company's investment positions. More active uses of intranets are being developed and include on-line collaboration on common projects by working on electronic documents and communicating via videoconferencing. Thus, Ford Motor Company has linked with an intranet its design centers in the United States, Asia, and Europe, enabling the engineers to develop on-line electronic prototypes of automobiles and their components. The intranet-based use of the Internet facilities may lead to spectacular returns on investment ("The Chief Executive," 1998).. An extranet accessible to Harley-Davidson's dealers enables them to file warranty claims, check recall status, and submit financial statements to the motorcycle manufacturer, with the capability to order parts and accessories being implemented. It has become an inexpensive means of converting paperwork to electronic communications (Kalin, 1998).

At the apex of the E-commerce framework are the electronic marketplaces and electronic hierarchies that facilitate business relationships and transactions between firms. Electronic marketplaces are created to facilitate transactions over telecommunications networks between multiple buyers and multiple suppliers. Electronic hierarchies are long-lasting supplier-customer relationships between firms, maintained with telecommunications networks and coordinated largely by management, rather than by the market forces.

Market-based coordination can be classified into four categories (Garbade, 1982): direct-search markets (where the future partners seek out one another), brokered markets (with the brokers assuming the search function), dealer markets (with the dealers holding inventories against which they buy and sell), and auction markets. Industry.Net is an example of an established direct-search market for industrial products; OnSale provides an electronic auction market. Lee & Clark (1996) offer further analysis of several electronic marketplaces.

The formation of interorganizational electronic hierarchies is being supported by the fashioning of integrated supply chains, promoting just-in-time manufacturing, pulled by the actual customer orders. The partners' value chains are integrated to a significant extent with the use of information systems and telecommunications networks. The visibility of stocking levels throughout the supply chain helps to minimize inventories and to reduce working capital. This mode of operation imposes tight constraints on intra- and interorganizational coordination, in which intranets, extranets, and the Internet in general may be expected to play a significant role. Indeed, the reliance by all three on the same fundamental technology package is vital for the integration.. By securely linking its subnetworks with those of business partners in an extranet that relies on the Internet connectivity and software, the enterprise and the involved partners can coordinate product development, production, and delivery. Heineken U.S.A., for example, uses its HOPS extranet to collaborate with the distributors and suppliers on scheduling, forecasting, and just-in-time replenishment of supplies, consistently moving towards an electronically integrated supply chain. New intra- and interorganizational structures are necessary to take advantage of the Internet technologies in supply-chain management.

The hierarchies of individual firms and the open marketplaces may be considered the two ends of the continuum of business governance, with electronic hierarchies situated in the middle. As the next section elaborates, the spreading of new E-commerce will alter the comparative advantage between the hierarchy-based and market-based coordination, and among the various ways of structuring the market. Many and serious questions about the effects of E-commerce on business governance remain open.

III. The Impacts and Issues of Electronic Commerce

The business, societal, and research problematic of E-commerce spans an immense range, which reflects the depth of change being caused by this rapidly expanding mode of doing business (any business, including that of governing and educating). It is, of course, possible here to point only to some nodal impacts and issues within the hierarchical framework we have discussed. In keeping with the nature of our framework, we are discussing the problematic at the macro level.

In discussing the issues of E-commerce, we shall move up the hierarchy of Table 1, from the infrastructure to the business governance. The following aspects of E-commerce will be discussed: the limitations and asymmetries of the technological infrastructure of the Internet, integrating the transaction process in consumer-oriented E-commerce by incorporating the payment stage into it, building the consumer marketplace, moving products and stages of supply chains into marketspace. changes in business governance, and the new intermediation in the electronic marketplaces

Limitations and Asymmetries of Infrastructure

Although we should be wary of a technology-centered, "field-of-dreams" view of success factors, an appropriate technological infrastructure is necessary for the development of E-commerce. The infrastructure of the Internet, which acts as the current global information infrastructure, has acknowledged problems. The issues turn on the provision of sufficient bandwidth for the surging use that is also moving to multimedia transmissions, and on the problems fostered by the decentralized nature of the Internet.

The bandwidth of the telecommunication infrastructure is considered a serious limitation by many analysts. The current Internet 2.0 backbone operates at 45-155 megabits per second, enabling the World Wide Web (Bell and Gemell, 1996), but not sufficient for the massive use of video-on-demand, for example. However, the poor performance experienced by users often stems from the limitations of the equipment and of the connectivity of their access providers, rather than from the limited backbone bandwidth. Significant asymmetries exist between the bandwidth actually available to larger organizations and that available to small businesses and homes (where the consumers, telecommuters, and increasing numbers of very small businesses are). Solving the last problem, known as the "last mile problem," or "fiber to the home," outside urban areas by rewiring is prohibitively expensive. The mitigating factor is the increasing use of high-bandwidth T-1 lines, and of the newer and cheaper Digital Subscriber Line (DSL) technology. The issues pale in comparison with limitations of the infrastructure in a number of (slowly) developing countries. Fifty countries, some of them admittedly small island nations, that bring up the rear of the host survey by Market Wizards as of January 1998 currently run nine host machines out of the total of about 30 million Internet hosts ("Distribution," 1998).

Market-oriented solutions, in some cases stimulated by a government intervention, are in view in the developed and rapidly developing countries. A number of U.S. corporations are acquiring the requisite bandwidth on parallel for-profit networks with premium high-bandwidth links, using services of companies that offer connections via direct leased circuits (such as Digital Island in Oahu, Hawaii), and are accessing commercial duplicate Web sites. The trend to the provision of premium high-bandwidth services with multi-tier pricing may be expected to expand greatly. This will split the issue of public access from that of open systems. As the provision of premium infrastructural services accelerates and as the data traffic begins to dominate the voice, pressures will develop on the providers of local telecommunications services, generally sheltered from competition until now. New and powerful entrants appear in the marketplace to compete for the provision of the "Web tone" – instant and wide-bandwidth connection to the Internet (Woolley, 1998).

The future development of the multimedia Internet 3.0 backbone that would be able to carry simultaneously data, video, and voice communications is a widely open issue. Aside from the financial risk and technological problems, public policy questions of access will arise. Regulatory changes may be expected to attempt to facilitate funding.

As the use of its facilities expands exponentially, Internet protocols require updating as well. In a longer view, the shortage of Internet addresses in the current IPv4 protocol that relies on a 32-bit address system is considered a serious limitation as we are moving into the era of Internet-connected appliances, from personal digital assistants to cars. The proposed IPv6 protocol, with its 128-bit addressing, has not yet been adopted by the makers of the Internet equipment, such as routers.

A number of limitations are apparent on the Web level of the infrastructure - and they do translate into business problems. Many of the integration solutions are provided by middleware, systems placed between the client and the server software. Because of the sessionless nature of the hypertext transfer protocol (HTTP), you would need to identify yourself to every electronic page of a site during a single session in order to do business. There is no built-in way to maintain a continuity of a connection - and perhaps make another offer next time the caller dials in. This clearly highlights business effects of technological limitations - and their unintended consequences, which in this case is the attack on privacy. "Dropping a cookie" into a caller's system is a way around this limitation, but is invasive of the user's privacy. Stored as a text file by the accessed Web server in the user's computer system, a cookie identifies the user, along with the user's preferences and past purchases, to the server during future accesses.

Major infrastructural questions remain: Assuming that the Internet will further evolve as the global information infrastructure, will it remain fundamentally decentralized? How do we create a protected, secure, and reliable business environment in a decentralized infrastructure? Has the time come for a more transparent organizational structure in Internet management? Is the limited bandwidth a real barrier for the consumer, or are there other and more lasting forces at work? What infrastructure can be provided to enhance the ability of vendors to differentiate their offerings and the ability of customers to compare them? (Baty & Lee, 1995, present one such attempt)

Integrating Electronic Payment into the Buying Process

Consumer-oriented E-commerce is significantly lagging behind its business-to-business segment and current estimates place it at less than 10 percent of the total volume. The settlement phase of transacting on the Web is often pointed to as one of the limiting factors. The consumer should be able to pay for a purchase on the Web easily and with a perception of security. Although the overall shopping experience, product perceptions, and customer service on the Web today lead to a dissatisfaction of potential customers (Jarvenpaa & Todd, 1996-97) and require attention of marketers and researchers, the problem of settlement is the one capable of a systemic solution. As stated earlier in the paper, electronic equivalents of all the payment instruments in use today are appearing on the Web ("Electronic money," 1997).

The most excitement is occasioned by the development of electronic cash, the informational equivalent of physical banknotes and coins. Electronic cash can offer such benefits as the anonymity of the buyer, global acceptance, and divisibility that can cost-effectively go beyond that of real cash in the case of so-called micropayments (such as paying $0.10 for the one-time use of a software object or $0.19 for reading a literary essay on the http://www.bylines.org content site that plans to switch to electronic cash). Widespread use of electronic cash would have serious implications for the national banking systems and for the banks of issue, which would partly lose their seignorage profits and control of the quantity of money in circulation.

At this time, an electronic cash system called ecash has been implemented by Digicash (of Amsterdam) together with the Mark Twain Bank of Missouri (http://www.digicash.com), and is now offered by such major banks as Deutsche Bank and Bank Austria. The major U.S. banks have adopted a posture of watchful waiting, accompanied by internal research the potential impacts of electronic cash. A cash-like system relying on a smart card, Mondex (http://www.mondex.com) has been tested locally in several countries with very limited acceptance results (Clemons, Croson & Weber, 1996-97, Westland et al, 1998). Mondex International Limited, a joint venture of a number of banking institutions, licenses the rights to the Mondex technology. The NetCheque system developed at the Information Sciences Institute of the University of Southern California allows its registered users to "write" electronic checks (http://gost.isi.edu/info/netcheque). On the other side of the payment issue are the financial intermediaries, such as First Virtual Holdings, which facilitate settlements for E-commerce transactions by external means, without the financial tokens (such as the credit card numbers or bank-account information) ever appearing on the Internet (http://www.fv.com). The proponents of this mode of operation consider the Internet to be fundamentally insecure for financial transactions (Borenstein at al, 1996). At this time, the apparently prevalent informed opinion is that the financial transactions on the Internet are no less secure from the consumer's point of view than today's "physical-world" transactions, with the admixture of a fear that "a big hit from cyberspace" is possible because of the complexity and the globally distributed nature of the system.

The multifaceted impacts of electronic banking call for much research on the acceptability of various solutions to consumers, the apportioning of the risk, the institutional framework, the effects of the electronic cash on the economy, and, certainly not least, making electronic settlement of transactions secure.

Building the Electronic Consumer Marketplace

Some would argue that the main question of E-commerce today is how to convert Web surfers from browsers to consumers by creating an encompassing marketspace for information, services, and goods. The statistics of the phenomenal growth of the Internet use, with 29.2 million Web users in the United States as of the end of 1997 ("Commerce by numbers," 1998) and with 27.8 million unique visitors during January 1998 to the top-ranked site – Yahoo! ("Top 20 sites," 1998), all of this accomplished within some four years, have to be counterbalanced by the modest statistics of the actual consumer buying. Yet, rapid growth is apparent in this sector as well. The approximate $132 million spent by the consumers in 1995 according to (Martin, 1996) has reportedly grown into $1 billion spent during just the fourth quarter of 1997 according to Forrester Research (Guglielmo, 1998), a figure that appears too high when placed in the context of other estimates. A large number of widely diverging, yet generally highly optimistic, forecasts of future growth exist (Folley & Sutton, 1998). The statistics and, far more so, projections are debatable; yet the growth trend is not.

The consumer marketplace encompasses auction sites, reverse markets, and digital retail outlets. As we have said before, the auction approach is a successful means to capitalize on the ubiquitous accessibility of the Internet medium. Along with other roles, an auction intermediary facilitates price discovery. Such sites as OnSale, auctioning computer and electronics equipment, and eBay, an auctioneer of collectibles, are relatively limited-size U.S.-based virtual auction houses. The two sites are built on two different business models. OnSale, a public company by now, is a dealership-type of marketplace, which takes an active role in the ownership and delivery of goods, and customer service. This is reflected in the much higher net revenue as the percentage of sales than that of eBay, which simply provides the sites as a form of a digital agora, accessible to sellers and buyers, and realizes a commission of 1.5 to 5 percent of an item's price. The success of both sites points up the variety of approaches that can be taken in the Web-based consumer market. Auction houses have a potential to coalesce into large and multifaceted marketplaces that take on additional intermediary responsibilities in lowering the risk of the transacting parties by certifying the quality of goods and facilitating logistics.

Reverse markets are also based on the inexpensive ubiquity of the Internet medium and place the consumer in the driver seat. By broadcasting the need over the Internet, the prospective buyer of a product, a service (or a job, though ceasing to be a consumer in this relationship) is able to increase the consumer's surplus by extracting more favorable offers than those available publicly. A number of facilitators of reverse markets provide "wanted" sites.

Several approaches have been identified within the general business model of Web-based digital retailing at fixed prices (as opposed to creating marketplaces that include price discovery). These on-line retailing outlets have been classified by Hoffman, Novak & Chatterjee (1996) into (1) on-line storefronts or catalogs actually selling products or just establishing awareness of them, (2) content sites providing information and support, and (3) Web traffic control sites, such as malls and search engines. Westland & Au (1997-98) classify the digital retailing approaches into catalog sites, bundling outlets, and virtual-reality storefronts. The bundling and virtual reality approaches may be considered of particular promise in experimenting with Web retailing. Theoretical work indicates that the bundling of goods is attractive for the goods of low marginal cost, with uncorrelated demand, and of approximately equal consumer valuation, with information goods (such as software) being a prime example (Bakos & Brynjolfsson, 1997). Bundling is seen also promising for such goods as flower arrangements and gifts, where the consumer can conveniently limit the extent of necessary decision making and the vendor can substitute products at will. In a kiosk-based experiment, Westland and Au (1997-98) find that the additional time necessary to interact with a virtual-reality storefront does not result in a greater consumer spending.

Spiller and Lohse (1997-98) further classify empirically the catalog-type on-line sites actually available on the Web into five categories, summarized in Table 2. Note that several categories of digital retailers include on their sites what we call bonding features, which are expected to motivate repeated visits. Such features include product-related webzines, lotteries, and tips. These researchers find that digital retailing outlets offer limited product selection, few service features, and poor interfaces. As a confirmation of these perceptions, consumers find offering lists to be shallow and are also concerned about the performance and personal risks, such as payment-related security and privacy (Jarvenpaa & Todd, 1996-97).

Table 2. Empirical classification of catalog-type digital retailing strategies

(modified from Spiller & Lohse, 1997-98).

Strategy	Main Features	Examples
Superstore	Large catalog size Navigation tools Bonding features Extensive information and hand-holding	L.L. Bean Online Sports
Promotional store	Limited product range Extensive company information Bonding features Community-oriented information	AWEAR Cheyenne Outfitters
Plain sales catalog	Medium-size or large catalog Large images and thumbnails	Milano First Lady
One-page catalog	Limited catalog size Product-browse function	Alaska Mountaineering Close To You
Product listing	Medium-size catalog Small product images Few hierarchical levels	Rocky Mountain Outfitters Dance Supplies

Digital retailing has low entry thresholds at its lower end. Claims are made that multinational corporations may find themselves challenged on the Web by small upstarts and it is suggested that they need to review their business models (Quelch & Klein, 1996; Ghosh, 1998). However, the cost to build an "aggressive" Web site, that is, a site that is interactive, transactional, and dynamic, is estimated at more than $1 million ("Commerce by numbers," 1998). It is to be expected that the usual advantages of scale, scope, and existing brand will translate into Web retailing advantages when consumer-oriented E-commerce matures.

In the case of digital products, such as software, music, or multimedia, the Internet plays the role of distribution medium. A number of firms, including Cybermedia, TestDrive, and Tuneup.com, market software over the Internet, for example. Worth watching is the future of renamed Egghead.com, which under competitive pressures has decided to move its software retailing business from the brick-and-mortar outlets of limited size to the Internet in September 1997, with encouraging initial results. The range of digital products will vastly expand with the growth of E-commerce, with many new products emerging, for example, as symbolic tokens replacing hard goods (Choi, Stahl & Whinston 1997). We shall further discuss the virtualization of products below.

An emblematic trajectory taken by a small merchant on the Web is that of GolfWeb, which had painstakingly built up a following – a golf-centered community - on its electronic site before turning it into a retail outlet. By providing extensive golf-related features and information, GolfWeb had been able to attract some 500,000 hits a day to its 25,000 pages and had relied on advertisers for any revenue before starting its virtual pro shop to produce sales. The firm does treat the Web as a new medium by providing, for example, such interactive features as virtual equipment fitting for customers. Yet, questions remain: Will many smaller firms, encountering a relatively low entry threshold ($1.7 million of venture capital in the case of GolfWeb), make money on the Web? Will the business model such as that of GolfWeb ultimately lead to profits? What are the successful consumer-oriented business models for the Internet? And how do we measure what is actually happening on the Internet?

The potential in the expansion of the Internet-based consumer marketplace can be seen in experimentation going beyond the facilitation of consumer search and order taking. Building demand for the products, customizing products to the individual requirements, and developing lasting relationships between the vendor and the customer are the long-term objectives of Web sites. Specifically, stimulating sites can build demand for products, regardless of the ultimate manner of purchase. The interactivity of the medium gives a vast opportunity to customize, and thus engage in one-to-one marketing at relatively low incremental costs. If it appears unlikely that one would purchase a pair of shoes over the Internet, it is far more likely that one would if offered a customized product, based on the measurements transmitted over the network, such as the services currently available in some brick-and-mortar outlets.

The sites can be used to build lasting relationships with individuals, and thus developing brands. Of particular importance at this stage of the development of consumer-oriented E-commerce are community-building features of Web sites. These features attract an individual to a community of "birds of a feather," along demographic, interest, or even affliction (that may be alleviated) lines. Community sites attract voluminous traffic by committed members and serve for them as the portal to the Web, making such sites highly attractive to advertisers. Sensitivity to the needs of the particular community is crucial to success. The sale of Tripod, a two-year old company that runs a site with 2.7 million unique visitors a month for $58 million to Lycos in 1998, places a financial estimate on the value of such communities. GeoCities is another community-oriented firm that has attracted significant investment. Technology can be used creatively to reinforce the sense of community while pursuing marketing objectives (doing well and good at the same time). Firefly technology (http://www.firefly.com), for example, is notable in inferring the purchasing needs of an individual from those of the community members with similar profiles, and offering products accordingly. The company's sensitive privacy policy made it into an attractive acquisition target for Microsoft.

Selling on the Web can provide on-line demonstration, consultation, and assistance to these virtual communities. Clearly, the nature of many existing electronic communities is antithetical to commerce and a pull-model of doing business has to be built for them. Will the community-oriented model of digital retailing prove to be only a stage in acculturating consumers to the new buying venue? Will the purely transactional approach take over for the appropriate products as the Internet selling matures? The digital retailing practice has to embrace the broad approach to the opportunities offered by an interactive medium that attracts many millions of potential buyers. The future research on building consumer marketplaces would do well by adopting this broader approach to the Web sites as well, which would of course require a longer experience and longitudinal studies.

Moving Supply Chains and Products into Marketspace

It is recognized that the networked infrastructure offers new opportunities for adding value by moving the stages of corporate value chains into the realm of information processing, saving money and time in the process (Rayport & Sviokla, 1994). We are witnessing the virtualization of value-chain segments, and, in the future, perhaps also of an increasing number of products. Business processes can be moved into the virtual, informational value chains, be they paperless transaction processing or electronic prototyping. The development of Boeing 777 based on virtual prototyping is probably the best known example. Rapid prototyping and rapid manufacturing technologies move the electronic model of a product directly from the computer-aided design (CAD) file into the machine that builds up a final, physical, prototype – or the final product - layer by layer, or powdered particle by powdered particle (Bylinsky, 1998). A virtual-reality based system for developing customized clothes, called Virtuosi, affords three-dimensional viewing and manipulation of fashion designs over the Web; voice-controlled mannequins demonstrate the clothes on the virtual runway in this experimental system (Gray, 1998). Indeed, a computer hardware design can be sent over the Web, when field programmable gate arrays are used (Mangione-Smith et al, 1997).

This virtualization of products and processes is only at its origins and we may expect very significant development and efficiencies to derive from it. As they move from the purely informational to the collaborative use, corporate intranets can serve as vehicles for these virtual elements of value chains. Corporate extranets, open to business partners, suppliers, and customers can become secured extensions of the Internet in the interorganizational marketspace networks.

What goods and services can be converted to information that can be moved around and traded over the electronic marketplace? Rayport and Sviokla offer an example of the answering machine (1995). Cash is another example of a good that can be virtualized (a special kind of good that it is), video-cassettes are another such good, retail services are already delivered over the Web instead of in physical stores, and many personal computers may be converted to appropriate over-the-network services. After all, a network computer is just such an attempt. Many questions regarding the relative economic efficiency of physical-versus-virtual organization of work and product delivery need to be formulated and researched.

Changes in Business Governance

Our understanding of a firm as a monolith has been problematized by Coase's milestone paper (1937). Transaction cost economics that arose from this work helps us see the boundary of the firm as defined by the equilibrium between the advantages of the lower transaction costs of internal production on the one hand, and the lower agency costs (such as the costs of management) and economies of scale and scope of outside procurement on the other (Williamson, 1975). In other words, the costs of conducting marketplace transactions, i.e., information seeking, negotiating the terms, and settlement, define to a large extent what a firm will buy, instead of making it. Since these coordination costs are lowered in E-commerce, a general agreement exists (following the analysis by Malone, Benjamin & Yates, 1987) that more outsourcing - buying rather than making in-house - will take place. There is a considerable evidence that the use of information technologies is indeed associated with the emergence of small firms as the result of outsourcing of non-core activities (Brynjolfsson et al, 1994). Will the Internet reaffirm and amplify this trend? Will the maturing Internet enhance the opportunities for smaller firms and if so, to what extent?

Going beyond the "boundaries-of-the-firm" analysis, the electronic market hypothesis offered by Malone, Benjamin & Yates (1987) suggests that the development of interorganizational systems based on telecommunications networks will move the governance towards the market end of the spectrum, with increased transaction-oriented buying from multiple suppliers. Yet the "move-to-the-middle" hypothesis by Clemons, Reddi & Row (1993) postulates that the outsourcing will go only as far as long-term collaboration with a limited number of suppliers. Likewise, Bakos & Brynjolfsson (1993) argue that the consideration of coordination costs needs to be combined with the incentives for noncontractible investments that suppliers need to make to maintain a relationship with a buyer. These relationship-specific investments have to be made to ensure, for example, the appropriate quality control, the implementation of information-sharing systems, and the modification of business processes. This consideration leads the authors to postulate the "move to the middle" as well.

The evidence available at this time tends to support the second hypothesis. For example, a study of computerized loan-origination systems found no move to the market (Hess & Kemerer, 1994). A study of the effects of the French Teletel system, whose Minitel terminals are a part of the landscape in that country (40 percent of non-retired population has access) found stable customer-supplier relationships as a result (Streeter et al, 1996). However, new E-commerce relies on tools that are radically different from, for example, the French Teletel (whose technology is outdated) and the developments surrounding the Internet (e.g., open-EDI that would foster a transactional approach to the marketplace) are certain to lead to further analyses of the issue.

Within the market governance, profound changes can be expected. For example, the global reach and the low access cost of the Internet can be expected to promote the growth of auction markets[4]. Electronic auction companies that are able to tap into an enthusiastic user community are almost instantaneously successful. Reverse markets, where willing buyers seek out sellers, are expanding as well. This naturally leads to the next question: Will there be a role for business intermediaries in a business world where the ultimate agents - the buyer and the seller - can seek one another out, negotiate the terms, and settle the trade over the Internet or a similar global open network?

New Intermediation and Impacts on the Distribution Channel

An argument is being commonly advanced that the greater reliance on the open telecommunications networks for doing business will lead to disintermediation: the disappearing role of an intermediary, such as a dealer or a broker. Indeed, a perceptible pressure can be felt on the role of car dealers (Armstrong, 1998), for example. Electronic commodity and stock exchanges are being created, which will squeeze out some intermediaries to the trade, as it has happened at the London Stock Exchange or at the Swiss Electronic Exchange. Removing intermediaries from a supply chain can result in significant economies, with much of the savings competed away and returned as a part of consumer surplus (Benjamin & Wigand, 1995).

Powerful social and organizational barriers counteract many of these developments (Lee & Clark, 1996). Beyond that, intermediaries do play an important economic role in business exchanges by limiting the risk of the trading parties, by creating economies of scale and scope, and by facilitating transactions. The latter role includes the assistance in the search for a trading partner, in negotiation (or price discovery in auction markets), and settlement. It may be even argued that the role of intermediaries will be reinforced in E-commerce (Sarkar, Butler & Steinfield, 1995).

New types of electronic intermediaries (so-called cybermediaries) can become valuable. They can facilitate product search, evaluation, and distribution in the form of virtual malls or on-line auctioneers. Buyer search costs are an important factor in the market behavior and in the efficiency of allocation (Bakos, 1991) and intermediation may be necessary for products of more complex description. New E-commerce has given rise to a new category of Web-based niche intermediaries which are able to create a business model by reducing search costs in industry-specific marketplaces. Realbid has created a site (http://www.realbid.com) that brings together the buyers and sellers of commercial real estate (Jones, 1998). The firm attracts to the site with e-mail notices the potential buyers identified with its growing database. The firm's offering consists in removing the need for the buyer to study multiple several-hundred page long proposals to find likely purchase candidates. In another industry, Cattle Offerings Worldwide posts on its site the pedigree and genetic traits of cattle embryos and lets cattle buyers bid on them. Industry segments with widely dispersed sellers and buyers, and complex offerings that lend themselves to simplification with a searchable database are promising targets for this intermediation.

Quality certification plays a crucial role in the success of the AUCNET, the electronic auction house for used cars in Japan (Lee, 1998). AUCNET is able to extract on the average higher prices in its electronic auctions than the traditional auction houses in that country are able to do. This can be accounted for by the avoidance of the need to transport the car to an auction, with the lower transaction costs and wider reach thus attracting better cars on the seller side, and the local availability of cars producing savings for buyers. The virtuous spiral attracts ever higher-quality cars, naturally commanding higher prices.

New intermediaries can provide packaging and enhancement of information-based goods, for example, by delivering customized targeted multimedia information packages, with use-based payments to the holders of intellectual property rights, and with the access to the authors as a premium service. Suppliers receive the efficiency of a single payment; customers save on search costs, and get a more focused and comprehensive product. Intermediaries can track the copyrights and licensing payments, for example, enforcing site-license agreements. If in the future persistent software copies will not need to be made for many products, which will be simply downloaded for each use, appropriate billing can be provided by an intermediary. Intermediaries can also handle support services and updating of information-based products. At the same time, those traditional publishers and resellers of information-based products which cease to provide value in the new constellation, may indeed be disintermediated.

An excellent example of a territory being carved out by a new intermediary is Healtheon, a company formed by Jim Clark, the founder of Silicon Graphics and Netscape Communications. Healtheon expects to sell its services to insurers and health maintenance organizations, which will use the firm's software to present their own services to employers and to register their employees. The firm will also provide health-plan management for these employers. It will use the Web as its operations platform and has prospects to expand into a ubiquitous electronic network for health care.

Traditional intermediaries can adapt to deliver enhanced value. Marshall Industries, a distributor of electronic products, has exploited the capabilities of the Web by establishing a site (http://www.marshall.com) that is frequented by millions of engineers from around the globe. The site offers up-to-date data sheets, prices, and inventory information on the products of 150 major suppliers, in a format that can be customized on demand. In addition, the site makes available software that can be downloaded to the customer's site in order to design virtual chips that will work with the chips distributed by Marshall Industries. The software code describing the newly designed chips can be in turn uploaded to the distributor via the site. The distributor immediately burns the designs into prototype chips that are mailed to the customer. By inserting itself into the virtual value chain of the ultimate customer, the intermediary makes itself indispensable to both its suppliers and its customers (Hartman, 1997).

The principal expected impacts of E-commerce on distribution channels have been summarized in Table 3. The table allocates the factor to the channel's actor where the impact may be expected to be felt most. For example, although the size of both the seller and the buyer is not directly transparent on the Internet, it is the partly opaque size of the seller that has the greatest effect on the course of a transaction. Notable is the price pressure on the sellers, which emerges from the reduced buyer search costs (Bakos, 1991; Bakos 1997). All the channel impacts listed in the table require further study.

Table 3. Expected principal channel impacts of E-commerce

Sellers	Intermediaries	Buyers
Partly opaque firm size	Bypass possibility Traditional ones may be	Possibility of enacting reverse markets

Increased price competition Price discrimination possible Rich product description may be needed Reduced search costs in finding buyers Observable and measurable buyer behavior Product quality and settlement terms may have to be independently certified Goods movement and storage costs may be reduced Network effect (increased benefit with increased number of buyers)	replaced by cybermediaries Increased role in price discovery possible May be material as third-party guarantors	Reduced search costs Increased risks Network effect (increased benefit with increased number of sellers)

The revenue stream extracted by the new intermediary will depend on the value added by its activities; this value added may in turn be hypothesized to correlate with the level in the framework of Table 1 that the intermediary operates on, with higher-level products and services yielding higher margins[5]. Multiple questions present themselves: Which intermediaries are doomed? How can intermediaries add value in E-commerce? What are the successful new business models for intermediaries? How can traditional intermediaries become new intermediaries? What will be the categories and the role of the new intermediaries? How will the profits and welfare be redistributed among the parties in the business transactions?

IV. Conclusions

New E-commerce is still in its formative stage. E-commerce is currently dominated by the business-to-business and intraorganizational segments. Many major digital retailers are as yet in the investment and brand-building mode and show no profits; yet many established retailers realize profits from the new selling channel. Buoyant growth is apparent throughout.

The hierarchical framework presented above offers an opportunity to separate concerns and analyze the specific aspects of this enterprise. The technological infrastructure currently imposes several limitations on the development of a global marketspace and on the personal convenience of the participants. An integrated consumer-oriented transaction space is yet to emerge. The consumer marketplace is being developed by a large number of entrepreneurial initiatives, many of them experimenting on the frontiers. Moving the links of supply chains and products into marketspace offers a major promise in raising economic efficiency of both manufacturing and service industries. As these moves take place and as the supply chains are reconfigured, many new firms may be expected to emerge and specialize around newly redefined core capabilities. The business models of many existing firms will be threatened. Although several intermediary roles are threatened by E-commerce, others are not, and new intermediary opportunities emerge.

The capabilities of the new marketplace that combines the properties of a medium with that of a global (virtual) location will be exploited to redefine many products and marketplaces. Notable are the possibilities to provide customized products, in the process moving ever larger segments of the supply chains to the Internet, branding through bonding to a Web site and thus to its sponsor, the advantages of virtual auctions, and the possibility to create large reverse markets.

New E-commerce will present over time countless opportunities and challenges to our economies and societies. Expansion of commerce and technological innovations are two of the levers of economic growth (Mokyr, 1990). These forces are combined in the progress of E-commerce. The macroeconomic effects of E-commerce on the national and regional economies, and on the international trade and its terms will need to be assessed and analyzed. The prevailing judgment at this stage of E-commerce development is to allow free-market forces to assert themselves unhampered by excessive government regulation ("*A Framework*," 1997). The traditional institutions, such as banks of issue, commercial banks, universities, established business intermediaries, media and publishing companies, will find a need to redefine their roles in the new environment. The taxability of products traded globally over the Internet is as yet an open issue. Intellectual property that can be converted to on-line content may find itself revaluated in the global marketplace.

The tension between the transactional efficiency of spot purchasing facilitated by electronic markets and the need for long-term relationships of trust and forbearance, enabled by electronic hierarchies, will persist and call for much study. The geographical limitations that have bound the place of residence to the place of work, and that have already been eroded by the growth of telework, may be expected to be even less binding. Indeed, the possibilities of the loss of rural space to the new ex-urbanites are already causing environmental alarms (Snider & Moody, 1995). A number of countries that had been marginalized by their geographical position take extremely active interest in E-commerce as the means to move to the center of the virtual geography. The redistribution of work has to be studied from multiple perspectives.

E-commerce has entered a stage of rapid and sustained development. A large number of business models have been enabled by it. A number of questions have been posed here. All of these and many others will require further experimentation, experience, observation, analysis, and research.

Endnotes

[1] The World Wide Web, which has brought people to the Internet, was devised by Tim Berners-Lee in 1989 as a means of collaboration for the physicists working on the projects of the international research center CERN. However, it is actually the first popular Web browser, NCSA Mosaic (designed by Marc Andreessen, not much later a founder of Netscape) that began to bring people and businesses to the Web in the spring of 1993. That year may be considered the beginning point of new E-commerce.

[2] According to John Gage, the director of the science office of Sun Microsystems: "Your E-mail flow determines whether you're really part of the organization; the mailing lists you're on say a lot about the power you have. I've been part of the Java group at Sun for four or five years. Recently, by mistake, someone removed my name from the Java E-mail list. My flow of information just stopped - and I stopped being part of the organization, no matter what the org chart said. [...] The best way to understand what's happening in a company is to get its alias file - the master list of all its E-mail lists." (Rapaport, 1996)

[3] "The Internet for us is like a wonderful dream come true. It's like zero variable cost transactions. The only better thing would be mental telepathy," according to the Dell Computer CEO Michael Dell ("*The chief executive,*" *1998* , p. 22).

[4] An interesting system that shows the potential of almost frictionless auction markets has been developed at Xerox Corporation. The system auctions off cool or hot air in a building to the individual rooms. Software agents track the temperature in the rooms and bid accordingly for heating or cooling. The system holds about 1,500 auctions a day, more than one a minute. The "market-based" system was found to distribute warm and cool air throughout the building better than the traditional, "hierarchical" systems (Markoff., 1996).

[5] Here is an example of a trajectory to the new intermediation. Andrew Klein, founder and president of Spring Street Brewing Company, was the first to complete the initial public offering (IPO) of his company's stock on the Internet - disintermediating the investment bankers. He has since launched Wit Capital Corporation, an investment bank that will specialize in Internet IPOs. The firm is currently taking orders for its solely managed over-the-Net offering – appropriately, of the shares of an Internet game developer Sandbox Entertainment (Schifrin, 1998). One can speculate that by moving the function of IPO from the top level in Table 1 to level 5, the entrepreneur will be able to extract a smaller surplus than the traditional intermediaries.

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The Emerging Role of Electronic Marketplaces on the Internet

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Internet-based electronic marketplaces leverage information technology to match buyers and sellers with increased effectiveness and lower transaction costs, leading to more efficient, "friction-free" markets.

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1. Functions of a Market

Markets play a central role in the economy, facilitating the exchange of information, goods, services and payments. In the process, they create economic value for buyers, sellers, market intermediaries and for society at large. Recent years have seen a dramatic increase in the role of information technology in markets, both in traditional markets, and in the emergence of electronic marketplaces, such as the multitude of Internet-based online auctions.

Markets (electronic or otherwise) have three main functions, summarized in Table 1: (a) matching buyers and sellers; (b) facilitating the exchange of information, goods, services and payments associated with market transactions; and (c) providing an institutional infrastructure, such as a legal and regulatory framework, that enables the efficient functioning of the market. In a modern economy, the first two functions are provided by intermediaries, while the institutional infrastructure is typically the province of governments. Internet-based electronic marketplaces leverage information technology to perform the above functions with increased effectiveness and reduced transaction costs, resulting in more efficient, "friction-free" markets.

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1.1 Matching buyers and sellers

Markets "clear" by matching demand and supply. This process of matching buyers' demand with sellers' product offerings has three main components: determining product offerings, search, and price discovery. The behavior of buyers, sellers and intermediaries is motivated by their desire to maximize their private utility. When markets function well, this also leads to an efficient allocation of productive resources. Viewed this way, markets are the engine and steering system of our economy.

Table 1: Functions of a Market

Matching buyers and sellers

- Determination of product offerings
    - Product features offered by sellers
    - Aggregation of different products
- Search (of buyers for sellers and of sellers for buyers)
    - Price and product information
    - Matching seller offerings with buyer preferences
- Price discovery
    - Process and outcome in determination of prices

Facilitation of transactions

- Logistics
    - Delivery of information, good or service to buyer
- Settlement
    - Transfer of payment to seller
- Trust
    - Credit system, reputations, rating agencies like Consumer Reports and Better Business Bureaus

Institutional infrastructure

- Legal
    - Commercial code, contract law, dispute resolution, intellectual property protection
- Regulatory
    - Rules and regulations, monitoring, enforcement

Product Offerings. Markets provide sellers with information about demand that allows them to employ economic inputs such as capital, technology and labor, and develop products with characteristics that match the needs of buyers. Sellers determine a schedule of product offerings that they expect will maximize their profits based on:

- information about buyer demand;
- the cost of inputs;
- the available technology for production and distribution of the information, goods and services purchased by the buyers; and,
- the transaction costs of administering production, distribution and payment.

Search. Buyers select their purchases from the available product offerings after considering factors such as price and product characteristics. In obtaining and processing this information, buyers face *search costs*. These costs include the opportunity cost of time spent searching, as well as associated expenditures such as driving, telephone calls, computer fees, magazine subscriptions, etc. Typically, sellers exploit these search costs by raising their prices, and thus enjoy higher profits. Similarly sellers may face search costs in locating qualified buyers for their products, such as market research, advertising and sales calls.

Price Discovery. A key function of markets in our economic system is price discovery, i.e., the process of determining the prices at which demand and supply "clear" and trade occurs. For certain markets, such as financial markets, this is their primary function. Markets can employ a number of mechanisms for price discovery. For instance, some financial markets use one or more of the several types of auctions to determine prices, such as the "call market" auction at the opening of a trading day at the New York Stock Exchange, when bids are accepted up to a certain time and exchange occurs when the market opens. This is the first price that is communicated via the stock market ticker to the market at large, kicking off a day of trading. Other markets, such as the traditional auto dealership, employ negotiation between buyers and sellers until a price is reached. Still in other markets, like the typical department store, merchants make firm offers that customers can either take or leave.

1.2 Facilitation of transactions

The matching function of a market establishes a bilateral relationship between a buyer and a seller. After a transaction is agreed upon, the product sold must be transported to the buyer (logistics), and payment must be transferred to the seller (settlement). Markets typically incorporate mechanisms for logistics and settlement: when a travel agent uses an airline reservations system to book a flight, the system will generate the itinerary and the ticket, and will process a credit card payment. Furthermore, market transactions require the establishment of a certain level of trust, which protects buyers, sellers and intermediaries from the opportunistic behavior of other market participants. For instance, this trust role may include banks issuing letters of credit, credit reporting bureaus, or rating agencies such as Consumer Reports and Better Business Bureaus, which keep track of product information and seller reputations, and thus discourage opportunistic behavior. Finally, markets provide the physical infrastructure that allows transactions between the buyers and the sellers to take place. This includes real assets such as physical structures and trading floors, computers and communication networks, and transportation systems.

1.3 Institutional infrastructure

The institutional infrastructure specifies the laws, rules and regulations that govern market transactions, such as issues related to contract law, dispute resolution, and intellectual property protection, and provides mechanisms for their enforcement. In addition, the dynamics of electronic markets may raise certain antitrust issues. For example, there are large economies of scale in distribution, as a single online retailer or intermediary can serve a very large market. There are also potential demand-side economies of scale in payment mechanisms and software. These may lead to a "winner-take-all" market structure (Arthur 1996) with one or a few firms dominating the market.

2. How the Internet affects markets

Electronic marketplaces, and especially Internet-based markets, are having a major impact on the roles of markets discussed above (Bailey and Bakos 1997, Riggins 1998).

2.1 Product offerings

Two major emerging trends distinguish products in electronic marketplaces from their traditional counterparts: (a) increased personalization and customization of product offerings, and (b) the aggregation and disaggregation of information-based product components to match customer needs and to support new pricing strategies.

Personalization and Customization. Electronic marketplaces support personalization and customization in two ways:

- Consumer tracking technology allows the identification of individual buyers; information about these buyers, such as relevant demographics, consumer profiles, or comparison with the known preferences of similar consumers, can be used to discover or estimate their specific preferences.

- Information-rich products lend themselves to cost-effective customization; for instance, delivering an electronic newspaper tailored to the interests of an individual reader need not be more costly than delivering the same copy to all subscribers.

Current personalization and customization technologies use either "rule-based" systems like Broadvision (www.broadvision.com) that draw upon sets of "expert" rules, or "collaborative filtering" systems like the Firefly Network (www.firefly.net) that draw on the feedback and experiences of consumers with a profile of likes and dislikes similar to the targeted buyer. This allows the practice of "one-to-one marketing," which is based on understanding individual consumers. For instance, establishing a dialogue and a sense of community among customers can create value by enabling the sharing of experiences, problems and solutions, but also allows the collection of important information about individual consumers. The ultimate objective is to provide customized services according to individual preferences, whether expressed or inferred. Increased selling effectiveness comes from being able to design appropriate products to address the needs of individual consumers, and from being able to identify the moment when a customer's purchasing decision is most likely to occur and to be prepared for that moment, one step ahead of the competition.

Aggregation and disaggregation. When determining their product mix, sellers must decide which product components or features will be included in each product offering. For example, the developer of an operating system must decide which features to implement, and whether they will be marketed and priced individually, or in a single bundle. These decisions are driven by the cost of different product bundles, which includes the following types of costs:

- *Production cost*: the cost of producing additional units for inclusion in the bundle, including storage, processing and communications costs incurred in the process.
- *Transaction and distribution cost*: the cost of distributing a bundle of goods and administering the related transactions, such as arranging for payment.
- *Binding cost*: the cost of binding the component goods together for distribution as a bundle, such as formatting changes necessary to include news stories from wire services in a "newspaper bundle."
- *Menu cost*: the cost of administering multiple prices. If a mixed bundling strategy is pursued, where the available components are offered in different combinations, then a set of n goods may require as many as 2^n prices (one for each subset of one or more goods).

Internet marketplaces are changing the constraints imposed by these costs and thus are fostering new types of intermediaries that create value by aggregating services and products that traditionally were offered by separate industries. For instance, Table 2 shows the components of three processes that generate value for consumers. In traditional markets, these components are provided by separate industries. For instance, a consumer in the market for a new car might select a make and model based on the experience collected from test drives, research from auto magazines and Consumer Reports, and recommendations from friends. She would then agree on price, order the vehicle, and take delivery through a car dealer, arrange financing through a bank, and purchase insurance from an insurance company. By dramatically lowering the transaction, distribution and binding costs, the Internet has allowed intermediaries such as Auto-by-Tel (www.auto-by-tel.com) or Microsoft's Carpoint (www.carpoint.com) to offer all of the above products and services, with the exception of the physical test drive.

Table 2: Components of Consumer Processes

- **Purchasing a new home**:
  - Research city and neighborhood
  - Find a house
  - Inspections, title research, appraisals, contracts
  - Get a mortgage
  - Moving services
  - Decorators, furniture, etc
- **Planning a vacation**
  - Research destination
  - Arrange accommodations and travel
  - Purchase maps, books, information
  - Check out weather, items to take
- **Purchasing a car**
  - Research make and model
  - Select a dealer
  - Get a loan or arrange a lease
  - Purchase insurance

Similar intermediaries are emerging in other areas, such as the Travelocity (www.travelocity.com) and Microsoft's Expedia (www.expedia.com) travel services aggregators, or Microsoft's Boardwalk Web site that will aggregate products and services related to real estate transactions.

The case of information goods. Digital information goods, such as news articles, digital images or music, allow perfect copies to be created and distributed almost costlessly via the Internet. The Internet is thus precipitating a dramatic reduction in the marginal costs of production and distribution for these goods, while micropayment technologies are reducing the transaction costs for their commercial exchange. Bakos and Brynjolfsson (1997) point out that this creates new opportunities for repackaging content through strategies such as bundling, site licensing, subscriptions, rentals, differential pricing and per-use fees. All of these schemes can be thought of as either aggregating or disaggregating information goods along some dimension. For instance, aggregation can take place across products, as when software programs are bundled for sale in a software "suite" or when access to the various content of an online service is provided for a fixed fee. Aggregation can also take place across consumers, as with the provision of a site license to multiple users for a fixed fee, or over time, as with subscriptions.

Many information goods have been bundled solely to save on transaction, distribution and menu costs, yet these costs are much lower on the Internet. Thus, software and other types of content may increasingly be disaggregated and metered, as on-demand software "applets" or as individual news stories and stock quotes. Independent of the above cost considerations, Bakos and Brynjolfsson show that aggregation of large numbers of information goods can be a powerful strategy that results in higher profits for sellers as well as a socially desirable wider distribution of the goods. This is due to the ability of aggregation to change the shape of the demand curve faced by the sellers to one that is easier to exploit.

Aggregation can be a surprisingly profitable strategy when marginal production costs are low and consumers are homogeneous. Bakos and Brynjolfsson's analysis provides a framework to understand the emergence of intermediaries that aggregate online content, such as America Online and Yahoo!, as well as the increasing use of subscription pricing in the sale of information goods by companies like Netscape and the Wall Street Journal. Figure 1 graphically summarizes the above discussion and depicts the impact of marginal cost *c* and distribution/transaction cost *d* on the desirability of bundling large numbers of information goods.

c
Marginal Costs
Marginal production, distribution and transaction costs are high enough to make both bundled and unbundled sales unprofitable.
Unbundled sales dominate bundling
Mean valu-ation
c0
Bundling is more profitable than unbundled sales
d
Distribution Costs

Figure 1: Phase diagram for bundling and unbundling strategies as a function of marginal cost and transaction/distribution cost.

2.2 Search

Electronic marketplaces lower the cost of buyers to obtain information about the price and product features of seller offerings as well as the cost of sellers to communicate information about their prices and product characteristics. For instance, a buyer in the market for a 400 MHz Pentium II microprocessor can easily compare the prices of different sellers by using a specialized search engine like Pricewatch (www.pricewatch.com) or Computer ESP (www.computeresp.com), as shown in Figure 2. Similarly, links to manufacturers' Web sites can be used to obtain detailed information about the product features of different laptop computers. By lowering buyers' search costs, electronic markets increase economic efficiency. Not only do buyers incur lower costs even after considering more product offerings, they also benefit from being able to identify and purchase products that better match their needs.

Boxed Pentium II 400MHZ W/ 512K ECC BX80523P400512E Intel Corp. - Netscape
File Edit View Go Communicator Help
Bookmarks Location: http://www.computeresp.com/prdct/740/102.html
Document: Done

Always click for the current prices direct from the retailer's web site.

	Click for Buy Info	Click for Retailer Info	Phone #	State	Credit Card	Cash Price	Approx. Shipping	In Stock	Last Updated
	Sort	Sort	Sort	Sort	-Sort-	Sort	Sort	Sort	Sort
1		MacNet, Inc. NEW	800.404.9976	FL	$878.09	$852.51	29.31275	Check	5- 3-98
2		CMPExpress.com	800.950.2671	PA	$888.78	$888.78	Check	208	4-27-98
3	▸	BuySoftware NEW	888.340.9898	WA	$897.00	$897.00	Check	Call	4-30-98
4		MicroXpress	888.875.9737	IN	$899.00	$899.00	Check	Check	5- 3-98
5	▸	Developer Shed	888.236.2446	KS	$903.33	$903.33	Check	Yes	4-27-98
6	▸	NCBuy Computing Store NEW	888.236.2446	KS	$903.33	$903.33	Check	Yes	4-30-98
7		TechStore.com	415.898.8905	CA	$912.19	$912.19	FREE	Yes	4-23-98
8	▸	Hardware Street	888.447.4406	NV	$913.87	$913.87	$3.95+	331	5- 2-98
9		4D Corp	302.234.7709	DE	$914.88	$914.88	Check	Yes	5- 3-98
10	▸	NECX	800.808.3375	MA	$914.95	$914.95	UPS GND: $3.95	Yes	5- 3-98

ComputerESP **Click on Sort to sort this table by that column.**

Figure 2: Computer ESP price comparison engine

Several Internet-based technologies assist buyers' search: multimedia, high bandwidth, and rating sites provide more product information. Search engines, either generic (like AltaVista in early 1998), hierarchical directories (like Yahoo!), or tools specialized for specific markets such as Pricewatch and Computer ESP for computers and components, or Expedia and Travelocity for airline tickets and other travel products, help buyers identify appropriate seller offerings. Intelligent agents such as Bargainfinder (bf.cstar.ac.com/bf) or Jango (www.jango.com) have been developed to scout the Web and compare product offerings by price or features on the behalf of the buyers. These technologies keep lowering buyers' search costs.

The lower search costs enable new markets to emerge. For example, low buyer search costs and global reach allowed Onsale.com (www.onsale.com) to create markets in goods like second-hand cameras where otherwise the search costs would be too high to enable potential buyers and sellers to find each other in a conventional market. Several other intermediaries are emerging to facilitate the process of matching buyers and sellers. Among many others they include Yahoo!, Pricewatch, Netbot's Jango, and several other search engines, Web directories and shopping agents. Also, they include providers for product information (e.g., C-Net, trade magazines), recommendations and personalization (e.g., Firefly Network), and information about sellers (e.g., Bizrate).

2.3 Price Discovery

Electronic marketplaces enable new types of price discovery to be employed in different markets. For example, some airlines auction last-minute unsold seats to the higher bidders, and Web-based auctions at Onsale.com have created for consumer goods markets that function like the financial markets. Intermediaries like Priceline (www.priceline.com) allow buyers to specify product requirements and their willingness to pay, and then make corresponding offers to the participating sellers, reversing the traditional functioning of retail markets. Finally, agents like Kasbah (ecommerce.media.mit.edu/kasbah) and Tête-à-Tête (ecommerce.media.mit.edu/tete-a-tete) that can negotiate purchases on behalf of buyers and sellers, may restructure the price discovery process in Internet marketplaces (Guttman et al., 1998).

The ability to customize products, combined with the ability of sellers to access substantial information about prospective buyers, such as demographics, preferences and past shopping behavior, is greatly improving sellers' ability to price discriminate, i.e., to charge different prices for different buyers. Price discrimination is a powerful tool that allows sellers to increase their profits, and reduces the consumer surplus enjoyed by buyers. On the other hand, price discrimination enables sellers to service buyers that would otherwise be priced out of the market, an outcome that increases economic efficiency.

These new types of price discover, such as the ability of buyers to make offers and the ability to conduct electronic negotiations between buyer and seller agents, are changing the "microstructure" of consumer markets. Finance theory has shown that market microstructure affects both the efficiency of markets, and the bargaining power of their participants. The increasing importance of electronic commerce emphasizes the need to carry this type of research analysis to electronic marketplaces. It is unclear who the beneficiaries of this process will be. The ability to implement different price discovery mechanisms may result in more efficient markets, and thus benefit buyers and hurt inefficient sellers. As menu costs decrease, sellers will move away from fixed pricing, and more prices will become negotiable (Cortese and Stepanek 1998). While savvy buyers may benefit, the ability to negotiate prices need not be pleasant or result in a good deal, as many visitors to an auto dealership have discovered. Furthermore, when sellers are better informed, they are likely to increase their profits by charging different prices to different buyers. Economic theory predicts that buyers with more bargaining power, typically the more affluent ones, will fare better in this situation.

2.4 Facilitation

The cost of logistics, i.e. the process of transporting products from the seller to the buyer, has been estimated at more than 10% of the GNP (Fortune 1994). Electronic marketplaces improve information sharing between buyers and sellers, helping lower the cost of logistics and promoting quick, just-in-time deliveries and reduced inventories. The distribution of information goods such as newspapers, music, videos and software, is likely to be completely transformed, as the information infrastructure will replace physical distribution systems. Sellers in Internet marketplaces are typically responsible for delivery to their customers, and increasingly contract with third-party providers for direct delivery from the manufacturer to the final consumer, reducing costs and time-to-delivery. Thus, direct sellers like Dell Computer are squeezing out traditional intermediaries such as wholesalers and distributors, while delivery providers such as FedEx and UPS are emerging as major Internet intermediaries, because of their logistics expertise and their economies of scale in distribution.

Electronic payment systems will further lower transaction costs in Internet marketplaces, and micropayment systems will lower the cost of small transactions, enabling new pricing strategies such as the metering of software use. As face-to-face marketplaces are replaced by electronic ones, there is increasing need to protect market participants from opportunistic behavior. Technologies like public key cryptography can provide security and authentication of transactions, while intermediaries like Bizrate (www.bizrate.com) will use information from consumers to keep track of merchant reputations. Credit bureaus and credit card companies will provide credit information or guarantee payment for consumers. Finally, intermediaries like Verisign (www.verisign.com) are emerging as "certificate authorities" that match legal identities to the possession of cryptographic keys—a public key infrastructure.

3. Internet marketplaces and competition

3.1 Impact of lower search costs

The ability of Internet marketplaces to reduce search costs for price and product information may significantly affect competition. Bakos (1987, 1997) shows that lower buyer search costs in electronic marketplaces promote price competition among sellers. This effect will be most dramatic in commodity markets, where intensive price competition can eliminate all seller profits. It will also be significant in markets where products are differentiated, reducing the monopoly power enjoyed by sellers, and leading to lower prices and seller profits. Figure 3 shows the equilibrium prices for a differentiated good with zero marginal cost, which consumers value at *r* and has a degree of differentiation *t*. As search costs fall from very high to moderate, new markets emerge, and both sellers and buyers benefit. However, if search costs continue to fall, sellers are made worse off since buyers can more easily find the lowest cost seller, while buyers benefit from the lower prices and their improved ability to find products that fit their needs.

markup
r
r/2
0
$r^2/4t$
r^2/t
market breakdown
buyer search cost
As search costs fall from very high to moderate, new markets emerge, and both sellers and buyers benefit. However, if search costs continue to fall, market prices fall and sellers are made worse off, while buyers benefit from the lower prices and their improved ability to find products that fit their needs

Figure 3: The impact of buyer search costs in a differentiated market

The dynamics of "friction-free" markets are not attractive for sellers that had previously depended on geography or customer ignorance to insulate them from the low cost seller in the market. As geography becomes less important, new sources of product differentiation, such as customized features or service or innovation will become more important, at least for those sellers who don't have the lowest cost of production. Also, like an arms race where both sides develop more powerful weapons, sellers can exploit the reduction in menu costs to compensate for the lower search costs in electronic marketplaces. Specifically, sellers can make it difficult to compare the price of alternative product offerings, and they can attempt to collect information about buyers that allows more effective price discrimination. Airlines, for example, have implemented extremely complicated and ever-changing fare structures, flight restrictions and ticket availability, sometimes offering hundreds of fares for travel between certain pairs of destinations.

It is also interesting to note that when informational inefficiencies prevail, a large number of sellers does not necessarily result in a competitive and efficient market. If search costs are high, individual sellers do not have a strong incentive to lower their prices because few buyers would discover them. As the number of sellers increases, it becomes more difficult for buyers to locate discounters, and thus the market may become *more monopolistic* as the number of sellers increases! This behavior is likely in certain markets with little or no advertising, such as some markets for professional legal and medical services. Internet marketplaces could provide price cutters with the means to reach a larger fraction of the buyers, and thus undermine the monopolistic nature of these markets.

While there is much speculation about the effect that electronic marketplaces have on prices, thus far there has been little systematic analysis. However, one exploratory study by Bailey and Brynjolfsson (1997) did not find much evidence that prices on the Internet were lower than prices for the same goods sold via traditional retail channels. Their analysis was based on data from 52 Internet and conventional retailers for 337 distinct titles of books, music compact disks and software. Bailey and Brynjolfsson provide several possible explanations for their unexpected findings, including the possibility that search on the Internet during the sample period was not as easy as is sometimes assumed, that the demographics of the typical Internet user encouraged a higher price equilibrium, that many of the Internet retailers were still experimenting with pricing strategies, and that Internet retailers were differentiating their products (e.g. via delivery options or customized recommendations). Clearly, more empirical research is needed in this area.

3.2 Increasing Differentiation and Lowering the Cost of Product Information

A higher degree of product differentiation leads to an increase in seller profits, which may partially or completely offset the decrease caused by lower search costs. Sellers in electronic markets will thus want to increasingly differentiate their product, possibly utilizing the personalization and customization technologies discussed earlier.

Buyers in a differentiated market face two types of search costs: the cost of obtaining price information and the cost of obtaining information about the product characteristics of a seller offering. If sellers can control the *type* of electronic market introduced, they should favor a system emphasizing product information rather than price-shopping.

A key variable for such a system is the cost of product information *relative to the cost of price information*. For instance, an electronic marketplace designed to promote price-shopping makes it easy to compare price information, but might still require a higher-cost inquiry (such as a visit) to obtain detailed product information. For example, a buyer looking for a computer monitor on the Internet can easily compare prices from a large number of sellers, but then must obtain and evaluate the monitor's specifications, assess the seller's reputation and return policies, and ideally locate a display model at a showroom or at a colleague's office.

By contrast, an electronic marketplace can be designed to promote competition based on product features. For example, high-quality multimedia product descriptions in standardized formats could help identify product offerings matching the buyer's preferences, while price information could be left out of these descriptions or could be obscured by offering a large number of prices and making it difficult for the buyers to figure out which one applies.

4. The role of electronic intermediaries

It has been argued that as "friction-free" electronic marketplaces lower the cost of market transactions, it will become easy to match directly buyers and sellers, and as a result the role of intermediaries may be reduced, or even eliminated, leading to "disintermediation." (e.g., see Gellman 1996, Gates 1995). While the growth of Internet marketplaces may lead certain types of intermediaries to extinction, the discussion in the previous sections suggests that electronic marketplaces will more than compensate for this by promoting the growth of new types of electronic intermediaries. These intermediaries will perform functions that include matching buyers and sellers, providing product information to buyers and marketing information to sellers, aggregating information goods, integrating the components of consumer processes, managing physical deliveries and payments, providing trust relationships and ensuring the integrity of the markets.

Presently, Internet-based electronic intermediaries often “freeload” on traditional intermediaries for certain roles, such as the physical experience that is still important in several markets before a buyer can select an appropriate product offering. For example, car buyers may test drive a vehicle at a traditional dealer, and subsequently purchase it through Auto-by-Tel. This clearly cannot be sustained as electronic intermediaries gain a significant market share. Instead, the physical experience component might be unbundled to a physical intermediary. Auto-by-Tel, for example, may pay a fee to the intermediary where the test drive took place, a service that could be provided by a traditional dealership, but also by a specialized showroom, or a car rental company.

Internet-based electronic marketplaces are still at a formative stage, and it is hard to fully predict their impact on the structure of markets. However it is becoming clear that they will promote greater economic efficiency, and help sustain economic growth. In the process, they are creating major transformations, full of strategic opportunities for intermediaries ready to compete by adding value for buyers and sellers rather than by exploiting information asymmetries.

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An Exploratory Study of the Emerging Role of Electronic Intermediaries

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ABSTRACT

It is often argued that as electronic markets lower the cost of market transactions, traditional roles for intermediaries will be eliminated, leading to "disintermediation." We discuss the findings of an exploratory study of intermediaries in electronic markets, which suggest that markets do not necessarily become disintermediated as they become facilitated by information technology. We explore thirteen case studies of firms participating in electronic commerce and find evidence of certain new emerging roles for electronic intermediaries, including: aggregating, matching suppliers and customers, providing trust, and providing inter-organizational market information. Two specific examples are discussed in greater detail to illustrate an unsuccessful strategy for electronic intermediation (BargainFinder) as well as a successful one (Firefly).

KEY WORDS AND PHRASES: electronic data interchange, electronic markets, intermediaries, Internet commerce.

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1. INTRODUCTION

Technologies such as Electronic Data Interchange (EDI) over the Internet and sales over the World Wide Web are emerging as an important medium for market transactions. Firms and individuals increasingly participate in electronic commerce as customers, suppliers or intermediaries. Commercial web sites are established for a variety of reasons, including appealing to potential customers to form new relationships and communicating with current customers to strengthen existing relationships. The importance of such "electronic markets" will rapidly increase in the next few years, as public and private standards are established for information exchange and electronic commerce over the Internet.

Traditional physical markets are often brokered by intermediaries, or parties that facilitate market transactions by providing intermediation services. For instance, the owner of a shopping mall typically provides many intermediation services in the physical world, such as a physical infrastructure and management of the flow of customers visiting the mall. However, the value of these services may be reduced once the relationship moves to an electronic market. In particular, electronic markets do not require services related to the matching of customers and suppliers in the physical space. In fact, the information infrastructure may make it so easy to match customers and suppliers that the role of intermediaries may be reduced or even eliminated. This possibility was identified by Malone, Benjamin and Yates [13], and more recently has been termed "disintermediation" (e.g., see Gellman [10]).

While the possibility of disintermediation raises important questions about the impact of electronic markets on the role of intermediaries, there is a lack of data or empirical studies addressing this issue. Given the scarcity of relevant data, we want to share some preliminary evidence on this subject. The class projects in an MBA class on "Electronic Commerce and Marketing on the Internet" at the MIT Sloan School of Management provided us with detailed reports on thirteen electronic markets, which were selected to span both industrial (business-to-business) and consumer (business to consumer) settings in manufacturing and in services.

Interestingly, this survey suggests that Gellman's disintermediation hypothesis [10] may be only partially true: while some roles of traditional intermediaries may be diminished in electronic markets, new roles for intermediaries are emerging. While our informal data gathering cannot be used for formal hypothesis testing, the insights we gained may be helpful to other researchers in this area. Indeed, in a majority of the markets we surveyed we found that new roles emerge for electronic intermediaries that seem to outweigh any trend towards disintermediation. This finding suggests the need for theory development, rigorous data collection and formal empirical analysis to research the emerging role of electronic intermediaries.

2. ROLES OF MARKET INTERMEDIARIES

Firms and markets can organize in a variety of structures. Malone, Yates, and Benjamin [13] discuss different types of "markets" and "hierarchies" as organizational structures that maximize efficiency in different economic settings. Certain organizational structures include firms or individuals that serve as intermediaries between customers and suppliers. But how do these intermediaries add value?

Several roles of intermediaries have been identified in the literature. For instance, Resnick, Zeckhauser, and Avery [15] suggest that brokers are important in markets because search costs, lack of privacy, incomplete information, contracting risk, and pricing are better managed through a broker. Malone, Yates, and Benjamin [13] define similar reasons to have intermediaries: reducing coordination costs, addressing problems of asset specificity, and promoting standardization. Williamson's transaction cost theory [17] builds on Coase [7] and offers a theory of firm boundaries by arguing that the cost of contracting, enforcing the contracts, and dealing with unforeseen circumstances varies depending on whether a market or a hierarchical structure is employed.

Thus four important roles of market intermediaries suggested by the literature are:[1]

(a) *aggregate* buyer demand or seller products to achieve economies of scale or scope [8, 15] and to reduce bargaining asymmetry [17];

(b) protect buyers and sellers from the opportunistic behavior of other participants in a market by becoming an agent of *trust* [17];

(c) *facilitate* the market by reducing operating costs [13, 15]; and,

(d) *match* buyers and sellers [13, 15].

We now discuss in more detail the above four roles that intermediaries assume in the process of facilitating market transactions. In Section 4, we revisit these roles and we explore their evolution in electronic markets.

Aggregation

Instead of a situation where each customer will have to negotiate individually with an appropriate supplier, and each supplier will have to negotiate terms and fill the orders of individual customers, the intermediary can aggregate the demand of many customers or the products of many suppliers. Potential benefits include reducing transaction costs, taking advantage of economies of scale, and reducing asymmetries in the bargaining power of customers and suppliers. Wholesalers and cooperatives provide examples of intermediaries that typically aggregate customer demands, whereas travel agencies sometimes aggregate products offered by hotels, airlines and ground transportation companies to provide land-and-air packages.

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[1] These roles are only identified to describe certain trends in electronic intermediation. They are not intended to form a taxonomy of the functions of an intermediary, and thus although they are distinct, they are not necessarily orthogonal or complete as a set.

Trust

Intermediaries may be able to prevent the parties to a market transaction from behaving opportunistically. Because of their long-term participation in the market, intermediaries have high incentives to ensure that market transactions are completed, and that each party involved – the supplier and customer – lives up to their end of the bargain. Since the parties to a transaction may need in the future to interact with the intermediary even if they never do business with each other again, the intermediary may be in a better position to prevent opportunistic behavior, compared to other market participants. Also, intermediaries are typically involved in many more transactions than any individual customer or supplier, and as a result may enjoy economies of scale in their investments in monitoring technology, or they may be able to better insure against certain transaction failures. Travel agents, for example, protect customers from the risk of carrier failure, a valuable service when purchasing tickets for travel on financially weak airlines.

Facilitation

Information transfer between organizations is costly, especially when it involves "implicit" or contextual knowledge that cannot be easily articulated. In these instances, an intermediary can facilitate the exchange of information by coordinating the process and translating the information that is sent between the supplier and the consumer. Intermediaries can also facilitate markets by reducing overall processing and coordination costs. For example, full connectivity in an disintermediated market with m buyers and n sellers would require each of the m buyers to connect to all n sellers, for a total number of mn connections [13]. An intermediary, on the other hand, could collect full information about the sellers with m inquiries, and pass that information to the buyers with n additional transfers of information, for a total of $m+n$ transactions. In markets with many customers and/or suppliers, $m+n$ will be significantly smaller than mn, signifying that an intermediary may be able to reduce significantly the processing and coordination costs in a market. Finally, intermediaries can facilitate markets by providing associated services, such as processing of payments or handling of documents. Travel agents, for example, facilitate transactions by providing information on several travel alternatives, processing payments and printing tickets, invoices and itineraries.

Matching

The need of customers to locate an appropriate supplier and for suppliers to find appropriate customers can be accommodated by an intermediary that becomes a focal point for this match. Intermediaries might be better at this than customers and suppliers left on their own, for instance because intermediaries might be able to provide a price discovery mechanism or acquire better knowledge of the market demand and supply characteristics. Furthermore, since intermediaries participate in transactions with different customers, different suppliers, and potentially in different industries, intermediaries can analyze consumer preferences across products, suppliers and industries. Intermediaries can utilize this type of information in improving their ability to match customers and suppliers, or they may offer this marketing and customer demand information to suppliers. Travel agents, for example, routinely use their knowledge of customers' needs and the available travel options to select the best alternative for their customers.

The ability of an organization to perform well in the above four roles is central to its success as a market intermediary. The New York Stock Exchange, for example, has been very successful by excelling in providing trust (e.g., through its reputation, regulatory framework, and elimination of trading risk), in facilitating markets (e.g., through its ownership of the SIAC system for the settlement and clearing of transactions) and in matching buyers and sellers (e.g., through its specialist-based price discovery system). Yet, its relative neglect of the aggregation role has provided a niche for POSIT, an intermediary run by the International Trading Group that focuses on the trading of baskets of securities, which is the fastest growing off-exchange dealing system at the time of this writing.

3. ELECTRONIC MARKETS

An electronic market exists when a supplier provides goods and services to a customer in a transaction partially or fully automated by information technology. For example, Bakos [1] defines an electronic market system as an interorganizational information system that allows the participating buyers and sellers in some market to exchange information about prices and product offerings. Malone, Yates, and Benjamin [13, 14] discuss further the attributes that define an "electronic market." The increased use of electronic data interchange (EDI) to conduct business-to-business transactions, and the increasing use of the Internet for both business-to-business and business-to-consumer transactions, present new areas of research within the context of electronic markets. While EDI and the Internet have very different origins, they are the most ubiquitous infrastructures for electronic markets, and recently the boundary between them seems to be blurring.

EDI (Electronic Data Interchange) originated in the 1960s. Its intended purpose was to replace paper communication with electronic communication. This would increase the speed of communication and facilitate record keeping (e.g., there is no need for information from an invoice printed by one computer system to be retyped by the other party). Since then, EDI has grown to provide transaction standards for a wide range of electronic markets. Today, the growth rate of EDI is approximately 45% per year with more than 90% of the Fortune 1000 companies using EDI standards [12, p. 334]. While most EDI transactions are still sent over value added networks (VANs), the number of transactions over the Internet is rapidly increasing and poised to surpass VAN transactions before the end of the decade.

The Internet started with the ARPANET in the 1960s and has grown to support electronic markets even faster than EDI.[2] As Clark [5] points out, the design philosophy of the Internet was not to reduce the transaction costs or support electronic markets, but to provide a robust heterogeneous distributed computing environment for applications that may not yet be developed. Only in the past few years has the Internet been transformed to improve security and privatize its infrastructure. Both of these developments have promoted electronic commerce applications over the Internet infrastructure. Aside from the EDI transactions, the Internet also provides a host of applications including electronic mail and the World Wide Web, which can support electronic markets.

Several authors in the literature, including Bakos [1], Clemons, Reddi and Row [6] and Malone, Yates and Benjamin [13] have pointed out that electronic markets are likely to have a major impact on the organization of economic activity and on the role of intermediaries in markets.

4. MARKETS SURVEYED

We obtained detailed reports on the strategy and intermediation characteristics of thirteen firms participating in thirteen electronic markets. These reports were in partial fulfillment of the required class projects in an MBA class on “Electronic Commerce and Marketing on the Internet” taught at the MIT Sloan School of Management. The reports also included the results of structured interviews with top-level managers at the studied firms. This data was examined to determine how intermediaries benefit participants in electronic markets by reducing transaction and coordination costs. The purpose for which information technology is adopted, the setting in which it is put to use and the process through which it is implemented, all determine what organizational changes will result from it, affecting, in turn, the emerging roles of electronic intermediaries.

Participants in the thirteen electronic markets surveyed were promised anonymity due to the proprietary nature of the information they were asked to disclose. These firms were selected to operate in markets for both physical goods and information goods. The physical goods intermediaries surveyed included industries in the service sector (retail) and in manufacturing (automotive). For these industries, intermediaries were surveyed in both the industrial (business-to-business) and the consumer (business to consumer) markets. In the information goods sector we were only able to identify intermediaries in business-to-consumer markets. Thus five types of intermediaries were surveyed, with 2-4 firms in each category. These categories are described below, with the number of corresponding firms surveyed in parentheses, and are shown in Table 1.

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[2] While it is difficult to find a common metric to compare the two infrastructures, as of this writing the number of companies that are adding new Web sites to the Internet averages to approximately 73 per day [16].

	Industrial (business-to-business)	*Consumer (business-to-consumer)*
Service (retail)	2	3
Manufacturing (automotive)	2	3
Information	none	3

Table 1. Types of Electronic Markets surveyed

Retail – Business-to-Business (2)

This category includes two electronic markets for products of low asset specificity with multiple suppliers and multiple customers. The amount of information necessary to describe these products is limited since both the customer and the supplier know the product and there is a high degree of standardization. This business-to-business retail market differs from the consumer retail market as transactions between customers and suppliers take place more frequently in the business-to-business market, and relationships last for longer periods of time. The technology employed in these markets was typically based on electronic data interchange (EDI) as EDI works well with highly standardized transactions between businesses that have an existing relationship.

Retail – Business-to-Consumers (3)

Similar to the retail business described above, transactions in this market involve goods with low asset specificity and high degree of standardization. However, these markets directly address consumers who are purchasing for personal use. The infrastructure of these markets was not based on EDI, and instead relied on Internet-based applications.

Automotive – Business-to-Business (2)

Two industrial (i.e., business-to-business) electronic markets were surveyed in the automotive parts industry. The products traded in these markets have a high degree of asset specificity as several car parts can only fit a single model. Relative to the retail sector, the set of possible business partners is smaller and their relationships are longer-term. The market infrastructure in these electronic markets was primarily based on EDI over VANs.

Automotive – Business-to-Consumers (3)

Three electronic markets in the retail automotive sector were studied. As the firms investigated cater to individuals, the relationships are not as long-lived or as complex as in the case of the business-to-business markets, and they are characterized by relatively infrequent transactions.

Information Goods – Business-to-Consumers (3)

In the final category, we looked at three firms that do not sell physical goods or services, but they rather sell information. In these markets, the electronic market infrastructure not only can bring together a customer and a supplier, but it can also manipulate the information good changing its characteristics, and can serve as the distribution channel, delivering the good to the customer.

To assess the impact of electronic markets, the firms surveyed were asked to rate the importance of certain intermediation services in the corresponding electronic market, and to compare the importance of these services in the electronic market with their importance in the traditional physical market. Table 2 lists eight intermediation services that were examined this way, and their correspondence to the four roles of market intermediaries identified in Section 2.

Role of market Intermediaries	*Physical-oriented intermediation service*	*Information-oriented intermediation service*
Aggregation	Combination of customer orders in wholesale orders	Provision of one-stop shopping
Trust	Provide legal contracts to govern market participation	Provision of authentication and secure communications
Facilitation	Provision of market-specific infrastructure	Exchange of messages between customers and suppliers
Matching	Provision of rich product information	Provision of marketing information to suppliers

Table 2. Intermediation Services compared between traditional and Electronic Markets

5. INTERPRETATION

Table 3 summarizes the relative importance of the intermediation services listed in Table 2, as affected by the move from traditional markets to electronic markets. For our sample of thirteen electronic markets, a "yes" indicates an increasing role of the corresponding intermediation service as we move from a physical market to an electronic market. A "no" indicates a stable or decreasing role, and a "maybe" indicates that the opinion of the respondents was divided. Table 3 is based on the self-reported assessments of the firms participating in the surveyed electronic markets, i.e., without comparing these characteristics to a matching control group of markets with traditional non-electronic intermediaries. While our sample is too small for formal empirical analysis, this information can still provide useful insights on the changing role of intermediaries.

	Aggregation		Trust		Facilitation		Matching	
	Wholesale Aggregation	One-stop Shopping	Contractual Arrangements	Security and Authentication	Market Infrastructure	Information Exchange	Product info to Customer	Marketing info to Supplier
Retail, Business-to-Business	No	No	No	Yes	No	Yes	Maybe	Yes
Retail, Business-to-Consumers	No	Maybe	No	Yes	No	Yes	Yes	Yes
Automotive, Business-to-Business	No	No	No	Yes	No	Yes	No	No
Automotive, Business-to-Consumers	No	Yes	No	Yes	No	Yes	Yes	No
Information Goods, Business-to-Consumers	No	No	No	Yes	No	Yes	Yes	Yes

Table 3. Does the move to electronic markets increase the importance of these intermediation services?

Aggregation

As transactions move from a physical market to an electronic market, the need for an aggregating intermediary may diminish, as was the overall trend reported by our survey respondents. This may lead to disintermediation of the aggregation role of market intermediaries. For example, the reduced search costs in electronic markets may allow some customers to locate all product offerings they need without relying on the one-stop shopping and physical infrastructure of an intermediary. Alternatively, customers could use the Internet to self-organize in electronic communities that possess bargaining power in dealing with suppliers. Consistent with this, the firms surveyed in the retail and automotive sectors did not use an intermediary. Even though the pricing of the goods in these markets was non-linear (i.e., it allowed for quantity discounts), customers were able to receive better prices by working directly with the suppliers. Going through the electronic intermediaries resulted in intermediary charges that would negate the benefits from placing larger orders.

Although the markets we surveyed were consistent with disintermediation of the aggregator role of electronic intermediaries, the reduced coordination costs enabled by the market infrastructure may promote the emergence of intermediaries that increase customers' collective bargaining power, such as electronic cooperatives. Or, as search costs are reduced and geographic location becomes unimportant in selecting suppliers, the number of potential suppliers can increase dramatically. This can result in a very large number of potential interactions among product offerings, and the need will emerge for intermediaries that can offer complete solutions.

Finally, while many vendors are seeking to sell their goods directly via the World Wide Web, it is interesting to note that aggregating intermediaries have also found a role on the Internet. Some of the most successful have been firms such as America Online, Electric Library and the Microsoft Network, which resell digital information goods produced by other firms. However, their success is much less dependent on the traditional role of assembling a variety of sellers in one location. Instead, the emergence of electronic markets in digital information goods is reflective of a new class of opportunities for intermediaries acting as content aggregators.

Digital information goods, such as a news article, a digital image or a song, allow perfect copies to be created and distributed almost costlessly via the Internet. As shown by Bakos and Brynjolfsson [3], a strategy of selling a bundle of many distinct information goods for a single price often yields higher profits and greater efficiency than selling the same goods separately. In other words, the nature of information goods and the emergence of an electronic market infrastructure that allows their efficient distribution, create new roles for content aggregating intermediaries that will bundle large numbers of information goods.

Trust

All electronic market participants in our survey placed greater value on electronic authentication and security services in electronic markets, and indicated a relative decrease in their reliance on legal contracts. This reflects the fact that both the legal framework and the technological mechanisms for ensuring trust in electronic market transactions are not universal, and are still in their nascent stages. Consequently, participants in electronic markets are frequently concerned that it is possible to falsify electronic documents or create fraudulent electronic presence, which increases the importance of the trust role of electronic intermediaries, as is argued by Froomkin [9]. Even when technologies such as digital signatures become widely adopted and incorporated in the commercial legal framework, intermediaries will play an important role in providing the trust and security infrastructure. On the other hand, the need for intermediaries to act as providers of trust may decrease once an adequate legal framework for electronic commerce is in place.

In the business-to-business cases, trust was typically provided by the network provider, usually an EDI/value added network (VAN). The VAN provider ensures the trustworthiness of participants by screening them as they connect to the infrastructure. Part of this screening process includes the high fixed cost to join the infrastructure. Network providers can typically guarantee the security of transactions on the network, either because they own the network or because they have established security procedures in cooperation with the networks they interconnect with.

Among the surveyed firms, security was a more serious concern in the Internet-based electronic markets. Messages may get routed through networks over which the message originator has no control, and security requires the deployment of cryptographic technologies such as public key encryption, an area where few companies have adequate expertise. Thus the provision of trust services for Internet commerce is an important role for electronic intermediaries, and several firms are currently jockeying for position to establish themselves in that role.

Facilitation

The firms surveyed reported a reduced need for infrastructure-related facilitation services as they move from physical to electronic markets. Indeed, in an electronic market, suppliers and customers will typically agree to use a common electronic commerce infrastructure (e.g., EDI over a VAN or the Internet) so the value of a facilitator is reduced. In other words, the communications network and the standards for electronic commerce replace the intermediary as facilitator. This trend could lower the demand for intermediaries, and potentially lead to disintermediation.

Once a path to connect a supplier and a customer has been established, information transfer can take place without the need for an intermediary. However, most firms surveyed did not report this type of disintermediation in their markets: it seems that electronic markets create the need for increased exchange of information with other market participants, and this may discourage the bypassing of intermediaries. Naturally, as market participants become more proficient in taking advantage of the information infrastructure, bypassing of more intermediaries could take place in the future.

Matching

The emergence of electronic markets may substantially reduce search costs, as is proposed by Bakos [1, 2]. The result of this trend for electronic market intermediation is ambiguous. On one hand lower search costs will reduce the importance of intermediaries by allowing buyers to search directly for appropriate suppliers, while on the other hand the overwhelming abundance of information offered by Internet-based market infrastructures may increase the need for intermediaries that can help to match customers and suppliers by filtering this information.

This ambivalence is reflected in our survey, with participants responding that matching suppliers and customers becomes more important in the business-to-consumer markets, but less important in the business-to-business markets. A substantial fraction of the business-to-business transactions involved firms that had worked together before, and thus there was no need to seek out new business partners. Transactions in the business-to-consumer electronic markets were characterized by lower frequency, and participants indicated that intermediaries could add value by providing market knowledge that helps match customers and suppliers.

The survey respondents also differed on their assessment of the ability of electronic intermediaries to provide marketing information. In an electronic market, this marketing information becomes more dynamic and easier to customize, so the intermediary can supply more accurate data. When marketing data is in digital form, manipulating data to understand the behavior of a particular customer or groups of customers is much easier.

6. BARGAINFINDER AND FIREFLY

To probe further the emerging roles of electronic intermediaries, we now discuss two firms that have followed different strategies for market intermediation in the retail music industry. These cases demonstrate that electronic intermediaries can be important in providing some services, while they may not be useful at filling certain functions associated with traditional intermediaries. It is thus important for intermediaries in electronic markets to identify a proper strategy that will be beneficial both to the participants in the electronic market and to the intermediaries themselves. Failure to do so may result in strategic failure for the electronic intermediary.

BargainFinder (http://bf.cstar.ac.com/bf/) was developed by Andersen Consulting and provides an intermediary that searches several compact disc (CD) stores on the World Wide Web. A customer types the title and artist of the CD he or she would like to purchase, and BargainFinder dispatches a price query agent to the different Web stores to help the customer compare prices. Since BargainFinder only provides users with price information, it promotes price competition among CD suppliers. The BargainFinder service is thus at odds with the incentives of suppliers in the CD market. Not surprisingly, as long as only a small fraction of CD buyers use BargainFinder, CD suppliers are resisting BargainFinder. At the time of this writing, the authors searched via BargainFinder for a popular CD that is easily available at a retail store. Of the eight Web stores the BargainFinder agent searched, only three reported back their prices, with the remaining five stores blocking the BargainFinder agent from searching their database.

The second electronic market intermediary, Agents Inc. (http://www.agentsinc.com) has been much more successful, attracting more than one million users as of this writing. Their flagship product, Firefly, is as a matching intermediary. Firefly makes individualized recommendations for new music CD's based on a member's ratings for music he or she is familiar with. Using this system, a member can ask Firefly to recommend other music that he or she is not aware of, but can be expected to like. The same technology can be used in areas other than music, as well as to find other members with similar preferences in music or other areas. This "collaborative filter" is a powerful way for an intermediary to provide value to all users.

The relative success of Firefly when compared to BargainFinder may be explained by looking at customers' and suppliers' incentives for participation. In the case of Firefly, it is clear that exposing potential customers to new music can expand the market and increase sales. With BargainFinder, on the other hand, there is a disincentive for suppliers to disclose their prices since then they will have to compete solely based on price. These two electronic intermediaries demonstrate that providing value to both sides of the market is essential to avoid incentive compatibility problems. BargainFinder's role of matching customers and suppliers based on price does not meet this test. In contrast, the marketing information and matching intermediary roles of Firefly do add value, and thus Firefly has been successful.

7. CONCLUDING REMARKS

While some of the traditional roles of intermediaries may become less important as information technology facilitates communication between customers and suppliers, the need for intermediaries is not likely to be eliminated in the near future. Intermediaries in electronic markets are likely to assume important roles that will include aggregating information goods, providing trust relationships and ensuring the integrity of the market, matching customers and suppliers, and providing marketing information to suppliers.

Differences in the nature of electronic markets will affect the role of intermediaries. In markets such as consumer markets, characterized by a large number of products and infrequent purchases, the matching role of intermediaries will be more important. Markets with fewer suppliers and customers and frequent purchases, such as industrial markets in the automotive industry, will have less need for matching intermediaries. While businesses often have high repetition and strong relationships with their suppliers, consumers are more likely to express dissatisfaction with suppliers through "exit" rather than "voice" [11]. As a result, intermediaries in consumer-oriented electronic markets may help reduce the search space and introduce users to " communities of interest" for peer recommendations. Finally, intermediaries can provide marketing information that allows suppliers to tailor their products based on their marketing strategy and on their customers' needs.

While both theory development and formal empirical research is needed to study the intermediation benefits in electronic markets, the reduction in transaction costs may not provide the best measure for these benefits. As argued in the work of Brynjolfsson and Hitt [4] on the "productivity paradox," the metrics based on transaction costs may originate in a market paradigm that is inappropriate for electronic markets. A newer paradigm of customized goods, reduced delivery time, and greater customer satisfaction may be more difficult to measure, but may be the one appropriate to use for electronic markets, as it is in line with the roles of intermediaries in these markets.

Contrary to the predictions of disintermediation, the movement to electronic markets does not seem to result in the elimination of intermediaries, as electronic markets will require intermediation services, albeit in ways that differ from traditional physical markets. Some roles of electronic intermediaries may be similar to the roles of physical intermediaries, while other roles of physical intermediaries may indeed be eliminated in electronic markets, and new roles may emerge for electronic intermediaries.

Finally, it no longer seems appropriate to separate electronic markets into EDI-based and Web/Internet-based electronic commerce. As interoperability between networks, user communities, and standards becomes commonplace, it will provide complementary rather than competing infrastructures.

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THE EVOLUTION OF ELECTRONIC MARKETPLACES: AN EXPLORATORY STUDY OF INTERNET-BASED ELECTRONIC COMMERCE WITHIN THE AMERICAN INDEPENDENT INSURANCE AGENCY SYSTEM

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ABSTRACT

Evolving competitive, organisational and technology environments drive organisations to continually evaluate how information technology resources can be exploited for competitive value. The emergence of a global information infrastructure has spawned an entirely new area for competitive exploitation, electronic marketplaces.

This paper first presents a review and synthesis of the conceptual and empirical literature on electronic marketplaces. Drawing upon multiple theoretical perspectives, we develop a framework for analysing their potential influences on market and industry structure. This conceptual framework is then applied to an empirical assessment of the potential of the Internet as an electronic marketplace for the American Independent Insurance Agency System.

> *"It was no accident that salesmanship had a renaissance in the merchandising of insurance, the invisible commodity. For insurance was complicated and required detailed explanation to everybody, but especially to the democratic millions who in America would have the opportunity to become insurance customers... the abstract and complex qualities of insurance together with its intimate and personal aspects, continued to keep it as a last preserve for the salesman against advertising"*
> Daniel Boorstin, Librarian of Congress

INTRODUCTION

Coase (1937:22) defines the firm as consisting of "the system of relationships which comes into existence when the direction of resources is dependent on an entrepreneur". For over half a century, scholars have followed Coase's insight into the nature of the firm by recognising firms as collections of activities that are coordinated together to produce, market, deliver, and support the firm's product or service (Williamson 1975; Porter 1985; Hines 1993). The manner and structure through which a firm manages its relationships with its buyers and suppliers form its value system.

The implementation of value systems was partly facilitated by the development of information systems that cross organisational boundaries. Inter-organisational information systems, first described by Barrett and Konsynski (1982), electronically link firms to their suppliers and distributors. Reported benefits from inter-organisational systems include increased efficiency of order processing, reduced costs from just-in-time inventory management, locking in trading partners through network participation, customisation of products and services, improved co-ordination at the interface between the customer and supplier, improved organisational efficiency, better information management, and lower overall co-ordination costs (Bakos 1991; Steinfield, Kraut and Plummer 1995). These electronic interactions provided the early foundation for electronic marketplaces.

Within the broader sphere of electronic commerce, advancements in information technology have influenced the different mechanisms that co-ordinate the flow of information and commerce. Williamson (1975) proposed that firms exist to reduce the cost of negotiating, monitoring and executing transactions that are required to acquire goods and services in the open market, with the distinction between a market and a hierarchy based on the economic location of production. Firms choose vertical integration to control transaction processes when transactions costs are excessive while choosing to participate in markets when transaction costs are low (Nouwens and Bouwman 1995).

With the introduction of computing and communications technologies into the processes through which firms manage and co-ordinate their transactions, traditional hierarchical and market co-ordination mechanisms are affected, culminating in electronic hierarchies and electronic markets (Malone, Yates and Benjamin 1989). Bakos (1991) defines an electronic hierarchy as an electronic link that serves as a tool for bilateral information sharing and defines an electronic market as a market system that allows buyers and sellers to exchange information about market prices and product offerings, thus representing an investment in multilateral information sharing. As the presence of electronic hierarchies and electronic markets has increased in the commercial environment, different theories have emerged to explain their use and future direction.

The ***Electronic Markets Hypothesis*** (EMH) predicts that the effect of technology on market mechanisms will increase the proportion of economic activity coordinated by markets, with a shift from hierarchies (Malone, Yates and Benjamin 1987). The theory states that advances in computing and communications technology will facilitate an evolution from electronic hierarchies, through biased and unbiased electronic markets, to a personalised electronic market.[1] Examples offered by Malone et al. to support the EMH include airline reservation systems, and companies such as IBM, Xerox, and General Electric (1987, 490).

The ***Move to the Middle Hypothesis*** (MMH) offers a refinement on the EMH. The MMH recognises advances in computing and communications have affected the costs of co-ordination in which value chain restructuring will be characterised by increased outsourcing and an emphasis on close, long term relationships with suppliers (Clemons, Reddi and Row 1993). In short, the MMH predicts the movement of activity along the electronic hierarchies/markets spectrum will be towards the middle of the spectrum. Thus, the reduction in transaction costs will not cause an increase in the optimal number of suppliers, rather buyers and suppliers will work closer together and develop longer term relationships.

In limiting the number of suppliers, a firm can be motivated by ***Non-contractible Investments***, such as quality, responsiveness, trust, information sharing and innovation (Bakos and Brynjolfsson 1993). It has been proposed that information technology investments are increasingly becoming non-relationship specific, and thus, will be made with fewer suppliers and for longer time periods due to economies of scale, incentives to suppliers, reduced benefits of search, return on investment, learning curve effects and other incentives (Clemons, Reddi and Row 1993). Bakos and Brynjolfsson (1993) found that although information technology has reduced costs and theoretically allows for more suppliers, the benefits gained by closer buyer-supplier relationships offset the possible benefits of more suppliers (1993). These relationships of few suppliers with increased co-operation and interaction between buyers and suppliers have emerged as value-adding partnerships (Clemons, Reddi and Row 1993).

ELECTRONIC MARKET CHARACTERISTICS

To understand the cost factors that buyers consider when participating in electronic marketplaces, it is necessary to consider electronic market characteristics. The above mentioned theories (EMH and MMH) attempt to address the business issues organisations face when trying to develop electronic links to buyers and suppliers. Along with the logistical and strategic issues, it is important to consider market conditions, specifically whether the organisation is participating in a ***commodity or differentiated market conditions***. Bakos (1991b) examined how buyers behave when they search for sellers in commodity and differentiated markets. Commodity markets are characterised by identical products offered by like sellers, whereas differentiated markets are more common because they offer a variety of different product offerings to meet the wide range of buyer needs and preferences. In a commodity market, buyers will typically choose the product offered at the lowest cost (including search, transportation and other related costs). Commodity markets reveal the following characteristics (Bakos 1991b, 298-299):

- seller prices decrease as the cost of search decreases
- the amount of search increases as the cost of search decreases
- the amount of search increases as seller prices become more dispersed
- ceteris parabus, as seller prices become more dispersed, buyers' total costs decrease

With the introduction of technology into a commodity market and the creation of an electronic marketplace, the ability of buyers to search is increased. Thus, the ***distribution of price and product information*** can become more efficient and effective.

In differentiated markets buyers consider the various price and product offerings available, and determine the product's ability to adequately match their needs. A number of differences exist separating a differentiated market from a commodity market, including (Bakos 1991b, 300-301):

- "...consumer preferences determine the location of their ideal product or product mix"
- "...the heterogeneity of consumers and product offerings is central to the ability of sellers to exploit buyer search costs and thus extract monopolistic rents"
- "...electronic market systems providing product and price information may generate substantial allocational efficiencies by enabling customers to locate suppliers that better match their needs"

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[1] In a biased market the information in the system and/or the system structure favors a particular organization or person, whereas in an unbiased system the information and system structure are unbiased towards the market participants. A personalized electronic market provides customized information tailored to the system user's needs.

A buyer's search process is very complex with product offering and search cost factors interacting differently. However, with the introduction of information systems into a differentiated market to create an electronic marketplace, it is suggested substantial impacts and potential changes occur to organisational and market structures.

The introduction of ***Agency Theory*** (i.e. the recognition that the operation of a market is not costless, as is assumed in classic economic literature, and consequently that a firm can be a substitute for the market mechanism created to reduce the costs of transactions) shows that a large amount of a firm's costs are related to the acquisition and processing of information and can therefore be reduced by application of information technologies (Gurbaxani and Whang 1991, 71). Thus, with the introduction of organisational information systems, firms not only have the potential to reduce internal costs, but can also, with the development of customer based inter-organisational information systems, improve their ability to access a wider range of buyers due to reduced buyer search costs.

As discussed previously, whether the seller is participating in a differentiated or commodity market influences the manner through which buyers search for a product or product mix. The role of an information system to distribute product/service and price information through an electronic market can serve to improve allocational efficiencies and decrease overall cost.

Allocational efficiencies and cost reductions are attributed to three distinct affects information technology has on organisational and market structure (Malone, Yates and Benjamin 1987, 488-489):

1. ***electronic communication effect*** -- information technology can allow more information to be communicated in the same amount of time while decreasing the costs of this communication dramatically.
2. ***electronic brokerage effect*** -- electronic markets, by electronically connecting many different buyers and suppliers, can assist the matching of buyer preferences and supplier characteristics, thus increasing the number of alternatives that can be considered, increasing the quality of the alternative eventually selected, and decreasing the cost of the entire product selection process.
3. ***electronic integration effect*** -- information technology can be used not just to speed communication but to also change the processes that create and use the information.

The three electronic effects described by Malone et al. contribute towards illustrating how information systems, deployed and used to create an electronic marketplace, have the potential to improve organisational and industry efficiency and reduce costs. Two factors are noted to influence the utilisation of the electronic marketplace and its development as either a hierarchy or a market. "Two... more specific factors that can be changed by information technology are important in determining which co-ordination structures are desirable: **asset specificity** and **complexity of product description**" (Malone, Yates and Benjamin 1987, 486).[2]

These factors are suggested to influence whether a product or service is biased towards participating in an electronic market or an electronic hierarchy. It has been proposed the more complex and asset specific a product or service the more likely it will be suited for an electronic hierarchy rather than an electronic market.

Assuming a product or service is suited for an electronic marketplace, the types of characteristics an electronic market demonstrates are important for the seller to understand and manage. Bakos (1991, 1991b) identifies certain characteristics of electronic markets:

- reduction in buyer search costs and increased ability to search for product or product mix information and price
- promotion in price competition among sellers
- reduction in supplier market power
- reduction in buyer search time
- reduction in seller time to communicate product and price information
- the benefits of participation in the electronic market increases as participants increase
- participants are influenced by costs that could be incurred by switching from one electronic market to another
- large amounts of initial capital investment required for participants
- the benefits for market participants are uncertain
- the electronic market offers economies of scale and scope
- the timetable for change in an electronic market is uncertain

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[2] Asset specificity includes site (whether a resource can be moved), physical (a tool or resource designed for a single purpose), human (a physical or mental skill that can not be readily applied to another purpose), and time (its value is highly dependent on a specific time period of use). Complexity of product description refers to the amount of information needed to specify the attributes of a product in enough detail to allow potential buyers to make a selection.

Along with the market characteristics previously described, other network attributes interact to influence the promotion and use of hierarchical and market structures (Steinfield, Kraut and Plummer 1995), including:

- in addition to multiple buyers and suppliers, a need exists for some form of third party market maker to create a network to facilitate search and product/service matching
- the network's ability to allow rich product descriptions for complex products
- network openness to allow easy communication with new participants, public protocols widely accepted and adopted by market participants, widespread participation, and low costs for new entries onto the network
- the extension of open networks to end consumers to support electronic markets
- public networks reduce the constraints on connecting uncertain, low volume trading partners or potential partners

The characteristics and attributes of electronic networks have been forwarded to help practitioners and researchers understand the nature an electronic market and related environmental conditions. Such an understanding not only furthers the research into electronic marketplaces, but also assists in providing a strategic perspective in which to assess electronic markets.

MARKET INTERMEDIATION AND DISINTERMEDIATION

It is widely argued that an inevitable effect of electronic commerce will be disintermediation (i.e., removal of the "middlemen"). However, other claims have been made that electronic commerce will not result in disintermediation, rather intermediation will continue to prosper and provide a valuable role in electronic commerce.

The importance of understanding electronic markets and their effects is increased when one examines how they influence organisational functions and decision processes, also known as the decision to either "make or buy." Transaction Cost Theory (TCT) states that a firm has two options for organising its economic activities: the internal hierarchy of vertically integrated processes of the organisation, or the reliance on external organisations in the open market to perform business processes (Coase 1937, Williamson 1975). With the link of TCT to electronic markets (Malone, Yates and Benjamin 1987), researchers have argued that as costs are reduced by information systems, the systems can be extended to reach end consumers (Benjamin and Wigand 1995). Thus, with the introduction of inter-organisational systems and the creation of electronic markets the manner through which industries are structured and firms relate to buyers and suppliers is questioned.

Researchers have attempted to understand the role intermediaries will have in inter-organisational systems as they emerge into electronic marketplaces. Benjamin and Wigand (1995b) and Thornton (1994) explore how industry value chains and transaction patterns can be affected by electronic markets (Figure 4.1). In a digital environment, producers originally limited to a distribution network of wholesalers and retailers, can bypass those members of the value chain to directly interact with members further down the chain or sell directly to end consumers.

Producer
Wholesaler
Retailer
Consumer
Producer
Retailer
Consumer
Producer
Consumer

Figure 1 Value Chains and Transaction Patterns

Source: Adapted from Benjamin and Wigand (1995b): "Electronic Markets and Virtual Value Chains on the Information Superhighway", Sloan Management Review, Winter, 62-72, and Thornton (1994): "Revolution in Japanese Retailing", Fortune Magazine, February, 144

Some researchers have explored why and how producers will attempt to directly interact with end consumers. Sarkar, Butler and Steinfield summarise the research best by stating, "...one fundamental question, therefore, is to what extent producing organisations would take advantage of direct electronic links with consumers, and whether in the process, intermediaries will be eliminated from the value system" (1995, 3).

Benjamin and Wigand (1995) clearly state that market intermediaries are threatened by the National Information Infrastructure (i.e. an electronic market) because of market benefits, "...consumers will choose alternative forms of transactions in favour of price, high quality, selection choice, and time savings" (1995b, 70).
The Threatened Intermediary Hypothesis (TIH) states that an electronic market network can be extended to directly link consumers with producers, and in doing so, lower transaction costs producers incur when marketing and selling to end consumers (Sarkar, Butler, and Steinfield 1995). For example, in a three member value system (Figure 4.2), possible transaction costs and intermediary value dictate which channel a producer uses to market and sell products for consumption. If the cost of transaction one (T1) is more than transaction two (T2) and transaction three (T3) combined, than the intermediary is valued and used. However, if the cost of T1 is less than T2 and T3 and the market value of the intermediary is not needed, than the intermediary is bypassed.

Intermediary
T2
T3
Producer
Consumer
T1

Figure 2 Value System Transaction Patterns

Source: Adapted from Sarkar, Mirtra B., Brian Butler and Charles Steinfield (1995): "Intermediaries and Cybermediaries: A Continuing Role for Mediating Players in the Electronic Marketplace", Journal of Computer Mediated-Communication, 3, 1-17 [URL:http://jcmc.huji.ac.il/]

Benjamin and Wigand noted the threat of disintermediation to market participants by stating, "...all the stakeholders in an industry value chain must consider whether their place in the chain is threatened and, if so, what long term strategies to experiment with" (1995b, 71). However, "...rather than the highly abstracted view of intermediaries as providing a single unified service known as 'co-ordination', the roles of intermediaries must be considered in more detail in order to understand the impact of the NII (i.e. an electronic market)," including the following multifaceted functions (Sarkar, Butler and Steinfield 1995, 7-11):

- Search and Evaluation
- Needs Assessment and Product Matching
- Customer Risk Management
- Product Distribution
- Product Information Dissemination
- Purchase Influence
- Provision of Customer Information
- Producer Risk Management
- Transaction Economies of Scale
- Integration of Consumer and Producer Needs

Bakos and Bailey (1997, 2-4) also addressed the issue of market value provided by market intermediaries and noted intermediaries provided the following five functions:

- aggregate buyer demand or seller products to achieve economies of scale or scope and to reduce bargaining asymmetry
- protect buyers and sellers from opportunistic behaviour of other participants in a market by becoming an agent of trust
- provide marketing information to suppliers
- facilitate the market by reducing operating costs
- match buyers and suppliers

With the advancement of multidimensional functions as added value intermediaries provide in an industry value system, a more in-depth analysis and understanding is needed to understand how electronic markets can lower transaction costs and support value adding functions previously provided by market intermediaries, or the possibility that new intermediary roles and value added functions will emerge for market participants. Sarkar, Butler and Steinfield suggested "...not only is it likely that widely available information infrastructures will reinforce the position of traditional intermediaries but the networks will also promote the growth of a new generation of intermediaries" (1995, 1).

Sarkar, Butler and Steinfield argued intermediation will continue to provide a valuable role in industry value systems, and their analysis suggested electronic markets can lead to four possible outcomes (Figure 4.3): a reinforcement of existing direct producer to consumer links, the use of an electronic market by producers to bypass intermediaries and link directly to consumers, a reinforcement of existing intermediary structures, or the emergence of new electronic market based intermediaries (1995). The four outcomes model (Figure 4.3) is based on transaction costs and intermediary value (Figure 4.2).

		Pre-Electronic Market	
		T1<T2+T3	T1>T2+T3
Post-Electronic Market	T1<T2+T3	I. Electronic Market Supplemented Direct Market	II. Threatened Intermediaries
	T1>T2+T3	III. Cybermediaries	IV. Electronic Market Supplemented Intermediaries

Figure 3 Electronic Market Intermediary Outcomes

Source: Adapted from Sarkar, Mirtra B., Brian Butler and Charles Steinfield (1995): "Intermediaries and Cybermediaries: A Continuing Role for Mediating Players in the Electronic Marketplace", Journal of Computer Mediated-Communication, 3, 1-17 [URL:http://jcmc.huji.ac.il/]

An interesting possible outcome was noted in which scenario III would occur where a pre-electronic market structure consisted of direct relationships but in a post-electronic market the emergence of cybermediaries occurred to take advantage of electronic market opportunities (Sarkar, Butler and Steinfield 1995).

The ability to link directly with consumers not only has the potential to threaten intermediaries, it also has the potential to negatively impact sellers. Formal support for this claim has been developed (Bakos 1996, 1991), with potential impacts including:

- promotion of price competition
- reduction in market power of sellers
- passage of system benefits from sellers to buyers
- creation of more demanding customers less likely to compromise on preferred products/services

Academic researchers have suggested the following strategies and suggestions to anticipate and respond to the negative impacts of electronic markets (Bakos 1996, 1991, 1991b; Malone, Yates and Benjamin 1987, 496-497):

- seller control of the type of system introduced
- development of a system that emphasises product information not price information
- obtain early mover advantage to establish market leadership and obtain large market share
- increase product/service differentiation to make it difficult for buyers to compare prices and product offerings (also increases buyer search costs)
- sellers or developers of electronic markets should not expect indefinite competitive advantages from the system
- improve underlying economies of scale by leveraging development expertise, installed networks, customer bases and proprietary databases
- assess the point of customer contact to determine its ability to serve as a critical resource to determine electronic market benefits, participation and sustainability of profits

With the emergence of such proposed negative impacts of electronic markets on sellers and intermediaries, researchers have questioned the motives for organisations and individuals to establish such markets. The theory of the prisoner's dilemma that sellers as a group do not benefit from an electronic market system, but as individuals the revenues that can be generated from such a system can be beneficial and outweigh the losses, assists in explaining business motivations for electronic market makers (Bakos 1991). Such market makers have been suggested to pursue revenue generation and increased market growth at the expense of the industry as a whole. As electronic market usage and utilisation improves by different industry participants the likelihood of electronic market participation becoming a strategic necessity and an integral part of industry infrastructure increases (Bakos 1991, 308).

Additionally, market makers often have an opportunity to create a system biased towards a given product or firm. As noted by Benjamin and Wigand, "...if a market maker owns or has a substantial interest in any suppliers, it can bias the market in their favour and both the consumer and other suppliers will be disadvantaged" (1995, 11). Benjamin and Wigand also suggest the overall market maker effect was a "...phenomenon in which the consumer does very well, producers lose their profit margins, and the market makers gain the remaining profits" (1995b, 66).

Finally, as noted by Bailey and Bakos, "...a newer paradigm of customised goods, reduced delivery time, and greater customer satisfaction may be more difficult to measure, but may be the one appropriate to use for electronic markets" (1997, 13).

THE AMERICAN INDEPENDENT INSURANCE AGENCY SYSTEM

The emergence of independent insurance agents in the United States began between 1795-1796 when insurance companies experimented with the appointment of exclusive agents (Payan 1993, 2). Mehr and Cammack (1980) recognise an insurance agent as anyone authorised by an insurer to solicit, create, modify, or terminate contracts of insurance between the insurer and the insuring public, and includes the following characteristics (1980, 99-101):

- an agency relationship is established between principals and agents by mutual assent given in an express agreement known as an agency contract
- an ability to establish a presumptive agency in which an insurer's behaviour causes a reasonable person to believe that an individual is an agent of the company

The costs of agent services are covered from the premiums paid by insureds, with differences in premium levels based on differences in agency services provided to the consumer. Insurance distribution costs are reduced by shifting part of the servicing burden to consumers where they determine how much service they wish to buy and supply for themselves (Mehr and Cammack 1980, 554).

Marketing insurance company products can be done through various distribution channels, including the agency system which relies on agents to sell the insurance products, direct selling in which insurers write business directly to consumers, and mass merchandising in which selling and underwriting is conducted in a group or collective basis (Mehr and Cammack 1980, 565). The focus of this paper will be the American agency system where companies use independent agents to market and sell insurance products and services.[3]

A majority of property and liability insurers in the United States currently operate in the American Independent Agency System, in which:

- insurers operating in the system are independent agency insurers
- agents are independent from companies and can represent multiple insurers
- agents issue policies, collect premiums, and retain exclusive rights to solicit renewals from customers

A white-paper for the National Association of Insurance Commissioners (NAIC) found the Internet as a convenient way for consumers to learn about insurance products, sources, and pricing; the marketing of insurance over the Internet offers insurance regulators an additional opportunity to monitor insurance market conduct; and a means for companies to use a new distribution channel which could incorporate all facets of an insurance transaction (N.A.I.C. 1997)

The NAIC has suggested the Internet serves four functions for the insurance industry (NAIC 1997):

1. *Single Source Sales Site-* in which a single insurance company markets its products and services over the Internet though a WWW homepage; has the ability to allow consumers to purchase insurance directly from the company and provide on-line requests for quotes; and offers a medium for companies to work with agents to educate and sell to consumers
2. *Insurance Malls-* offers a site where sellers from within one industry or across multiple industries can market and sell their insurance products and services

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[3] At present there are three main sources for insurance in the US: captive agents who can sell insurance for only one company, telephone insurance representatives who can offer insurance of one company, and only over the telephone, and independent insurance agents who represent multiple insurance companies and provide insurance products based on price, coverage, and service.

3. *Internet Insurance Servicing*- providing full servicing capabilities to the insurance consumer during all facets of the insurance transaction
4. *Company Agent Communications* to serve as a tool to enhance insurance company and agency communication and information exchange

In addition to the four possible Internet functions serving the industry, the NAIC suggests the Internet provides consumers, regulators, and the industry with a number of advantages and disadvantages (Table 1).

Table 1 Internet Insurance Advantages and Disadvantages

Insurance Segment	Advantages	Disadvantages
Consumers	• product and information accessibility • agent & product search • customer service • lower costs	• lack of personal interaction • unfamiliarity with laws & regulations • potential lack of market access
Regulators	• electronic access to consumers and industry • sales and solicitation electronically monitored	• potential lack of market access • explosive growth in use without adequate resources • regulatory overview problems • increased fraud
Industry	• electronic communication and transactions • reduced administrative and operating costs • target market opportunities • improved matching of needs with products	• problems with regulatory compliance • physical market access to emerging markets • solicitation violations • applicant qualification for insurance • advertising laws and regulations

Source: Adapted from National Association of Insurance Commissioners (NAIC)(1997): The Marketing of Insurance Over the Internet, Draft: June 4

A number of recent insurance industry movements indicate the Internet is having a profound impact on how different organisations are preparing for the future, including;

- the Independent Insurance Agents of America web site connects to WWW homepages for more than 22,000 independent agencies on the Internet (Banham 1997)
- InsWeb [www.insweb.com], a year old company that intends to offer web-based comparative shopping of insurance products and quotes and has invested at least $10 million into its web site, and QuickQuote, are building a presence on the Internet and recruiting organisations to participate in their services (Brandel 1996, Halper 1997)
- Internet technological advances are offering insurance companies opportunities to cut their distribution margins by 15-18 percent (Higgins 1996)
- six insurance companies have created an alliance, know as the World Insurance Network, to build a virtual private network with secure Internet "hooks" that will enable them to exchange e-mail and provide the foundation for electronic commerce (Cole 1997)

RESEARCH METHODOLOGY

This paper aims to identify whether emergent evidence of the following electronic market attributes and effects exist within the context of Internet-enabled markets in the Insurance sector:

- Electronic Communication Effect
- Electronic Brokerage Effect
- Electronic Integration Effect

- Effect of Product Characteristics
- Impact on Market Structure and Process
- Economics of Market Participation

Due to the early stage of theory building in this area, the research questions were explored through qualitative research categorised as theory building case studies in which constructs and propositions emerge inductively through the process of fieldwork (Eisenhardt 1989, Swamidass 1991). While inductive theory building from case studies increases the likelihood of generating novel theory, Eisenhardt (1989) identifies several possible weaknesses. To offset potential methodology weaknesses a number of steps were taken:

- constructs and propositions studied were obtained from previous conceptual and empirical research regarding electronic markets
- these were used to develop an interview guide containing a set of exploratory and qualitative questions, supplemented by open-ended questions
- initial testing of interview guides was conducted with insurance industry experts from the Independent Insurance Agents of America, Inc.
- the targeted sample was obtained from participation and invitation lists from past industry events and conferences related to electronic commerce, the Internet and the Independent Agency System
- targeted respondents were senior and executive managers with direct involvement in Internet related insurance issues
- organisations contacted participated in a broad spectrum of markets with national, regional and local business concerns
- information gathered was collected through extensive telephone interviews and follow-up conversations
- in order to reduce respondent bias and response error, information collected was not attributed or recorded as individual or organisational specific
- interview results were reviewed with respondents to ensure factual consistency

Sample Selection

As previously mentioned, to assist in reducing possible weaknesses in the study the sample population was chosen from insurance companies (carriers) participating in the American Independent Insurance Agency System. These insurance carriers use independent insurance agents to distribute, market, and sell their products were chosen due to their position in the industry value chain. The perspective of insurance carriers was deemed to be particularly valuable due to their ability to potentially change distribution channel methods should market and competitive forces change. Also, the companies targeted have all created a presence on the World Wide Web.

To identify key informants with knowledge of insurance, the independent agency distribution channel, electronic commerce and the Internet, respondents were selected from relevant industry event and coalition lists. Respondents were senior and executive level managers with direct involvement in Internet related insurance issues from established, well-rated insurance organisations with substantial asset levels firms participating in a range of markets with national, regional and local business concerns.

Data collection

To facilitate maximum participation in the study from the sample population numerous steps were taken. Pre-testing, relying on colleagues, respondent surrogates, or actual respondents to evaluate and refine the interview guide, was conducted to examine respondent interest, meaning, question transformation, continuity and flow, question sequence, skip patterns, variability, and length (Cooper and Emory 1995, 317-321).

Study respondents were contacted over the telephone to confirm their ability to provide adequate target data. Initial telephone contact consisted of a brief introduction, the purpose of the study, estimated time for the interview and a summary of topics to be covered during the interview. Specific appointments were made with the respondents to arrange for an appropriate interview time and setting.

On subsequent contact to conduct the interview, the respondents were reminded of the purpose and nature of the study, and topics to be discussed. Before starting the interview the researcher asked respondents if they had any comments or questions regarding the process. During a three week time period a total of 19 respondents from 17 organisations were interviewed for one hour each. Following the interviews, data gathered was reviewed with respondents to ensure factual consistency.

RESEARCH FINDINGS

The findings clearly indicate insurance companies are integrating the Internet and Internet-related technologies into their business processes, and are moving towards increased reliance on the Internet to serve as an electronic commerce medium.

Electronic Communication Effect

The refers to the Internet's ability to communicate more information in the same amount of time and decrease the costs of communication (Malone, Yates and Benjamin 1987). After reviewing the interview data the findings can be grouped into the nature of communication, scope and structure, types and alternative means of communication.

Nature of Communication

The Internet's impact on organisational communication was found to vary according to organisational perspective. The primary finding in this area, as stated by one respondent, was, "...use of the Internet is definitely a revolution taking place within forward-thinking organisations, especially with the strategic development of Intranet and Internet technologies." The previous statement was supported by the following data:

- assuming proper management methods, respondents considered that the costs of industry communication will decrease dramatically as more information is distributed through the Internet (attributed to reductions in content production, distribution, postal delivery, and content maintenance costs)
- communication effectiveness will increase as information is customised and tailored to individual and organisational needs
- the Internet has the potential to service the insurance triad (consumer, agent and company) as an open communications network with platform independence
- the Internet allows for more timely, convenient, and current information to be communicated for customer consumption

However, with the change in the nature and medium of communication, other issues of concern emerged. Respondents were concerned about long term issues such as information structure and engagement, education processes, and servicing abilities. These dimensions of the Internet remain superficially explored and were noted as needing further analysis to be fully understood. Another concern was the Internet's current passive nature in which information providers are given little control over information consumption. Currently the manner in which information is accessed and consumed is determined by Internet browsers. Thus, the value of communication structure was seen as becoming increasingly important.

Communication Scope and Structure

The Internet's national and international user base allows organisational information to be communicated to a broader audience and in greater depth. While the manner in which information is structured, integrated and tailored was identified as being very important, there was little agreement across respondents on the nature of these. For example, some respondents felt digitising hard copy brochures for Internet distribution was appropriate, while others felt it to be "shovel-ware" in which information overload and ineffectiveness were end results. In short, professional, readable web sites were seen as difficult to structure to provide organisational value, with the tendency for such sites to require large amounts of organisational resources from companies.

Means of Communication

The Internet's ability to facilitate an alternative means of communication with agents and consumers was found to be beneficial. For example, one respondent mentioned his company's plan to develop "...multimedia product information that can be downloaded for agency and consumer use." The Internet's multimedia capabilities provide carriers with an ability to deliver multifaceted and multidimensional information for consumption. The limits of the Internet were acknowledged (i.e., bandwidth, reliability, access, etc.) but the network's potential to advance and improve the current communication system was cause for optimism among respondents.

However, the Internet's ability to fully serve as a means of communication with consumers and agents and replace traditional methods was viewed with scepticism, especially with the current business value seen to be provided by independent agents.

Conclusion

Overall, the "electronic communication effect" of the Internet was perceived as positive. Respondent data indicates organisational adoption of the Internet into business processes and strategic objectives. All respondents provided information as to how they plan to incorporate Internet communication into their businesses though the degree of involvement varied between simple web site advertisement and in-depth agent-company interactivity. faith and confidence in the Internet's ability to fully serve as an electronic communications medium seemed to be limited at present due to technological and market barriers. The communication benefits noted lead to consideration of the Internet as a medium to supplement existing communication and distribution channels used by the companies to communicate with agents and consumers.

A number of issues emerged during the interviews regarding the electronic communication effect which remained unanswered and warrant further study, including:

- an adequate method to measure the value that an organisation receives from communications over the Internet was not provided and remains unclear
- the total reductions of organisational costs of Internet communication need to be compared against the additional costs for staff Internet training and support (especially related to production and maintenance of Internet communication)
- the degree of information engagement by consumers on the Internet remains to be an issue of speculation

Electronic Brokerage Effect

This section of the study attempted to explore the Internet's ability to act as an electronic market connecting many different buyers and suppliers, thus increasing the number of product alternatives that can be considered, increasing the quality of the alternative selected, and decreasing the cost of the entire product selection process (Malone, Yates and Benjamin 1987). The Internet's growth and development as an electronic market has led to the emergence of new target markets. Specifically, the "book-end effect" emerged as an important concept, which holds young, educated people and older, more established individuals participate in the Internet's growth, but a large number of individuals are in the middle of the two groups and remain "unconnected" to the Internet.

The electronic brokerage effects can be grouped into the search process, consumption process and market outcomes, and market structure.

Search Process

The Internet was seen as a means to facilitate the search process, especially as the insurance market evolves towards more educated and "technology savvy" individuals. Such an emerging market was specifically mentioned as a target for companies to address with new resources and business strategies on the Internet.

The Internet was seen as providing consumers with an easily accessed and potentially more efficient medium for insurance product education and selection. For example, Medical Savings Accounts (MSAs) are a new product that has emerged in the US health insurance market during the last few years. MSAs can be actively researched, analysed and selected with the Internet.

The Internet's ability to serve as an electronic broker was seen as a means to increase the level of consumer and agent knowledge of insurance products and servicing. The accessibility and convenience of insurance information on the Internet provides consumers with a means to "...look for what they really want to know." The emergence of push technology to provide insurance consumers with information they want to receive (an example given included Point Cast [www.pointcast.com] tailored to insurance). Additionally, the increase in the number of alternatives that can be considered was seen to improve insurance education and understanding, provide a means for comparison against captive agents, offer a means to fight for increased market share with better price and product offerings, and allow consumers to improve their ability to match their needs with an appropriate insurance product.

The need for filtering mechanisms to provide balance between information available and information needed at a one-to-one mass communication level emerged as a significant issue. Respondents noted the challenge the Internet poses to companies interested in not overwhelming consumers with technical and non-technical insurance information, and yet differentiating themselves from the masses of potential information that exists and increases daily. An improved information delivery and filtration mechanism to facilitate buyer and seller matching and consumer understanding of insurance products was seen as important to promoting further Internet market development, as one respondent said, "we need to go beyond search engines and directories to form customised technology that offers a unique point of view for customers."

Consumption Process

An area of debate was how insurance products and services on the Internet would be consumed and the possible market outcomes. Two possible consumption processes emerged during the study:

- insurance products and services would be located and researched on the Internet, after considering possible alternative insurance products, additional information and assistance would be sought through a retail outlet or personal contact, and the transaction would be continued "off-line"
- insurance products and services would be located and researched on the Internet, after considering possible alternative insurance products, additional information or guidance would be sought on-line, and the insurance transaction could be completed either on the Internet or "off-line"

Market Outcomes

From these two possible consumption processes, two possible market outcomes were identified. One market outcome was seen to lead to disintermediation supported by Internet development and the emergence of on-line intelligent software agents. The other market outcome was seen to result in a large number of people relying on personal interaction through traditional market mechanisms. It should be noted that these outcomes represent endpoints in a market outcome spectrum in which different market strategies could emerge. Disintermediation is discussed in more detail later in the paper.

Respondents generally cited the following market outcomes for insurance industry members participating on the Internet:

- reduction in insurance market barriers resulting in increased electronic marketplace competition
- customisation of products and services

Among solutions that have emerged, the on-line insurance mall was seen as the least promising. The need to understand consumer demographics and needs, and market on-line insurance products accordingly was seen as a promising objective. Examples of such marketing techniques were the bundling of insurance information with affiliated web sites and news groups. Additionally, the potential for other financial service firms to enter into the Internet insurance marketplace was seen as an emerging reality. While respondents were aware of the need to differentiate their organisations from other organisations participating on the Internet, the approach for doing so remained firm specific.

Conclusion

The Internet's ability to connect many different buyers and sellers of insurance was clearly recognised by respondents. The fundamental business concern that emerged regarding commerce on the Internet was how to separate one's organisation and product offerings on the Internet from rival organisations on the Internet. The filtering mechanism respondents mentioned as necessary for effective and efficient matching of consumers with products have not yet matured, though recent developments in agent-mediated electronic commerce suggest progress is being made in this area. The respondents acknowledged the Internet's ability to serve as a local, national and international interconnected marketplace matching buyers and suppliers. However, the business value and implications of participating in electronic commerce over the Internet remained organisational specific and tied to strategic speculation and inference.

Electronic Integration Effect

This section of the interview guide attempted to explore the Internet's ability, not just to speed communication, but to also change the business processes that create and use information (Malone, Yates and Benjamin 1987). By asking respondents for their opinions as to how the Internet can change their business processes, insight was gained into how use of the Internet as an electronic market changes the role information technology and information in their firms. The findings from this section were grouped into business process impacts, customer support, organisational speed, distribution and information use.

Business Processes

The development of Internet and Intranet technologies was seen as a tool for organisations to change their business processes to respond to new and emerging market needs. However, the theme that "...companies and agents are like dinosaurs, a lot of them aren't up to speed and have plenty of obstacles in front of them," emerged as a common view among respondents.

The Internet is allowing many of the participating firms to rethink the best manner for them to organise and conduct business, especially those functions which are supported by information technology. Such thinking led respondents to provide the following views regarding Internet technologies:

- the incorporation of data warehousing, databases, and decision support systems with Internet technologies increases organisational ability to improve business practices through work-flow re-engineering and building new business applications.
- as a technology infrastructure for business processes, the Internet and related technologies are more affordable and flexible (i.e., open standards, browser technology, accessibility, etc.).
- the Internet facilitates the crossing of organisational boundaries and the seamless integration of vendor and agent operations.
- potential business processes for change include enabling streamlining of functions, increased speed to market, and on-line claim status checking and coverage changing abilities.

Customer Support

The Internet's ability to serve as a tool for companies to build customer support and service emerged as an immediate target for organisational resources. During the interviews it became clear that interconnected communications links between agents, companies and consumers could benefit carriers immensely. The targeted benefits varied between respondents, but some common areas of possible interest for improvement were:

- the Internet to serve as a tool to support and enable agents and consumers (Example: obtaining quotes faster, more in-depth marketing information,)
- increasing consumer comfort with on-line insurance servicing
- increased consumer servicing and communication (especially with claim reporting, billing status, claim status, etc.)
- improving agent-company relationships
- building carrier reputation and brand recognition on the Internet

Organisational Responsiveness

An issue that emerged during the interviews was organisational speed in meeting consumer needs and responding to market changes. The prospect of having consumers and agents interacting with organisational members instantaneously through e-mail rather than the traditional postal system has begun to encourage the organisations participating in the study to rethink how, where and when consumers interact with them. Also, the ability to create a customer and agency feedback mechanism through the Internet to improve organisational learning was seen as an important area for development.

Distribution

The manner through which carrier information, products and services are distributed was provided as an example of how the Internet is changing distribution. Respondents saw the Internet's potential to integrate publications, coverages, agents, purchasing information, relevant news, and other information into a medium of value added distribution, as having a profound impact on their businesses. However, a distinction should be made between those who had strategic, longer term outlooks on the business impacts of the Internet and those who had more operational, short term oriented views. The immediate short term outlook on the Internet's impact on distribution was seen as serving as an alternative or additional mechanism for agency and company use.

Conclusion

By focusing on how organisations anticipate electronic integration of the Internet into their business processes and strategic objectives, insights emerge about how insurance carriers see business processes, customer support, organisational speed, distribution and information use are being impacted by the Internet. In summary, it became evident from the interviews that the Internet enables not only increased speed of communication, but also can serve to provide a platform for organisations to rethink and re-engineer business processes.

Effects of and upon Insurance Product Characteristics

This section of the study considered the suitability of insurance products for transaction over the Internet. To identify respondents views on the suitability of insurance products for an electronic market environment, we examined product characteristics and non-contractible investments.

Insurance Product Characteristics

In an attempt to understand whether insurance products and services distributed through the Internet would be viewed as a commodity or differentiated product, respondents were asked for their views on the nature of their products and services. From the insurer and agent standpoint, it was discovered to be advantageous to have insurance products seen as differentiated products. However, the advent of the Internet as a communications and information rich medium changes how insurance is perceived in an electronic marketplace environment.

Personal lines insurance was seen as being closer to a commodity product, with commercial lines insurance being more differentiated. However, it was also found that a spectrum exists along a continuum between personal lines (for example personal auto insurance) as a commodity product and commercial lines (for example commercial coverage against environmental liability) as a differentiated product, with different market segments served by different product and service combinations. Additionally, price and quality interact with the different product and service combinations to increase product differentiation. However, the essence of insurance content in different products remains similar due to the manner in which insurance is regulated, thereby restricting the ability of companies to truly differentiate their products from competitors.

Respondents recognised the potential for opportunistic companies to develop products and services tailored for Internet distribution as a possibility. Such an Internet tailored product would be developed to be clear, simple, and concise to maximise consumer understanding. However, as assistance at the point of sale is improved through Internet communications, the long term impact of product characteristics (whether a commodity or differentiated product) was seen to be minimised. Also, the development of on-line comparative quoting mechanisms and improved consumer education on insurance products was seen to increase the difficulty for insurers to differentiate their products. Finally, the amount of consultation and expertise a consumer requires to purchase insurance also affects how different product and service offerings would be differentiated from competitors.

In addition to the whether a product is a commodity or differentiated, other product characteristics influence how the product is distributed in an electronic marketplace (Malone, Yates and Benjamin 1987). The emerging fluidity between traditionally separate financial service organisations and their products have led to an increase in product bundling. With banking, personal finance, and insurance products becoming increasingly packaged together, combined with increased Internet usage by consumers, consumer market preferences were found to be changing. The ability to connect and bundle related products on the Internet through hyperlinks and web site integration creates an environment in which product marketing and fulfilment could be welded together into one interactive session for the consumer.

One primary characteristic of insurance products however hinders the ability to fully integrate insurance with other products on the Internet: *product complexity*. During the study it was found that insurance product complexity influences consumer education, customer communication, and the migration of insurance to an on-line environment. Consumer education is required in order for a potential customer to understand their actual coverage needs, and to assist an insurer in adequately matching a product with the customer's coverage needs. With different market segments having different product needs, the ability for consumers to use the Internet to purchase insurance requires a customer to adequately understand various product offerings and select the appropriate product. To improve the product selection and attainment processes on the Internet, customer communication was seen as vital. Providing a means for effective communication with customers on the Internet is essential for carriers and agents to assist customers in understanding and reviewing their product offerings.

The interviews also revealed that the nature of the on-line environment supporting complex transactions affects the suitability of different insurance products supplied through an electronic distribution channel such as the Internet. To many consumers, the combination of insurance and Internet complexity is potentially overwhelming. Thus, in addition to simplifying the insurance products offered, the Internet "experience" provided by insurance sites needs to be structured to maximise effectiveness. To prevent or at least minimise consumer confusion, the assistance of insurance agents and consumer software to support on-line insurance transaction applications was seen as a requirement. With the assistance of an agent and/or available software applications, consumers could be guided through the process of researching, buying, or adjusting their insurance coverage. An example of a consumer assistance software application could be a down-loadable program to facilitate independent analysis, financial modelling, and/or comparative rating. Such applications, combined with hyperlinked, multimedia environments, were found to support companies and their agents' abilities to facilitate electronic insurance commerce.

The successful migration of insurance onto the Internet was found to have occurred when "...simple and complex insurance transactions were efficiently completed and professional agent consulting moved away from transaction processing towards more value-adding situations of meaningful customer contact and support." The point of customer contact was seen as the most crucial point for effective, efficient and quality service. The ability to use the Internet as a tool to add as much value as possible to the point of customer contact represented a valuable opportunity.

Non-Contractible Investments

The concept that organisations and individuals may limit the total number of suppliers considered in order to maximise non-contractible investments, such as quality, responsiveness, trust, information sharing and innovation (Bakos and Brynjolfsson 1993), was found to be relevant for Internet insurance transactions. Fundamentally, it became evident that the value of non-contractible investments increases as other differentiating characteristics are eliminated. Efforts by carriers to add more value for agents and consumers engaging in electronic commerce were seen as valuable, directly increasing the importance of "soft issues."

The emergence of instantaneous transactions and communications with agents and consumers increases the role professionalism, quality and customer service have on the Internet. It was seen that the purchase of insurance, as a complex transaction, requires the process to be supplemented with professionalism, increased emphasis on credibility and protection, ease of doing business, personalised service, process simplification and streamlining, personal interaction, responsiveness, innovation and other value adding mechanisms. The challenge presented is how to provide and highlight such "soft issues" on an information and communication network such as the Internet.

Although the fundamental business and underwriting processes do not change with increased Internet usage, the delivery and service of those processes are radically altered by the Internet. Implied trust and credibility are provided through a well recognised and accepted brand name which assists in legitimising new business processes and servicing channels. However, fraud awareness, customer privacy, and information protection were seen to increase in importance. Thus, the integration of the Internet to support traditional business processes in a new distribution channel requires not only adherence to organisational values and objectives, but also a consistency with the organisation's Internet business values and strategic objectives. Such a duality of organisational existence between its marketplace and its marketspace was seen as a complex issue that will continue to emerge, and require the creation of new, more flexible business models.

Conclusion

As previously mentioned, this section of the interview guide focused on the suitability and nature of insurance products to be applied to the context of the Internet. Different lines of products were seen to be more suitable for electronic commerce on the Internet, with the characteristics of those products influencing how they are marketed, distributed and serviced. With the inability to readily distinguish one carrier's product from another, the importance of other factors, such as non-contractible investments, was seen to increase.

Evolving Market Structure and Process

This section of the interview guide focused on how the Internet may impact market relationships in the independent insurance agency system. Issues such as how members in the industry triad will communicate over the Internet, possible transaction paths of commerce, and consumer switching costs were explored.

In an attempt to understand what type of electronic market characteristics would emerge with the entrance of the Independent Insurance Agency System onto the Internet, the role of supplier relationships, buyer demographics, transaction pathways, network switching costs, price and product information, price competition, alliances, and regulation were explored.

Supplier Relationships

The respondents viewed the Internet as relationship technology where agents and insurance companies can embrace the technology to work with customers to provide products and services according to their needs and preferences. The proprietary issues involved in agent-company relationships encourage closer alignment between the two, which encourages co-operation in introducing and utilising new information technology solutions over the Internet. The Internet was seen as providing easier connectivity and a tool to supplement existing relationships.

Buyer demographics

Another area of importance was recognised to be emerging markets of younger, more technologically exposed individuals, and the need to monitor and respond to their buying preferences and practices. If such an emerging market were to increase in size and attractiveness, the nature of market relationships could easily change.

Transaction Pathways

The question of whether current transaction pathways will remain the same or change as the Internet is used for servicing insurance consumers remains to be seen. While respondents believed market preferences determine industry structure, they also suggested that the *flow of information between entities* will emerge as an important influence on industry structure in the future. Such a concept illustrates how the independent insurance agency system is vulnerable to an electronic marketplace such as the Internet where information flows freely and is accessed at the convenience of the user.

The interviews also uncovered that the flow of information between consumers, agents and companies on the Internet is not one-dimensional or biased towards one entity, rather the manner through which the information is used is the distinguishing feature of information based commerce. Thus, the Internet serves as an information tool that will supplement buyer preferences, with those preferences determining the path followed in a given transaction. For example, one respondent gave the example of an agency web site seamlessly integrated with his company in which a browser located a local independent agent's web site and used the agent's web site as the structure for securing insurance from the Internet. Such an example highlights the possibility that the physical distinction between agency and company becomes blurred in the virtual world, with consumer preferences determining transaction patterns.

Buyer Loyalty and Switching

The increased ability and convenience of consumers to search for insurance products were seen as factors that may influence customer renewals. It was found that numerous external factors influence whether consumers renew their policies with a given company. However, it was noted that an increased ability for consumers to search and switch was not beneficial to carriers. An increased tendency to search was seen as leading towards product price having a larger role in product selection, and created a contradiction between those who saw the Internet as facilitating and building closer relationships between companies/agencies and their consumers, and those who saw the Internet as decreasing relationships. Negative impacts of switching included increased organisational operating costs to support products and customer servicing, and potential threats to coverage renewals.

Product and Price Information Availability

When respondents were asked how price and product information on the Internet would impact insurance distribution, the following factors where seen to interact with how product and price information are utilised on the Internet:

- *Education-* consumer education through the Internet serves an important role in helping buyers understand insurance products and rating mechanisms, but also increases their product/service awareness and expectations
- *Needs Assessment-* the population of Internet users mirrors the traditional insurance consumer population in which different buying segments have different buying preferences, including those who are price oriented, relationship oriented, and protection coverage oriented
- *Market Maker-* the ability of and incentive for an organisation to create an environment of on-line, comparative insurance shopping has not been fully realised at present. Although different organisations were noted as attempting to build an on-line insurance marketplace (for example InsWeb <www.insweb.com>) the current initiatives were seen as limited and with minimal benefits

The ability of consumers to conduct rate comparisons was seen to be increased as a result of the Internet. At present, the time and process to conduct rate comparisons are absorbed by independent agents or consumers. However the findings indicate the ability of a market maker to create a favourable environment on the Internet for comparison shopping would be beneficial. In such an environment, product and price information would be available for consumers to assist in assessing product needs.

Price Competition

The effect the Internet has on price competition between insurers was seen to be limited to the business strategy the organisations have developed. Depending on whether a carrier's competitive strategy is based on cost, service, and/or quality directly influences the Internet's impact on price sensitivity. Additionally, the price mechanisms are not in place to provide quick responses to customer inquires (most Internet quotes are delivered though e-mail or the telephone), and the organisation and system structures have not been developed (the costs were seen as too high due to different rating mechanisms and state regulation variables). Although such impediments to price competition exist, the long term perspective suggested that price would have an increased role in product selection, and that margins would decrease to meet increased customer demands on price, quality and service. One proposed effect of price competition on the industry would be increased instability as premiums were lost and carrier adherence to strict underwriting guidelines was relaxed.

Disintermediation

The Internet's impact on market intermediation and the role of agents in insurance distribution was seen by respondents as a significant business issue. As the Internet's ability to fully serve as an electronic marketplace evolves, some respondents believed that market competition from other financial and non-financial organisations would increase, that cost reductions would be more aggressively sought, and that the market role of the independent insurance agent would change.

Evidence of the four possible market intermediation outcomes (see Figure 3) proposed by Sarkar, Butler and Steinfield (1995) is visible within the insurance industry. A direct market supported by an electronic marketplace has emerged with auto insurance. It is believed direct marketing will have a larger role with personal insurance lines in the future. The growth of direct markets through the Internet is considered to threaten current intermediary structures. However, agency use of the Internet to supplement their business practices (outcome IV) was seen as viable due to the emergence of business plans and strategies by insurance agents to create market niches and continually add value to the insurance transaction process. This is especially prevalent in commercial lines insurance.

An interesting area to observe in the future is whether cybermediaries will emerge on the Internet to serve the interests of the insurance buying public. Although industry trade press and study respondents alluded to the development of cybermediaries (for example the market maker InsWeb <www.insweb.com>) the competitive impact and influence of their activities to date were seen as minimal, and too early to anticipate future impact.

With current disintermediation targeted towards personal insurance lines, and possibly small commercial lines, the potential for adverse selection in favour of organisations aggressively utilising the Internet was found to increase. Some carriers and agents could potentially limit their relationships to organisations using the Internet, and build relationships from a common commitment towards integrating the Internet into their business processes. While some respondents believed the industry as a whole could slow insurance migration on to the Internet, others believed service providers from different sectors and industries could enter the market and compete using Internet technologies, negating any prolonged industry hesitation. Thus, rather than impede the industry's growth on the Internet, it was seen as being more viable to work with agency system members (i.e., agents and vendors) to develop the technology and understanding within the window of learning that now exists.

Another aspect of disintermediation was the manner in which non-Internet related issues influenced the use of market intermediaries. It was previously noted that different market segments have different buying attitudes and preferences towards product quality, price, service, and other product attributes. Overall, respondents noted that disintermediation was already occurring in certain markets without the Internet through utilisation of directing marketing and toll-free telephone channels. The Internet was seen as a new alternative to traditional direct marketing methods.

The findings of the study suggest differences between traditional direct marketing opportunities and those emerging on the Internet. The emerging opportunities represent a new approach to deliver insurance services to consumers. Thus, disintermediation has become an increasingly viable possibility due to the Internet, but the Internet itself will not be the sole force pushing disintermediation. Therefore, agents need to recognise changes in market demographics and consumer buying preferences to continually understand how they can provide added-value services on the Internet.

Overall, the independent agency system's future was not seen as dire, rather it was suggested the system would merely change and adapt to new market demands. The analogy of the agency system to a triad in which insured, agents, and carriers represented the three points emerged as an interesting concept. With the emergence of the Internet, information flow in the triad is multilateral and flows in different directions determined by information requirements. Triad members exist to complete the insurance transaction, with their position in the triad determined by the market value provided and their individual business objectives. A networked environment of the triad was found to facilitate information exchange and seamless integration.

Mergers and Strategic Alliances

The kiosk analogy to ATM networks that emerged during the study also serves the purpose of illustrating opportunities for mergers, strategic partnerships, and new market entrants to offer insurance products on the Internet. Some respondents recognised the ability for a large retail organisation (such as a bank) with an established Internet presence to include insurance products in its on-line product portfolio. With the Internet it would not matter whether the insurance products originated within a business unit or from a strategic partner due to the Internet's ability to seamlessly integrate products and services using hyperlinks and multimedia. Again the concept of a market maker emerged, but was tailored to joint efforts of multiple organisations to create the basis for an on-line market maker. Such an initiative was mentioned to potentially include a technology provider, product supplier(s), and unbiased third party evaluators.

State Insurance Regulation

Insurance regulation was determined to have a profound impact on how the insurance industry participates on the Internet. Although the United States Federal Government has endorsed national commerce on the Internet, insurance remains under the legislative control of state legislatures and the regulatory control of state insurance commissioners, resulting in laws and regulations differing from state to state. Thus, a potential area for conflict of interest has emerged in which although insurance is individually regulated by each state, the Internet serves a national and international consumer market. While the legislative and regulatory issues regarding insurance and the Internet are not in the scope of this study, it is essential to note the conflict of interests, and the task facing insurance regulators and the insurance industry to resolve interstate and international electronic commerce issues.

Conclusion

The interviews revealed how market relationships, transaction paths and switching ability would be affected by the Internet. The Internet was widely seen to be organisationally and market neutral, with market forces dictating the structure of the independent insurance agency system on the Internet. Some important business issues emerged regarding how electronic market characteristics influence the entrance of the independent insurance agency system onto the Internet. With the wide availability of information resources and the emerging availability of price comparison, the respondents provided insight into strategic and operational issues that need to be addressed. While the time frame for carriers and agents to fully integrate the Internet and related technologies is uncertain, the strategic and business issues need further consideration and analysis to help facilitate the system's transition towards electronic commerce.

Economics of Market Participation

Benefits of Participation

The immediate benefits for agencies of participating on the Internet were found to be mostly based on subjective rather than objective criteria. However, insurance carriers indicated they are attempting to build the economic justification for agency participation on the Internet. The economic justification for agents and companies to participate on the Internet focused on promoting the following benefits:

- elimination of software distribution
- reduced transaction processing costs
- improved information distribution
- decreased overall information technology costs
- improved quality of the investment by associating it to functionality
- value from e-mail communication
- audit tracking
- brand name and product recognition
- improved consumer understanding and education
- increased advertising
- niche attractions through specific fact sheets and customised information
- improved service beyond contract requirements

General optimism surrounded carrier motivations for Internet participation, but a strategic theme emerged in which the Internet's ability to eventually become integrated into the industry's business processes and therefore become a strategic necessity was noted. The Internet's ability to provide a flexible business platform for companies and agents to interact and serve customers was a primary reason for integrating the Internet into business processes. Also, as the Internet's integration into fundamental insurance business practices continues, the potential business value provided to carriers by the Internet was seen to increase.

Without active agent participation on the Internet technologically facilitated adverse selection was seen as a distinct possibility. In such a situation, those intermediaries who were not participating in electronic commerce would be automatically excluded from future Internet developments and advancements. Additionally, agents were seen as preferred partners in Internet facilitated insurance commerce, but it became clear that if consumer demand for direct interaction with companies increases or the benefits of direct interaction change, agents will not be able to block carriers from interacting with consumers on the Internet. The potential to alienate agents by carrier activity on the Internet was seen, but prevention of such alienation was directly targeted through continued reliance on the present agency distribution forces. However, carriers continued to find value in Internet exploration and participation, especially with insurance marketing and product information.

Additionally, advances in Internet technologies were seen as facilitating widespread adoption of Internet usage into core business practices, and further promoting the eventual adoption of Internet participation as a strategic necessity.

Network Externalities

At present, the benefits carriers derive from the Internet were not directly linked to the number of participants on the Internet. The carriers benefit from the Internet indirectly by communicating with Internet users about their product and service offerings. However, carriers are trying to assess long term benefits of electronic commerce and are exploring the appropriate business processes for re-engineering. Overall benefit of participation was attributed to capitalising on new consumer demands by using technology solutions in delivering new business visions.

Investment and Operational Costs

The initial costs and investments required for participation on the Internet were justified based on carrier strategic outlook for the future. The strategic outlook for the carriers incorporated a three to four year time-frame in which the means of exchange and communication methods change to align with the "digital economy". In such an environment, it was considered that adverse selection could occur in which high performance agents participating on the Internet with strategic information technology plans would increasingly benefit at the expense of low performance, non-Internet-participating agencies.

Network Switching Costs

Organisational investments in Internet technologies were seen as sound investments due to the limited switching costs faced by Internet participants. The Internet's design and infrastructure allow for flexibility in information technology investments (for example client server technologies, open standards, and platform independence) provide for flexible investments to address different business functions. Organisational benefits from Internet investment included open network standards allowing for increased agency-carrier interfacing and information exchange, as opposed to proprietary networks that can be cost intensive and investment specific, with reduced business flexibility.

Agency Capital Investment

The initial capital investments for independent agents were seen as minimal. With current Internet service provider costs relatively low, and the ability to incorporate Internet services into agency management systems, it was seen to be in an agent's best interest to invest in Internet participation. In addition to having companies and agents working together to build the technological ability to use the Internet to serve customers, the initial capital investment was seen to be near zero, especially due to agency abilities to build on information technology systems already in place. In such an environment the main costs were seen to be participant education and awareness of the Internet and its potential uses.

To quantify the investment costs it was deemed important to look at return on investment as the ability to interact with customers, and to improve customer and carrier relationships. The tendency for agents to focus solely on sales should not be the sole objective; lead generation was suggested as a potential longer term objective as the technology evolves.

A cost spectrum developed in which the cost of participation directly relates to the business value derived from the Internet. For example, as the interactivity and business value increase in a web site more investment and capital outlay are required. The lower the interactivity and business value of a web site, the lower the cost. For example, for a web site to adequately support sales and customer servicing requires more investment than a simple site with advertising and product information. Without specific business methodologies or plans to manage the relationship between increased cost and increased business value, the fundamental objective was seen to view investment in the Internet as an investment in future business productivity and processes. Finally, it was discovered to be essential to consider business and strategic issues before developing an Internet presence. Such consideration was seen to improve the likelihood of organisations avoiding wasted effort and resources, and maximising the benefits.

Prisoner's Dilemma

The concept of the prisoner's dilemma in electronic marketplaces (sellers as a group do not benefit from an electronic market system, but as individuals the revenues that can be generated from such a system can benefit them and outweigh the losses) advanced by Bakos (1991) was adapted to this study and used to understand insurance carrier motivations and concerns for Internet participation. First mover benefits were seen to be organisational specific due to different carrier strategic and business objectives for Internet development. Late-mover benefits were attributed more towards functional benefits derived directly from Internet capabilities (for example using e-mail as an alternative communication means).

Although optimism and enthusiasm were associated with Internet business development, concerns regarding how the industry and distribution systems would adapt, and how market competition could change remained a primary concern. The ability for financial and other non-financial institutions to leverage their organisational network capabilities, resources, and customer bases to enter the insurance market consistently also emerged as a concern. Disadvantages of widespread Internet adoption were seen to include rate reductions due to increased price and market competition, increased commonality of value added services through industry standard elevation, increased market threats from merged consumer processes and product bundling, and a reduction in total market participants.

An interesting concern discovered was whether a global interconnected electronic market such as the Internet would lead to a more globally competitive, digital insurance marketplace. From the study's findings it became evident that state regulation and oversight of insurance was seen as a substantial factor in keeping insurance localised to individual regions and states, rather than leading to increased national and international free market competition over the Internet.

Conclusion

With the wide availability of information resources and the emerging availability of price comparison, the respondents provided insight into strategic and operational issues that need to be addressed in relation to electronic market participation. In addition to understanding and justifying the benefits of participation, the role Internet economics have in facilitating its adoption throughout the agency system was exposed to include switching costs, capital investments, and network externalities. While the time frame for carriers and agents to fully integrate the Internet and related technologies is uncertain, the strategic and business issues need further consideration and analysis to help facilitate the industry's transition toward electronic commerce.

OVERALL CONCLUSIONS

The research objectives of this study were established to undertake exploratory study on how the Internet, as an electronic market, is changing the American Independent Insurance Agency System. The organisations interviewed for the study provided perspectives from the insurance producer's point of view. The intent of pursuing such a perspective in this study was to help independent insurance agents understand relevant market forces and insurance carrier motivations supporting Internet participation, and to improve overall industry understanding of how electronic commerce on the Internet impacts organisational and market structure.

As the findings indicate, a number of issues were explored through the interview process to provide in-depth, contextual understanding of the issues involved with Internet facilitated electronic commerce related to insurance. During the exploration process a number of unexpected issues were also uncovered and discussed. This combination of established and unexpected research topics for study and discussion contributes in creating practical value for those interested in understanding current complexities and concerns regarding the growth of insurance-based electronic commerce on the Internet. Thus, the research significance of this paper is its approach to presenting and discussing electronic commerce at a general, conceptual level, the creation of a strategic framework for assessing electronic commerce by extracting core constructs and propositions from such a presentation, and applying the framework to a specific industry.

From the data collected during the interviews it can be concluded that the Internet is beginning to have a profound impact on the American Independent Agency System. The common theme throughout the study was the existence of organisational awareness of a growing Internet role in the insurance industry, and strategic planning and operations for building the reliance on and use of the medium. Other conclusions that can be drawn from the study include the Internet's ability to offer organisations new methods and practices for conducting business, including:

- enabling more information to be communicated in the same amount of time and decrease the costs of communication
- providing a medium to connect many different buyers and sellers, and facilitate product offering and buyer need matching

- allowing organisations to change business processes and information usage methods
- changing traditional market relationships to favour greater efficiency and productivity with increased market value
- encouraging sellers to differentiate their product to prevent commoditisation
- increasing the possibility of disintermediation, with an overall emphasis on the value of different possible electronic market intermediary roles (For more information see Figure 4.3)

It is important to again note the qualitative nature of this study. To successfully achieve the research objectives of this paper qualitative research was selected, primarily due to the early stage of theory building in the chosen research topic area. Possible future research includes the development of a larger study sample with a less qualitative structure to provide a more in-depth, less narrow, empirically grounded research study. Due to the lack of established academic and insurance industry theories pertaining to the Internet's ability to facilitate insurance related electronic commerce in a market environment at present, such an approach was not taken. Study weaknesses were minimised as much as possible, to maximise the practical and research significance of the study. Additional empirical and conceptual research needs to be undertaken to explore and test the issues that emerged during this study. Finally, as Internet technologies develop and insurance industry adoption of electronic commerce increases, additional research should be conducted to evaluate the long term strategic outlook for the American Independent Agency System.

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APPENDIX

INTERVIEW GUIDE

Section I. Subject Information

Name:
Position:
Organisation:
Phone Number:
Address:
City, State, Zip:

Section II. Research Objective

General Management Question:
How is the Internet, as an electronic market, changing the role of Independent Insurance Agents in the Insurance industry?

Section III. Interview Guide

- Electronic communication effect

1. Does the Internet allow for more information about insurance products and prices to be communicated in the same amount of time as traditional communication methods? How? Why?
2. Does the Internet allow for the costs of this communication to be decreased dramatically? How? Why?

- Electronic brokerage effect

3. Does the Internet allow agents and companies to connect a large amount of different buyers? Sellers? How? Why?
4. Does the Internet fulfil the function of assisting to match consumers with sellers of insurance? How? Why?
5. Does the Internet increase the number of alternatives of insurance products and services a consumer can consider? How? Why?
6. Does the Internet increase the quality of the alternative eventually selected? How? Why?
7. Does the Internet have the potential to decrease the cost of the entire product selection process? How? Why?

- Electronic Integration effect

8. Does the Internet facilitate the ability of producers and agents to change their business processes (sales, marketing, customer support, other)?
9. Does the Internet facilitate the ability of producers and agents to change the manner in which they use information?

- Insurance Market Structure

10. Increase or decrease in longer term relationships with consumers?
11. Increase in Value Added Partnerships?
12. Is there a move to markets, the middle, or other movement in the industry?

- Price and Product Information

13. Does the Internet reduce buyer search costs and time for insurance products and services?
14. Does the Internet increase the ability of consumers to search for insurance products?

- Promotion of Price Competition

15. Does the Internet foster price competition in insurance products and services?

- Supplier Market Power

16. Does the Internet have the ability to reduce the market power of insurance companies?

- Network Externalities

17. Do the benefits of participation on the Internet increases as more members join?
18. Are the benefits of participation on the Internet uncertain?
19. Is the timetable for change in the Independent Agency system due to the Internet uncertain?

- Switching Costs

20. What type of switching costs are faced by agents if they change their presence and participation on the Internet?

- Capital Investment

21. Does the Internet require large amounts of initial capital investment?
22. Does the Internet offer economies of scale and scope to insurance agents?

- The Nature of Insurance Products offered by Independent Agents

23. Commodity or Differentiated Market?
24. How does the complexity of insurance products influence its presence on the Web?
25. Do specific types of insurance limit the ability of products to be generalised to a wide market?
26. How will the following influence how insurance products are applied to the Internet: (frequency of the transaction, power of buyers or suppliers, non contractible investment issues)

- Prisoner's dilemma?

27. Do agents as a whole benefit from participating on the Internet?
28. Do individual agents benefit from participating on the Internet?
29. Will it become a strategic necessity to participate on the Internet?

- Intermediation

30. Are insurance agents threatened by the Internet? Why?
31. Is the Internet driven by consumers, agents, or companies?

- What future scenario or outlook do you see for Insurance and its distribution over an electronic market such as the Internet?

32. Generational differences?
33. Long term marketing and strategic approach?

AN ELECTRONIC MARKETPLACE ARCHITECTURE

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ABSTRACT

In this paper, we describe a scenario for a distributed marketplace whose scope can be the whole Web where resource discovery agents find out about resources that may want to join the marketplace and electronic commerce is realised through buying agents representing the customers and the selling agents representing the resources like electronic catalogs. The marketplace contains an Intelligent Directory Service (IDS) which makes it possible for agents to find out about each other and also contains references to the related Document Type Definitions (DTDs).

We propose a possible architecture to support this scenario which is based on the emerging technologies and standards. In this architecture, the resources expose their metadata using Resource Description Framework (RDF) to be accessed by the resource discovery agents and their content through Extensible Markup Language (XML) to be accessed by the selling agents by using Document Object Model (DOM).

The IDS contains the template workflows for buying and selling agents, a trader mechanism, Resource Discovery Agents, Document Type Definitions (DTDs) and a dictionary of synonyms to be used by the buying agents to help the customer to specify the item s/he wishes to purchase. The agents and IDS communicate through KQML messages. The modifications necessary to the proposed architecture considering only the available technology are also discussed.

INTRODUCTION

Electronic commerce is a generic term that encompasses numerous information technologies and services used to implement business practices ranging from customer service to inter-corporation coordination. One of the most common instances of electronic commerce is the exchange of goods and services over the Internet. However, the electronic commerce services that are established so far are still far from being mature. There is no real integration of the available underlying technologies, and the provided services lack many important but also more challenging features.

One such feature is the automation of a marketplace on the Web through agents. For such a marketplace, there is a need for a facility which enables the semantic interoperability of resources on the Web so that buyers are able to reach the sellers that can meet their needs and vice versa. In this respect, the currently emerging standards like XML, RDF and DTDs are very promising. Furthermore, after the resources are discovered, the process of interaction between buyers and sellers (resources), that is commerce, should be automated. In other words, a virtual marketplace on the Web should be created which not only makes buyers and sellers meet but also helps the exchange of goods between them through negotiations.

With these considerations in mind, we envision a scenario for an electronic marketplace on the Web. The distribution infrastructure of the marketplace is Web. The marketplace contains buying and selling agents as well as Intelligent Directory Service (IDS). The IDS contains the template workflows for buying and selling agents, a trader mechanism, Resource Discovery Agents, Document Type Definitions (DTDs) and a dictionary of synonyms to be used by the buying agents to help the customer to specify the item s/he wishes to purchase. The trader mechanism lets agents find out about each other.

In this scenario, resource discovery agents of IDS working in the background discover resources. If a resource is willing to join the marketplace, the IDS sends a selling agent workflow template to the seller's site. The resource creates a selling agent by automatically customizing the template by using the information obtained from the resource through a user friendly graphical interface. The resulting agent is registered with the trader. However if the resource already has a selling agent, that one is registered. The trader makes the related buying agents already in the marketplace aware of this newly created selling agent.

When a customer wants to buy a service or an item from the marketplace, s/he provides the item name to the IDS. IDS first checks the related DTDs with the item name specified by the buyer. However, the buyer may not know the right term (used in DTD) to use for the item, therefore an intelligent dictionary of synonyms is used for this purpose. For example, consider a computer shop using a computer DTD in describing its service. If a customer wants to buy a CPU and uses the term "Processor" and if "CPU" is the term used in DTD, then dictionary of synonyms is to match the word "Processor" with "CPU". Then IDS sends the names and types of the properties as well as a buying agent template and the list of related selling agents to the buyer's site. Obtaining the names and types of properties from DTDs is necessary since the buyer may not know in advance all the properties of the item. The proposed XML namespace facility can also be used together with DTD to associate DTD's and the documents.

The buying agent workflow template presents the user a form containing the values or ranges for the properties of the item along with the criteria that the customer wishes to be optimized in the negotiation phase and the required parameters. The buying agent is automatically created by customizing the workflow template using this information. The buying agent negotiates with the related selling agents to realize the transaction. A comparative analysis of the available alternatives can also be presented to the customer by the buying agent if the customer wishes so.

The paper describes an architecture for the proposed scenario, called METU-Emar, and is organized as follows: Section 2 summarizes the technologies that can be used as building blocks in the implemention. Section 3 describes the overall architecture of the marketplace. In Section 4 details of agent architecture including their implementation as workflow templates are given. Section 5 and Section 6 present the feasibility and the advantages of the proposed system. In Section 7 an alternative communication infrastructure to KQML namely CORBA is discussed. And the conclusions are given in Section 8.

RELATED TECHNOLOGIES

In this section we briefly summarize the advanced technologies and emerging standards which constitute the building blocks of the proposed architecture. In this respect, agent technology, Knowledge Query and Manipulation Language (KQML), Extensible Markup Language (XML), Document Type Definition (DTD), Resource Description Framework (RDF) and Document Object Model (DOM) are covered.

Agent Technology

Agents are programs that perform specific tasks on behalf of their users. Agents are distinguished from other types of software because they are independent entities capable of completing complex assignments without intervention, rather than as tools that must be manipulated by a user.

The fundamental properties of software agents are as follows [Woolridge, 1995]:

Autonomy: Agents operate without the direct intervention of humans or others, and have some kind of control over their actions and internal state.

Social ability: Agents interact with other agents (and possibly with humans) via some kind of agent communication language.

Reactivity: Agents perceive their environment, (which may be the physical world, a user via a graphical user interface, a collection of other agents, the Internet, or perhaps all of these combined), and respond in a timely fashion to changes that occur in it.

Pro-activeness: Agents do not simply act in response to their environment, they are able to exhibit goal-directed behaviour by taking the initiative.

The agents can be made more intelligent with the following additional properties:

Rationality: Agents select actions that follow from knowledge and goals.

Adaptivity: Agents are able to modify knowledge and behaviour based on experience.

Collaboration: Agents can plan and execute multi-agent problem solving.

An earlier example of a software agent for electronic commerce is ShopBot (Shopping Robot) [Doorenbos, 1997] which is a domain-independent comparison-shopping agent. Given the home pages of several online stores, ShopBot automatically learns how to shop at these vendors. Learning process involves extracting product descriptions from home pages. This is not an easy problem because home pages may vary in format and also contain other information like advertisements and links to other sites. After learning, ShopBot is able to visit over a dozen of software vendors, extract product information, and summarize the results for the user. Preliminary results show that ShopBot enables users to both find superior prices and substantially reduce Web shopping time. ShopBot relies on a combination of heuristic search, pattern matching, and inductive learning techniques.

Yet ShopBot has several limitations. It works only on home pages that have a searchable index. It expects product descriptions to start on a fresh line. Furthermore, ShopBot heavily relies on HTML. If a vendor provides information exclusively by embedding graphics or using Java, ShopBot will be unable to handle that vendor. More importantly ShopBot shopper's performance is linear in the number of vendors it accesses which is not acceptable given the number of resources on the Web.

The Michigan Internet AuctionBot [AuctionBot] is an experimental auction server developed and operating at the University of Michigan Artificial Intelligence Laboratory. The purpose of the server is to allow anybody on the Internet to run an auction over the net. The AuctionBot provides facilities for examining ongoing auctions (which are accessible through catalog information or through keyword search), starting a new auction, biding in an existing auction and inspecting account activities. The AuctionBot provides only an information service. Registered buyers and sellers give their bids to AuctionBot which determines a resulting allocation as entailed by a well-defined set of auction rules, and notifies the participants.

The AuctionBot simulates the auction process on a central site where the buyers and sellers meet. In other words the marketplace for the AuctionBot is a web site where buyers and sellers are registered. The sellers and buyers first access to the AuctionBot's web site through a web browser and log in to the system, then they can monitor the auctions and bid for auctions in this site.

There is extensive work on the mobile agents which have ability to transfer themselves between the systems that provide an agent server of some kind on a network. This ability lets a mobile agent move to a system that contains an object with which the agent wants to interact, then take the advantage of being in the same host or on the network as the object.

IBM's aglets [IBMAglets, 1998] are an example of a mobile agent technology. Aglet requires a host java application, an "aglet host" to be running on the destination computer. Before the aglet is transferred between the hosts, its current state is saved by using object serialization (which is available in JDK 1.1) to export the state of aglet (image of heap) to stream of bytes. When the aglet is transferred to a new aglet host, aglet host installs a security manager to enforce restrictions on the activities of untrusted aglets. Host uploads aglets through class loaders that know how to retrieve the class files and the state of an aglet from the remote aglet host. The state of the aglet is reconstructed from the stream of bytes and the aglet continues execution where it left of in the new host.

Objet Management Group is currently working on the specification of an agent framework to support agent mobility and management, named Mobile Agent Facility (MAF) [MAF] which is built on top of CORBA, thus providing the integration of traditional client/server paradigm and mobile agent technology. This work will help to ensure that different agent systems are able to work together by using standard MAFAgentSystem and MAFFinder interfaces. There are Mobile Agent Environments already developed in accordance with the MAF standards [Grasshoper, 1998].

One of the earliest examples of an electronic marketplace is Kasbah [Chavez, 1996] where users create autonomous agents that buy and sell goods on their behalf in the marketplace. Kasbah's selling agents are pro-active, they contact interested parties (namely, buying agents) and negotiate with them to find the best deal. A selling agent is autonomous in that, once released into the marketplace, it negotiates and makes decisions on its own, without requiring user intervention. Marketplace's job is to facilitate interaction between the agents by letting buying and selling agents know each other and by ensuring that they speak a common language and use a common terminology to describe the goods.

Another work that can be mentioned in this framework is OFFER which is CORBA based electronic broker, described in [Bichler, 1998]. The business model consists of suppliers, customers and electronic brokers (e-broker). Suppliers and e-brokers offer services which can be accessed over the Internet and which are procured by customers. The interfaces of these services are described in OMG's Interface Definition Language (IDL). Therefore, there is a need in establishing an interface standard on which all suppliers of a certain product category agree.

Suppliers offer an electronic catalog (e-catalog) to the customer; suppliers can also register with the e-broker. The e-broker can either maintain its own database of registered e-catalogs or it can use services of an Object Trader implemented through Trading Object Services of OMG. Hence, a customer can search for a service either directly in the catalog of a supplier or can use the e-broker to search in all the e-catalogs of all the suppliers which are registered with this broker. An

IDL interface is specified for the e-catalogs and for the e-broker which they should conform. The electronic broker described supports search in underlying catalogs and it provides a centralized marketplace with the possibility to use an auction mechanism to buy or sell goods.

Knowledge Query and Manipulation Language (KQML)

One of the requirements for software agents to interact and interoperate effectively is a common communication language (*social ability property*). KQML [Finin, 1995] is an agent communication language and a protocol developed by the Knowledge Sharing Effort (KSE) Consortium. It has been developed both as a message format and a message-handling protocol to support run-time knowledge sharing among agents which may have different content languages. It is a communication language which expresses communicative acts and it is different from the content language which expresses facts about the domain. The aim of KQML is to support computer programs in identifying, connecting with and exchanging information with other programs.

KQML language consists of three main layers: the content layer, the message layer, and the communication layer. The content layer contains the actual content of the message in the program's own representation language. This layer enables KQML to carry any message written in any representation language. The communication layer encodes a set of lower level communication parameters to the message like the identity of the sender and recipient and a unique identifier associated with the communication. The message layer is the core of KQML and determines the kinds of interactions one can have with a KQML-speaking agent. It identifies the protocol to be used to deliver the message and supplies a performative which the sender attaches to the content (such as that it is an assertion, a query, a command, or any set of known performatives). The performatives comprise a substrate on which to develop higher-level models of inter-agent interaction such as contract nets and negotiation.

In the following KQML example message John asks score-server about her score.

```
 (ask-one:
:sender john
:receiver score-server
:content (SCORE JOHN ?score)
:reply-with c-score
:language LPROLOG)
```

In this message the KQML performative is ask-one, the content is (score cindy ?score), the receiver of the message is a server identified as score-server and the query is written in LPROLOG language. The value of the :content keyword is the content level, the values of :reply-with, :sender, :receiver keywords form the communication layer and the performative name (ask-one) with the :language form the message layer. In due time, score-server might send John the following message:

```
(tell
:sender score-server
:content (SCORE John 74 )
: receiver john
:in-reply-to c-score
:language LPROLOG)
```

The set of performatives defined by KSE is extensible. A group of agents may agree on to use additional performatives if they agree on their interpretation and the protocol associated with each.

The message layer also includes optional features which describe the content language, the ontology, and some type of description of the content. These features make it possible for KQML implementations to analyze, route and properly deliver messages even though their content is inaccessible.

Following are the main advantages of KQML as an agent communication language:

- KQML messages are declarative, simple, readable and extensible,
- Since KQML has a layered structure and since KQML messages are unaware of the content of the message they carry, KQML can easily be integrated with other system components,
- KQML imposes no restrictions about the transport protocol and the content language.

In addition to these, KQML has the potential to enhance the capabilities and functionality of large-scale integration and interoperability efforts in communication and information technology such as OMG's CORBA, as well as in application areas like electronic commerce [Finin, 1995].

Extensible Markup Language (XML) and Document Type Definitions (DTDs)

World Wide Web Consortium's (W3C) Extensible Markup Language (XML) [XML] defines a simple subset of SGML (the Standard Generalized Markup Language). Unlike HTML, which defines a fixed set of tags, XML allows the definition of customized markup languages with application specific tags [Manola, 1998]. That is, XML provides support for the representation of data in terms of attribute/value pairs with user defined tags.

XML differs from HTML in three major respects [Bosak, 1998]:

1. Information providers can define new tag and attribute names at will.
2. Document structures can be nested to any level of complexity.
3. Any XML document can contain an optional description of its grammar for use by applications that need to perform structural validation.

Document Type Definitions (DTD) which are defined for user groups provide a formal definition of documents for that group, that is, they define what names can be used for elements, where they may occur and how they all fit together in an XML file.

The XML working group is currently developing a facility [XMLNames] that will allow tag names to have a prefix which make them unique and prevent name clashes when developing documents that mix elements from different schemas. XML namespace proposal provides a way to define relationship between the use of particular element name in a document and the standard vocabulary (DTD) from which the name is taken.

As an example, the following XML file (staff.xml)can be used to represent the staff report for a university. The related DTD states that faculties have a NAME attribute and contain department elements. Departments have a NAME attribute and contain a STAFF and a STUD elements. STAFF shows the number of full-time and part-time staff, while STUD gives the number of graduate and undergraduate students.

Staff.xml :

```
<?XML VERSION="1.0" ?>
<!DOCTYPE STAFFREPORT "staff.dtd">
<STAFFREPORT>
<FACULTY NAME="ENG">
<DEPARTMENT NAME="CS">
<STAFF FT="30" PT="10"/>
<STUD G="60" U="300"/>
</DEPARTMENT>
<DEPARTMENT NAME="EE">
<STAFF FT="55" PT="10"/>
<STUD G="70" U="600"/>
</DEPARTMENT>
</FACULTY>
</STAFFREPORT>
```

Staff.dtd

```
<!ELEMENT FACULTY (DEPARTMENT)+>
<!ATTLIST FACULTY NAME CDATA #REQUIRED">

<!ELEMENT DEPARTMENT (STAFF, STUD)>
<!ATTLIST DEPARTMENT NAME CDATA #REQUIRED">

<!ELEMENT STAFF EMPTY>
<!ATTLIST STAFF NAME FT CDATA #REQUIRED">
<!ATTLIST STAFF NAME PT CDATA #REQUIRED">

<!ELEMENT STUD EMPTY>
<!ATTLIST STUD NAME GS CDATA #REQUIRED">
<!ATTLIST STUD NAME US CDATA #REQUIRED">
```

Resource Description Framework (RDF)

As ShopBot's limitations given in Section 2.1 clearly demonstrated, there is a need for machine understandable information on the Web. An emerging solution to letting automated agents surf the Web is to provide a mechanism which allows a more precise description of the resources that are available on the Web [Lassila, 1998a]. The Resource Description Framework (RDF) [RDF] by the World Wide Web Consortium (W3C) is a standard for metadata that provides interoperability between applications that exchange machine-understandable information on the Web.

RDF [RDF] defines both a data model for representing RDF metadata, and an XML-based syntax for expressing and transporting metadata. RDF is a model for representing named properties and their values. These properties serve both to represent attributes of resources and to represent relationship between resources. The RDF data model is syntax independent way of representing RDF expressions and in [RDF], three representations of the model are given, that is, representation as 3-tuples, as a graph and in XML.

In 3-tuple representation, a property is a three tuple consisting of the resource being described, a property name or type, and a value. A collection of property triples describing the same resource is called an *assertion*. In graph representation, the resources being described and the values describing them are nodes in a directed graph, with the edges being labelled by the property names. An RDF statement can itself be the target node of an arc (i.e., the value of some property) or the source node of an arc (i.e., it can have properties). In these cases, the original property (i.e., the statement) must be reified; that is, converted into nodes and arcs. Reified properties are drawn as a single node with several arcs emanating from it representing the resource, property name and value [Manola].

It is clear that RDF will provide the much needed information for the agent technologies working on the Web. Agents can use RDF not only for describing their capabilities and negotiating the terminologies used in communication, but also the other resources on the Web.

The following example gives the meta-data about the document resource (http::/www.x.com/y.xml). The author of the resource is 'John Doe', whose name is "John Doe" and title is "manager". The namespace prefixes are used to show that the author property is taken from the schema defined in /XML/sbib.

```
<?xml:namspace name="/XML/sbib" as="bib"?>
<?xml:namspace name="http://../rdf-s" as="RDF"?>
<RDF:serialization>
<RDF:assertion href="http::/www.x.com/y.xml">
<bib:author>
<RDF:resource>
<bib:name>John Doe</bib:name>
<bib:title>manager</bib:title>
</RDF:resource>
</bib:author>
</RDF:assertion>
</RDF:serialization>
```

Document Object Model (DOM)

W3C's Document Object Model (DOM) [DOM, 1998] defines an object-oriented API for HTML and XML documents which a Web client can present to programs that need to process the documents [Manola, 1998]. DOM represents a document as a hierarchy of objects with proper inheritance relationship among them, called nodes, which are derived (by parsing) from a source representation of a document (HTML or XML). In other words, the DOM object classes represent generic components of a document, and hence define a document object meta model. The major DOM classes are: Node, Document, Element, Attribute, Text, Processing Instruction, and Comment. The representation of a Web page in terms of objects makes it easy to associate code with the various subcomponents of the page. For example, Document object has a "documentType" method which returns DTD for XML documents (and "null" for HTML and XML documents without DTDs) and a "getElementsByTagName" method which produces an enumerator that iterates over all Element nodes within the document whose "tagName" matches the input name provided. Thus DOM provides a general means for applications to access and traverse documents written in HTML and XML without having themselves to perform complex parsing.

Buying Agent
4
5
9
6
7
8
IDS
• Trader,
• DTDs,
• Selling Agent Template,
• Buying Agent Template,
• Directory of Synonyms
Resource D. A.
10
Selling Agent
3
2
Resource:
Owner
XML + RDF
1

Phase I: 1. RDA find out about Resources and informs owners about METU-EMar.
2. Resource loads SA template, then configures SA and registers with the trader.
3. SA accesses Resource through DOM.
Phase II: 4. Buyer contacts with IDS, and gives the name of the item.
5. Buyer loads BA template, item properties and a list of SAs, then creates and registers BA with the trader.
Phase III: 6. BA asks related SAs about the required item and requests proposals.
7. SAs respond with their proposals if they sell the required item (Alternatively send negative response).
Phase IV: 8. Parties perform negotiation.
Phase V: 9. BA informs IDS about the completion of the process. IDS removes it from the trader.
10.SA informs IDS if it is no longer selling the item. IDS remove it from the trader.

Figure 1: The Architecture of METU-Emar

METU-EMAR ARCHITECTURE

A possible architecture realizing the scenario given in Section 1 that uses the technology summarized in Section 2 is described in the following (Figure 1):

The electronic commerce in the marketplace is realized in five phases. Resource Discovery Agents finds out resources on the Web and the selling agents are created in Phase I. In Phase II a buying agent is created for the customer that operates in the marketplace in order to make a purchase. In Phase III, the buying agents contact with the all possible selling agents to determine the ones that can provide the item with required properties. Phase IV contains the negotiation between buying and selling agents. Finally, the result of the transaction is reported to the IDS to make proper updates like deleting the agent that leaves the marketplace from the trader.

PHASE I:

The resource discovery agents working in the background find out about the resources providing products and services. We expect resources to expose their semantics by using the Resource Description Framework (RDF) [Lassila, 1998b] and the Extensible Markup Language (XML) [XML]. As briefly summarized in Section 2.4, RDF defines both a data model for representing RDF metadata, and an XML-based syntax for expressing and transporting the metadata. Since resources use RDF to expose their metadata, the resource discovery agents do not need intelligence in extracting information from the resources. However, they do have other properties of agents like being autonomous, reactive and proactive.

Resource Discovery Agents contact the owner of the resource by using the means (possibly an e-mail address) available on the resource. If the resource wants to join the marketplace, the owner of the resource accesses to the marketplace's web site through a web browser and marketplace provides it with a template workflow of a selling agent.

Then the owner of the resource (user) configure the workflow agent template by filling the form generated by the template. The form contains information automaticaly extracted from the resource (items or services provided, their prices) and request information from the user (owner of the resource) about the negotiation policy and the desired user interaction characteristics like how and when the user wants to be informed about the progress of the negotiation. On complition of the form, the selling agent is automatically created and registered with the trader of the IDS. If the resource already has a selling agent, this one is registered.

PHASE II:

When a customer wants to make a purchase on the marketplace, s/he connects to the marketplace's web site through a web browser and specifies a service or a product s/he wishes to purchase from the marketplace. The IDS that contains references to the DTDs, accesses to the related Document Type Definitions (DTDs) to obtain names and types of properties of the product. DTDs which are defined for customer groups provide a formal definition of documents for that group, that is, DTDs define what names can be used for elements, where they may occur and how they all fit together in an XML file as described in Section 2.3. In our case, all the merchants use the same definition in their DTDs for the item accessed by the selling agent. Therefore, there is no need for a translation among terminologies (which is necessary when XML files have different DTDs and different customers define their own ways of using attribute/value pairs to represent the same information).

Different names can be provided for the same product by the customers, in other words, the customers may not know the standard terms used in DTDs. Therefore, a dictionary of synonyms is necessary in the IDS. This dictionary of synonyms may be implemented to contain some intelligence in the sense that whenever an item or service is not found in the dictionary, the customer may be asked to provide synonyms and these terms can be added to the dictionary for later use.

Then IDS sends a buying agent workflow template, the names and types of the properties of the item and a list of related selling agents to the buyer's site. The customer (user) using the standard forms that is presented to him specifies the desired property values of the item, and the negotiation strategy. Using this information the buying agent is automatically created and registered with the trader.

In filling out the form, the buyer defines all the required properties of the item. Some of those properties may be open to negotiation while the others may not be negotiable. For example, the car item has a property "year", which represent the year in which the car is produced. If the property is determined as non-negotiable the selling agents are not allowed to give a proposal that may have a different value than the required one.

PHASE III:

A buying agent contacts all the related selling agents using the list provided by the IDS in Phase II and asks them if they can provide the item with the desired properties and conditions. For example the buying agent which wants to buy a "second hand domestic car" has the list of all the selling agents that sell cars. But only some of them may have the car with desired properties ("second hand" and "domestic").

All the sellers respond to the request of the buyer with the list of proposals for matching items that they sell or send a negative response if their items do not meet the required properties. The proposals contain all the negotiable properties that the sellers offer including the price.

Using the responses from the selling agents and considering the hints and restrictions given by the user, buying agent determines the buying strategy. For example, if a selling agent with a bargaining facility is already giving a lower price than a selling agent without a negotiation facility, the second is eliminated. Such a strategy is also possible for the selling agents. In other words, the buying and selling agents are playing a game where each is trying to satisfy its goals. The buying agents are on the customers' side and the selling agents are on the resources' side.

PHASE IV:

The buying agents go in a direct negotiation with selling agents by sending and receiving proposals. In this respect, RDF is used in encoding resources and query capabilities and KQML [Labrou, 1997] is used to communicate RDF among agents.

The buying and selling agents in the marketplace act autonomously, that is, once released in the marketplace, they negotiate and make decisions on their own, without requiring customer intervention. They are proactive in contacting the other interested agents and reactive to the changes in the marketplace like new agents.

The resources should provide semantic information about their content to the selling agent. In this respect, the resources should be defined in XML. DOM is used by the selling agents in processing XML pages to obtain specific product data, like the price of the product. The selling agents should be authorized to invoke certain applications at the resource to obtain the bargaining strategy and its parameters which implies that the resources should provide this information through a standard interface.

The negotiation strategies as described in [Chavez, 1996] can be used in the negotiation phase. Several parameters can be specified, like the desired date to sell (buy) the item, desired price, lowest (highest) acceptable price and a decay function if the agent wants to decrease (increase) the price over its given time frame. However there is a need for more solid bargaining algorithms [Bichler, 1998].

PHASE V:

This phase starts after the successful completion of a negotiation. When the negotiation is complete, the buying agent informs the IDS that it is done. Then the IDS removes the buying agent from the trader. Also in completion of the negotiation, all the items of the selling agent may be sold. In this case the selling agent informs IDS about it and IDS updates the trader.

Figure 2: The Price Function for Buying Agent

Initial Configuration of an Agent

The user (buyer or seller) configures the agent template by filling in the form provided by the template. The form includes the questions about Property Parameters, Price Function, User Interaction Characteristics and User Preferences in the negotiation.

Property parameters are used to evaluate a proposal. To be able to compare the received proposals, it is necessary to evaluate a proposal to a numeric value. For this purpose negotiable properties are assigned with two parameters. First each property has a user defined weight (over 100) which reflects the comparative importance of the property among other negotiable properties. Second for the properties whose values lie within a desired range, a function is evaluated that returns a real number between 0 and 1. By multiplying the weight and the result of the function, the value of the property is obtained. By summing up all the property values, the value of the proposal is obtained.

As an example, assume that a user wants to buy a "domestic second hand automobile" and defines the property "year" as negotiable. First he is asked the weight of the year property. Second the user is asked to give the values for at least two years and a function type (linear or exponential). Then using a curve fitting algorithm, the function is obtained for the year. For example, user may give 0.8 for the year 1998, 0.4 for the year 1994, and may define function type as linear. In this case, the function becomes (0.1*x - 199) and the year 1996's value becomes 0.6 (The important point in the function is that: it allways returns a value between 0 and 1)/

Price Function is used by the agent to define the buying or selling prices during negotiations. It represents the rate at which agents reduces (selling agent) or increases (buyer agent) the price. As it is in KASBAH [Chavez, 1996] 3 types of function can be selected (Figure 2).

The User Interaction Characteristics defines how and when the user is to be informed or his interaction is required in negotiation. User selects either e-mail or message-box as a vehicle for being informed. The possible alternatives for informing the user include:

- inform (and wait) at every step,
- inform (and wait) at the last step,
- inform (and wait) when price exceeds a certain value,

- inform (and wait) when time exceeds a certain value.

AGENT ARCHITECTURE

There are three types of agents in the system namely Resource Discovery Agents, Buying and Selling Agents. The resource Discovery Agents work in the background and find out about resources that may want to join the marketplace. The Buying and Selling on the other hand perform automated negotiation based on a strategy hinted by the user. The architecture of the Resource Discovery Agents is simpler compared to the Buying and Selling agents.

Resource Discovery Agents

The Resource Discovery Agents of the IDS are as the name implies responsible for finding the XML resources on the whole Web. This functionality is achieved by searching all the web sites and following the links to find related resources. Since the resources that are acceptable to the marketplace present the metadata about themselves in RDF, the job of Resource Discovery Agents is not complex.

Once Resource Discovery Agents obtain an XML page, the RDF description is accessed and metadata available in the RDF is processed in order to understand the content of the XML document (the resource). If the resource provides services or sells items, then the Resource Discovery Agent contacts the owner of the resource.

Information about the contact points are obtained from the RDF metadata, which gives all the information about the resource including the owner, the author and the mail address. A possible contact mechanism is e-mail. The Resource Discovery Agent sends an e-mail to the owner of the resource describing the facilities of the Marketplace and the Web address of the marketplace.

Then it is the resource owner's choice to join the marketplace. If s/he decides to join the marketplace s/he can connect to Marketplace's web site and can download the selling agent template for customization.

In summary, Resource Discovery Agents are simple programs which do not require to be re-configured or dynamically modified at run time.

Phase II
Phase III
Strategy Deter.
Phase V
External Knowledge Repository
Internal Knowledge Repository
Communication Manager
User GUI
Counterpart Agent IDS
User

Figure 3: The Architecture of Agents

Buying and Selling Agents

In our system, the templates of buying and selling agents exist in the IDS and are provided to buyers and sellers to automatically reconfigure their agents. The agents deploy workflow technology that provides for easy and controlled re-structuring and dynamic modification facilities which are critical for customization and adaptation of agents.

Workflow approach allows buyers and sellers to define their own tasks and to invoke their already existing applications within the workflow and to re-structure the control and data flow between the tasks, in other words, to automatically create a custom built workflow from the workflow template. The higher level of abstraction provided by the workflow technology makes this customization of agents for different users possible.

Our agent architecture necessitates the customization of workflow both at compile time and at run time. At compile time, according to the specifications in the forms, the particular activities to be invoked and their control flow is decided. For example the user may not wish to use an automated payment process in which case the payment activity is not included in the workflow specification generated for that customer.

Once the agent (workflow) structure is defined by the user the agent can be activated at the user's site. The agents perform straightforward tasks during the Phases I,II,III and V of the interaction protocol. But the tasks in the Phase IV which involves the negotiation between the agents can not be defined from the beginning. Instead they are created and organized dynamically depending on:

(1) the responses/proposals from the counterpart agents,

(2) the interaction characteristics of the user and

(3) the outcomes of the strategic reasoning.

Therefore the structure and control flow between the tasks in Phase IV must be defined dynamically and should be modified on the fly. These features require workflow technology which allow for run time modifications.

The agents at every step evaluate the inputs received from counterpart agents and users and determine a negotiation strategy. Then agents create new components to the workflow which are responsible for realizing this strategy. An example to the changes that may be necessary at run time is the following: As a result of the buying strategy, different patterns of invocations may be produced. For example, buying strategy may decide to contact two selling agents with very similar offers in parallel, or it may choose to contact the most promising selling agent first and try the others only if it can not succeed with this one.

The added advantage of using workflow technology in realizing agents is the recovery facility provided. As an example a selling agent may have committed a payment activity after which the shipment activity fails. In this case the selling agent can be automatically rolled back by the workflow system by executing a compensation activity for the payment activity.

The workflow scheduler of the agents must have a distributed scheduler since a centralized scheduler is a potential bottleneck.

Workflow Agent Implementation

We have developed a workflow system architecture to support the agent technology described. The workflow has componentized architecture and uses the block structured specification language described in [Dogac, 1998a]. The various types of blocks defined in the specification language constitute the components of the workflow. Blocks can be nested and the top level block represents the workflow process. Since the block structured language confines intertask dependencies to a well formed structure, the automated generation of agent from a workflow template becomes possible.

When it comes to the scheduling policy of the workflow, the described agent architecture seems to have somewhat conflicting requirements. The scheduling should be distributed to avoid centalized scheduler bottleneck where the whole agent workflow comes to a halt when the centralized scheduling site fails. In distributed scheduling there are several schedulers running on different nodes of the network each executing a part of a process instance so that the execution can continue even when some of the sites fail. As an example if the site where the negotiation is handled fails after sending the appropriate messages to the rest of the sites, the workflow agent can successfully keep on scheduling and executing the remaining parts of workflow like payment or shipment.

Yet when it comes to run time modification of a workflow with a distributed scheduling mechanism, finding out about the pieces of a process instance and exerting control on them becomes very inefficient.

Our solution to this problem is as follows: We handle the run time modifications within the scope of a block which nicely fits with the requirements of agents. We exert central control over the activities in the block with a block scheduler which determines the execution sequence of activities within its scope. Yet the sheduling of the blocks within a workflow are distributed.

Hence having central schedulers for blocks facilitate run time modifications on the blocks, and having blocks scheduled in a distributed manner increases the failure resiliency and performance of the system.

Components of Agents

The buying and selling agents in our architecture contain some standard modules as indicated in Figure 3, which are:

1. Communication Manager,
2. Internal Knowledge Repository,
3. External Knowledge Repository, and
4. User GUI.

In our model agents communicate with each other and with IDS directly by sending and receiving KQML messages. The Communication Manager is responsible for receiving and sending these messages in a convenient and secure way. It contains low level information related to communication and security and provides abstraction to the other modules. It is the communication manager that

- obtains the network addresses of the counter parties from IDS and stores them locally to prevent communication overhead and maps agent ids to the network addresses,
- performs message format conversion that gets KQML messages from the other agents and converts them to internal structure or that gets messages from higher levels and converts them to associated KQML messages
- ensures security (if requested) by authentication, and encryption and decryption of the messages. In this respect the trader can give a pair of keys (public and private) to the agents when they are initially created to be used in the negotiation phase. When the agents are informed about the counter agents they are provided with the public keys of these agents which they can use to encrypt messages to be sent to them and to perform authentication.

It should be noted that when the Communication manager is implemented as a separate component the interagent communication method can be easily modified to CORBA or email by modifiying this component.

The Internal Knowledge Repository stores and provides information about the internal structure of the agent itself. This information contains

- the product information which are names, range, desired values and weights for properties and
- strategy information that is used in determining the negotiation strategy, which includes deadlines, price determination function and preferences of the user

Both selling and buying agents keeps the state information to be used in determining the negotiation strategy. The External Knowledge Repository stores and provides information about the counterpart agents. This information includes:

- the counterpart agent information such as id, location etc.
- history of the negotiation for each agent which is exploited in determining negotiation strategy and
- current state for each negotiated item, that is current bid and their evaluated value.

User interaction is critical for the success of the agents. The user GUI is responsible for the interaction between the agent and the user. This interaction involves:

- initial configuration of the workflow,
- monitoring of the progress by the user and
- direct intervention of the user to the negotiation strategy determination activity.

An Alternative: Mobile Agents

An alternative to realize agents is to use mobile agent paradigm. It is obvious that mobile agents can make certain applications easier to develop, or improve reliability and efficiency when used in the proper content. For example in applications that depend on collaboration among a large number of people who are not colocated, people can be represented by mobile agents, gathering in one central location to do their collaboration and then returning home to display details. Another area in which mobile agents may be useful is in processing large amounts of data over low-reliability networks where mobile agents are transferred to the locations that data resides to perform processing and are returned to home to present results [Kinnery, 1998]

In spite of the stated advantages of the mobile agents, they have some drawbacks. Firstly in order for them to visit a site, the site must run a special agent server software, hence it is not possible to move agents to every site. Secondly, security is a very important issue to consider: when a mobile agent which contains private information moves to another host, one should be certain that its information will not be broken. In our scenario we prefer to use stationary agents rather than mobile agents for the following reasons:

1. Our agents do not perform large amount data processing. Therefore it is not critical to take advantage of locality during the operations.
2. The selling and buying agents are created by using templates on the sites of buyer or seller. It may not be possible or desirable to load and run the mobile agent host systems on these sites.
3. The buying agents may contain private information such as credit card number, and the owners may not want it to be transferred to another system over the network.
4. The buying and selling agents may require (depending on the desires of the owner) owner interaction which makes it desirable to run the agents on the site of the owners so that they can easily communicate and monitor through GUI.

FEASIBILITY

The technological requirement of the architecture proposed is the semantic interoperability of the Web resources. The building blocks for this, although have already been defined or are being defined mostly as standards, are at their infancy. For example, work is underway to define XML-based data exchange formats in both the chemical and the health care communities. A number of industry groups defined SGML DTDs for their documents (e.g. the US Defense Department, which requires much of its documentation to be submitted according to SGML DTDs)[Manola, 1998]. A large US project aims to define specific property names for specific elements in computer industry that can possibly be implemented through XML DTDs [Danish, 1998].

The architecture we describe requires the DTDs for the user groups to be available. Note that since RDF assertions use properties defined in the schemas, i.e., DTDs, the use of RDF also depends on the availability of standard DTDs. Until the standard DTDs become available and the RDFs start using these schemas, there is a need for the following modifications in METU-EMar architecture in realizing the proposed scenario:

1. The resource discovery agents utilize machine understandable information (RDF) and therefore can not be implemented easily when the standard vocabulary (DTDs) used by RDF is not available. In this case, resource discovery agents should either be more intelligent or include heuristic techniques to understand the content of the resources.
2. When XML files have different DTDs (i.e., different users define their own ways of using attribute/value pairs to represent the same information), there is a need for a mechanism to identify associations among the terminologies of the XML files. This can be achieved through a translation mechanism between terminologies. This translation is also needed in the negotiation phase among the buying and the selling agents.

Also as stated previously, more solid bargaining algorithms must be developed [Bichler, 1998] to better exploit the scheme described.

ADVANTAGES

It is clear that in a marketplace as large as the one provided by the Web, the service provided by the proposed architecture is invaluable. It will not only help to locate better opportunities for both the buyers and the sellers but it will also save a lot of their time in negotiations. In other words, the proposed marketplace aims to find the best conditions for its clients and help to overcome the limitations of direct communications between customers and suppliers. The marketplace enables the customers to reach various suppliers whose existence they are unaware of and hence it would be impossible for them to reach otherwise. Symmetrically, the marketplace also gives the suppliers the chance to contact to a much wider range of customers.

AN ALTERNATIVE APPROACH TO KQML: CORBA

CORBA together with the Web can also be used as the distribution infrastructure. In this case, all the agents in the system and IDS can be implemented as CORBA objects. Using CORBA as the infrastructure provides the opportunity to use OMG's Trading Object Service as a trader of IDS.

CORBA as Distribution Infrastructure

Web itself and the distributed object platforms like CORBA or Active X/DCOM provide a distribution infrastructure. It is possible to use the Web (HTTP, HTML and Java) in conjunction with an object-oriented "communication bus" following Common Object Request Broker Architecture's (CORBA) Object Request Brokers (CORBA 2.0 and IIOP). Indeed, these sets of technologies constitute the basis of some of the major electronic commerce platforms like Netscape ONE (Open Network Environment), Oracle's NCA (Network Computing Architecture), IBM's CommercePoint and Sun and JavaSoft's Java Electronic Commerce Framework [Tanenbaum, 1997].

Using CORBA 2.0 and IIOP with Web rather than using Web alone provides the following advantages [Orfali, 1997]:

1. In Web, method invocation is realized through HTTP and Common Gateway Interface (CGI) protocol. When this HTTP/CGI layer is replaced by CORBA, since CORBA allows clients to directly invoke methods on a server, a lot of overhead is avoided. Furthermore, any IDL defined method on the server can be invoked and typed parameters can be passed instead of just strings.

2. With CGI, a new instance of a program must be started every time an applet invokes a method on the server. With CORBA, the same server object receives successive calls from the client and preserves the state between these invocations.

3. CGI is a stateless protocol, that is, CGI does not maintain information from one form to the next. Therefore, hidden fields within a form are used to maintain state on the client side. CORBA maintains the state between client invocations avoiding this overhead, too.

4. CGI creates a bottleneck because it has no way to distribute the incoming requests across multiple processes and processors. CORBA ORBs on the other hand can create as many server objects as necessary. These server objects can run on multiple servers to provide load balancing for incoming client requests.

5. With CORBA, Java clients and applets can invoke a wide variety of IDL defined operations on the server. In contrast, HTTP clients are restricted to a limited set of operations.

6. CORBA provides a rich set of distributed object services that augment Java, including trader, transactions, security, naming and persistence.

It should be noted that, like HTTP, CORBA's IIOP uses Internet as the backbone. This means that both IIOP and HTTP can run on the same networks.

As a summary, CORBA in conjunction with Web seems to be a very promising infrastructure for electronic commerce applications.

Trading Object Service (TOS) as Trader

The OMG Trading Object Service [OMG, 1996] facilitates the offering and the discovery of instances of services of particular types. A trader is an object that supports the Trading Object Service in a distributed environment. It can be viewed as an object through which other objects can advertise their capabilities and match their needs against advertised capabilities. Advertising a capability or offering a service is called "export". Matching against needs or discovering services is called "import". Export and import facilitate dynamic discovery of, and late binding to, services.

To export, an object gives the trader a description of a service together with the location of an interface at which that service is available. To import, an object asks the trader for a service having certain characteristics. The trader checks against the service descriptions it holds and responds the importer with the location of the selected service's interface. The importer is then able to interact with the service.

Due to the sheer number of service offers that will be available worldwide, and the differing requirements that users of a trading service will have, it is inevitable that a trading service will be split up and that the service offers will be partitioned. Traders in different partitions interact with each other to answer the needs of a client.

Comparison of KQML with CORBA in Communication

CORBA provides the following basic advantages to our architecture:

- CORBA provides simpler communication mechanism among the agents and the IDS, compared to KQML which introduces a lot of communication overhead. When the agents and the IDS are defined as CORBA objects, the communication among them can be handled using predefined CORBA interfaces rather than the KQML messages. When communication among the objects is required the objects (agents or IDS) invoke each other's predefined methods using IIOP and passing the parameters instead of sending KQML messages.
- Using CORBA as the infrastructure provides the opportunity to use OMG's Trading Object Service as a trader of IDS. The selling agents of the resources as well as the buying agents can be registered to the related trader objects through the "Register" interface of this service and the buying agents find out about the selling agents through the "Lookup" interface and vice versa. Trading Object Service is distributed in the sense that several traders can be linked through the "Link" interface and can be searched depending on the prespecified policies.

Using CORBA as the infrastructure, on the other hand, requires an ORB at every site of the marketplace which may restrict the scope of the marketplace. Also it may be necessary to provide an ORB specific worklow template.

CONCLUSIONS

The Internet is revolutionizing commerce. However, closed markets that cannot use each other's services, incompatible applications and frameworks that can not interoperate or build upon each other are hampering the progress of electronic commerce [Tanenbaum, 1997].

The need for semantic interoperability of the resources on the Web resulted in a series of standardization efforts from the World Wide Web Consortium. In this paper, we present an electronic market that exploits these standards as well as some other emerging technologies like workflow agents. We also present a workflow agent architecture to meet the demands of buying and selling agents in the marketplace presented.

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Electronic Acknowledgement Receipt

EFS ID:	10409697
Application Number:	12906979
International Application Number:	
Confirmation Number:	1141
Title of Invention:	Methods of expanding commercial opportunities for internet websites through coordinated offsite marketing
First Named Inventor/Applicant Name:	D. Delano Ross
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	23-CON3
Receipt Date:	28-JUN-2011
Filing Date:	18-OCT-2010
Time Stamp:	21:06:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	11-06-28-DDR-CON3-Suppp_IDS_Cover.pdf	14998 0738fb96bec40b1d04ec387765ba37c78c5d3037	no	1

Warnings:

Information:

2	Information Disclosure Statement (IDS) Form (SB08)	11-06-28-DDR-CON3-FORM_1449.pdf	62266 2a9ede00079b233c87e7d3d2b7064b7ce335b431	no	3
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10	Non Patent Literature	Lycos.pdf	6036710 84a8aa886fc1a3d2a9f006724a31cf54ab38df54	no	38

Warnings:					
Information:					
11	Non Patent Literature	Internet_Archive-FAQ-part_of_Lycos.pdf	3389895 5d9741cdfd711bd3c79ecf65fbd7920a9ba35883	no	44
Warnings:					
Information:					
12	Non Patent Literature	REI.pdf	11231679 87921652fd31905e913a81a09ab9673554ef56e8	no	15
Warnings:					
Information:					
13	Non Patent Literature	IBM_OS390-4-up.pdf	12249838 89a929d6ad08da7ddb6c46bdf77e737cda61ec44	no	55
Warnings:					
Information:					
14	Non Patent Literature	Using_CompuServe-CIS-4-up.pdf	4646601 5e3c7dcc5b09e9ef0d70077b3c4d5780d64df525	no	41
Warnings:					
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15	Non Patent Literature	How_Get_Most_Out_Of_CompuServe-CIS.pdf	2033550 e9aa030cd811891c012deac2a2c20d75d7369cbc	no	6
Warnings:					
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16	Non Patent Literature	DPP-Build_Prog_Usage_Guide-CIS.pdf	653927 df2d21ce4e1d6b3e0b72187cf2c59ef1549fdd3e	no	17
Warnings:					
Information:					
17	Non Patent Literature	Comb_Mall_Prod_Analysis-CIS.pdf	9724257 9df01dfb1d0562efcda0035568711df064f72870	no	6
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18	Non Patent Literature	Hubbard-E-commerce_firm_lands_9M.pdf	310985 6c22e4db68ff2beb4550a4afbe0afd1b26e95e60	no	3
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19	Non Patent Literature	TeachNet.pdf	270987 e1d8de8768aee665af6bb0ada431bbca6f4cf39a	no	4
Warnings:					
Information:					
20	Non Patent Literature	Talk_City_Online.pdf	100094 9b0666fa5912c433827071349da50069354a8401	no	2
Warnings:					
Information:					
21	Non Patent Literature	Dunn-Winning_Affiliate_Game-4-up.pdf	5008862 2895374fdcb9622938df093537ea7681fdc6bdb2	no	23
Warnings:					
Information:					
22	Non Patent Literature	e-biz_case_studies-REI-IBM-circa_1999.pdf	3642312 15cddd3ccbe609bd519d4bad1de32cd933742d77	no	14
Warnings:					
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23	Non Patent Literature	e-biz_leading_retailer-IBM.pdf	234292 059a99542d7ce15381b9d0275cdbcc697fe5dfcf	no	2
Warnings:					
Information:					
24	Non Patent Literature	IBM_Launches.pdf	3912014 3affdc0ef7f3da600a3699983ffe29d7304077d2	no	5
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25	Non Patent Literature	Vestal-Elec_Commerce_Enviros.pdf	11378521 9f5eae6c363ebf7598ab9d696e85999dd8f86944	no	35
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26	Non Patent Literature	Sawhney-Emerg_Landscape.pdf	5157825 d3cddf5e8899c0ff9a2862b9ba5a4ec096f21494	no	11
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27	Non Patent Literature	Klein-New_Architectures.pdf	6031209 a5ddeba102fe0ad67b55449b7165cd28de245eca	no	12
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28	Non Patent Literature	Yarden-Evaluating_Performances.pdf	1579342 4ed2a95a9040e5574149c1b2f06512e500399b98	no	4
Warnings:					
Information:					
29	Non Patent Literature	Zwass-Structure_and_Macro.pdf	1912444 81d81829b7757d770336621021e40306d83ddd4a	no	27
Warnings:					
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30	Non Patent Literature	Bakos-Emerging_Role.pdf	12514386 79426f17308feac22619a19a21505355c3004cab	no	14
Warnings:					
Information:					
31	Non Patent Literature	Bailey-Exploratory_Study.pdf	1717016 ed5bec982a9cf4896ecb84e7881cac794e9e3485	no	15
Warnings:					
Information:					
32	Non Patent Literature	Burton-Evolution_Elect_Mktplcs.pdf	2005463 b4e7c28d32a78dd4029dbf92977ae821d0eefb2c	no	25
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33	Non Patent Literature	Dogac-Elec_Mktplc_Arch-circa_1999.pdf	1395387 ff1be1eb36b3dd9ac29131ce64950b6c6c6466f5	no	22
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			Total Files Size (in bytes):	124119696	

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Ross, D. Delano Jr. et al. Art Unit : 3625
Serial No. : 12/906,979 Examiner : ______________
Filing Date : 10/18/2010 Conf. No. : 1141
Title : Methods of expanding commercial opportunities for internet websites through coordinated offsite marketing

---

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – June 28, 2011

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Dear Sir:

Assignee discloses the references listed on form PTO-1449 attached to this document. The references were produced by defendants in litigation Case No. 2:06CV42 (E.D. Tex.) Assignee requests that the Office review all materials in that litigation case file. By citing these references, assignee does not concede that they qualify as prior art, nor that the listed dates are accurate.

If the Office has any questions, please feel free to contact applicant's undersigned attorney of record.

Respectfully submitted,

DDR HOLDINGS, LLC

by its attorney

Dated: June 28, 2011

/Louis J. Hoffman/
Louis J. Hoffman
Reg. No. 38,918

LOUIS J. HOFFMAN, P.C.
11811 North Tatum Boulevard
Suite 2100
Phoenix, Arizona 85028
(480) 948-3295

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/906,979	Filing Date 10/18/2010	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT	**06/28/2011**	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 16	Minus	** 20	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $110 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	**0**	OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)					
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DAVID SASFAI/

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/906,979	10/18/2010	2447	462	23-CON3	20	1

CONFIRMATION NO. 1141

26362
LOUIS J. HOFFMAN, P.C.
11811 North Tatum Boulevard, Suite 2100
Phoenix, AZ 85028

FILING RECEIPT

OC000000044221719

Date Mailed: 11/08/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

D. Delano Ross JR., Alpharetta, GA;
Daniel D. Ross, Dunwoody, GA;
Joseph R. Michaels, Marietta, GA;
William R. May, Atlanta, GA;
Richard A. Anderson, Powder Springs, GA;

Power of Attorney: The patent practitioners associated with Customer Number 26362

Domestic Priority data as claimed by applicant

This application is a CON of 11/343,464 01/30/2006 PAT 7,818,399
which is a CON of 10/461,997 06/11/2003 PAT 6,993,572
which is a CON of 09/398,268 09/17/1999 PAT 6,629,135
which claims benefit of 60/100,697 09/17/1998

Foreign Applications

If Required, Foreign Filing License Granted: 10/27/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/906,979**

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No
**** SMALL ENTITY ****

Title

Methods of expanding commercial opportunities for internet websites through coordinated offsite marketing

Preliminary Class

709

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/906,979	10/18/2010	D. Delano Ross JR.	23-CON3

CONFIRMATION NO. 1141

POA ACCEPTANCE LETTER

OC000000044221747

26362
LOUIS J. HOFFMAN, P.C.
11811 North Tatum Boulevard, Suite 2100
Phoenix, AZ 85028

Date Mailed: 11/08/2010

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/18/2010.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/ttran/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

To: Louis@valuablepatents.com,donald@valuablepatents.com,shaelyn@valuablepatents.com
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Subject: Private PAIR Correspondence Notification for Customer Number 26362

Nov 08, 2010 05:51:03 AM

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Phoenix, AZ 85028
UNITED STATES

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Application	Document	Mailroom Date	Attorney Docket No.
12906979	APP.FILE.REC	11/08/2010	23-CON3
	N570	11/08/2010	23-CON3

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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	CON of 11/343,464
Filing Date	10/18/2010
First Named Inventor	Ross, D. Delano
Art Unit	2445 (in parent)
Examiner Name	Winder, Patrice L. (in parent)
Attorney Docket Number	23-CON3

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		BPAI decision; Ex parte DDR HOLDINGS, LLC; Appeal 2009-0013987; Reexamination Control 90/008,374; Patent No. 6,993,572; April 16, 2010.	☐
		BPAI decision; Ex parte DDR HOLDINGS, LLC; Appeal 2009-0013988; Reexamination Control 90/008,375; Patent No. 6,629,135; April 16, 2010.	☐
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Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] Applicant's unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.

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Form PTO-1449 (Modified)

List of Patents and Publications For Information Disclosure Statement

Page 1 of 11

Serial No. : CON of 11/343,464

Applicants : D. Delano Ross, Jr. et al.

Filed : 10/18/2006

Group : 2445

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number	Date	Name	Filing Date *
	A	5768528	06/16/1998	Stumm	
	B	6016504	01/18/2000	Arnold, et al.	08/28/1996
	C	6073124	06/06/2000	Krishnan, et al.	07/15/1997

* Provided only for the U.S. Patent issued after the filing date of the priority provisional application.

OTHER ART

Examiner Initials	Cite No.	Author, Title, Date, Pertinent Pages, Etc.
	1	"World Choice Travel, Inc.-Affiliate Program Overview", date not specified.
	2	VIESCAS, "The Official Guide To The Prodigy Service", Microsoft Press, (certain pages), 1991.
	3	"Real-Time Travel Information Is Available Online", Newsbytes News Network, January 17, 1995.
	4	SARKAR et al., "Intermediaries and Cybermediaries: A Continuing Role for Mediating Players in the Electronic Marketplace", JCMC Vol. 1 No. 3, December 1995.
	5	HOFFMAN et al., "Commercial Scenarios for the Web: Opportunities and Challenges", http://sloan.ucr.edu/1995/12/24/hoffman-novak-and-chatterjee-december-1995/, December 24, 1995.
	6	WILSON, "The Link Site Marketing Strategy", Web Marketing Today, Issue 13, May 11, 1996.
	7	"The Weather Channel Predicts Sunny Skies For Two New Online Advertisers", PR Newswire Association, Inc., May 14, 1996.
	8	"AT&T Business Network Launches Personal Business Services", PR Newswire Association, Inc., September 9, 1996.
	9	NOVAK and HOFFMAN, "New Metrics For New Media: Toward The Development Of Web Measurement Standards", Project 2000: elab.vanderbilt.edu, Vanderbilt University, September 26, 1996.
	10	DEIGHTON, "The Future Of Interactive Marketing", Harvard Business Review, Pg. 4-16, November 1996.

Examiner: ____________________ Date Considered: ________________

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance *and* not considered. Include copy of this form with next communication to applicants.

Form PTO-1449 (Modified)

List of Patents and Publications For Information Disclosure Statement

Page 2 of 11

Serial No. : CON of 11/343,464

Applicants : D. Delano Ross, Jr. et al.

Filed : 10/18/2006

Group : 2445

	11	"MyWay Teams with Lycos, MTV, Others on Push Technology", Post-Newsweek Business Information Inc., February 10, 1997.
	12	"WavePhore Inc.; WavePhore Signs Top Content Partners for WaveTop Home PC Data Broadcasting Service", M2 Communications Ltd., April 9, 1997.
	13	WILLIAMS, "Site Can Help The Infrequent Flier In Planning Trips", Richmond Times-Dispatch, April 28, 1997.
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	C	6,253,188	06/26/01	Witek et al.	705	14	
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	J	5,991,740	11/23/99	Messer	705	27	
	K	5,991,735	11/23/99	Gerace	705	10	
	L	5,987,498	11/16/99	Athing et al.	709	203	
	M	5,983,270	11/09/99	Abraham et al.	709	224	
	N	5,983,227	11/09/99	Nazem et al.	707	10	
	O	5,978,766	11/02/99	Luciw	705	1	
	P	5,963,915	10/05/99	Kirsch	705	26	
	Q	5,956,709	09/21/99	Xue	707	3	
	R	5,948,061	09/07/99	Merriman et al.	709	219	
	S	5,940,843	08/17/99	Zucknovich et al.	715	516	
	T	5,940,834	08/17/99	Pinard et al.	707	102	
	U	5,937,392	08/10/99	Alberts	705	14	
	V	5,933,811	08/03/99	Angles et al.	705	14	
	W	5,930,765	07/27/99	Martin	705	14	
	X	5,926,798	07/20/99	Carter	705	26	
	Y	5,918,239	06/29/99	Allen et al.	715	526	
	Z	5,915,243	06/22/99	Smolen	705	14	
	AA	5,913,202	06/15/99	Motoyama	705	36R	

Examiner: ____________ Date Considered: ____________

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance *and* not considered. Include copy of this form with next communication to applicants.

Form PTO-1449 (Modified)

List of Patents and Publications For Applicant's Information Disclosure Statement

Serial No.: CON of 11/343,464

Applicants: D. Delano Ross Jr., et al.

Filed: 10/18/2010 Group: 2445

	BB	5,913,040	06/15/99	Rakavy et al.	709	232
	CC	5,907,830	05/25/99	Engel et al.	705	14
	DD	5,898,836	04/27/99	Freivald et al.	709	218
	EE	5,897,622	04/27/99	Blinn et al.	705	26
	FF	5,895,468	04/20/99	Whitmyer, Jr.	707	10
	GG	5,894,554	04/13/99	Lowery et al.	709	203
	HH	5,893,091	04/06/99	Hunt et al.	707	3
	II	5,890,175	03/30/99	Wong et al.	715	505
	JJ	5,884,045	03/16/99	Kurihara	709	237
	KK	5,884,033	03/16/99	Duvall et al.	709	237
	LL	5,878,219	03/02/99	Vance, Jr. et al.	709	217
	MM	5,862,325	01/19/99	Reed et al.	709	201
	NN	5,860,068	01/12/99	Cook	705	26
	OO	5,848,396	12/08/98	Gerace	705	10
	PP	5,825,884	10/20/98	Zdepski et al.	705	78
	QQ	5,819,285	10/06/98	Damico et al.	707	104.1
	RR	5,812,769	09/22/98	Graber et al.	709	228
	SS	5,809,481	09/15/98	Baron et al.	705	14
	TT	5,802,299	09/01/98	Logan et al.	709	218
	UU	5,796,952	08/18/98	Davis et al.	709	224
	VV	5,745,681	04/28/98	Levine et al.	709	200
	WW	5,727,159	03/10/98	Kikinis	709	246
	XX	5,724,521	03/03/98	Dedrick	705	26
	YY	5,724,424	03/03/98	Gifford	705	79
	ZZ	5,721,827	02/24/98	Logan et al.	709	217
	AAA	5,715,314	02/03/98	Payne et al.	705	78
	BBB	5,717,860	02/10/98	Graber et al.	709	227
	CCC	5,712,979	01/27/98	Graber et al.	709	224
	DDD	5,710,887	01/20/98	Chelliah et al.	705	26

Examiner: ______________________ Date Considered: ________________

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Form PTO-1449 (Modified)

List of Patents and Publications For Applicant's Information Disclosure Statement

Serial No.: CON of 11/343,464

Applicants: D. Delano Ross Jr., et al.

Filed: 10/18/2010 Group: 2445

________	EEE	5,699,528	12/16/97	Hogan	705	40
________	FFF	5,630,125	05/13/97	Zellweger	707	103R
________	GGG	5,596,702	01/21/97	Stucka et al.	715	746
________	HHH	5,590,197	12/31/96	Chen et al.	705	65
________	III	5,537,314	07/16/96	Kanter	705	14
________	JJJ	5,515,270	05/07/96	Weinblatt	705	14
________	KKK	5,319,542	06/07/94	King, Jr. et al.	705	27

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number	Date	Country	Class	Subclass	Translation Yes / No
________						

OTHER ART

Examiner Initials	Author, Title, Date, Pertinent Pages, Etc.

Examiner: ____________________ Date Considered: ________________

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Form PTO-1449 (Modified)

List of Patents and Publications For Applicant's Information Disclosure Statement

Serial No.: CON of 11/343,464

Applicants: D. Delano Ross Jr., et al.

Filed: 10/18/2010 Group: 2445

OTHER ART

Examiner Initials		Author, Title, Date, Pertinent Pages, Etc.
	LLL	PCT International Search Report PCT/US99/21656 dated 25 January 2000.
	MMM	Widyantoro, Dwi, et al. "An Adaptive Algotithm for Learning Changes in User Interests," Proceedings of Conference on Knowledge and Information Management, pp. 405-412, November (1999).
	NNN	Cimino JJ, et al. "Architecture for a Web-Based Clinical Information System that Keeps the Design Open and the Access Closed." Proc. AMIA Symp. 1998, pp. 121-125; November, 1998.
	OOO	"Worldres Teams Up With Yahoo!"; news release from http://www.wiredhotelier.com; September 16, 1998.
	PPP	Form S-1, Amendment No. 4; filed with Securities and Exchange Commission, by Digital River, Inc.; August 11, 1998.
	QQQ	Nwana, Hyacinth, et al. "Agent-Medicated Electronic Commerce: Issues, Challenges and Some Viewpoints," Proceedings of the 2nd International Conference on Autonomous Agents, pp. 189-196, May (1998).
	RRR	"Technology Solutions to Electronic Transactions: A White Paper"; Digital River, Inc.; 1998.
	SSS	"Marketing Software on the Internet: A White Paper"; Digital River, Inc.; 1998.
	TTT	Hudson, S. et al., "Supporting Dynamic Downloadable Appearances in an Extensible User Interface Software and Technology, p 159-168, Oct. 1997
	UUU	"San Diego's CVB Is First To Implement internet Reservations Through Worldres"; news release from http://www.wiredhotelier.com; September 20, 1997.
	VVV	"Worldres Provides CVBs Free Internet Technology for Web/Voice Hotel Bookings"; news release from http://www.wiredhotelier.com; July 22, 1997.
	WWW	"Places to Stay, Now WorldRes, Completes $4 Million 1st-Round Venture"; news release from http://www.wiredhotelier.com; March 4, 1997.
	XXX	Balabanovic, M. and Shophanm, Y., Fab: Content-Based Collaborative Recommendation, Communications of the ACM, Vol. 40, No. 3, March 1997, pp. 66-73.
	YYY	Yergeau, F. et al., "Internationalization of the Hypertext Markp Language," RFC 2070, p. 1-43, Jan. 1997.
	ZZZ	"A Multilevel Approach to Intelligent Information Filtering: Model, System, and Evaluation," ACM Transactions on Information Systems, Vol. 15, Issue 4 (1997).
	AAAA	"About WorldRes"; web page printout; URL: http//:web.archive.org/web/19970702032337/www.worldres.com; 1997
	BBBB	Chistensen, Eric; "Mapping a More Complete Internet Strategy"; web page printout, URL: http://web.archive.org/web/19970702032753/www.worldres.com; 1997.

Examiner: ____________________ Date Considered: ______________

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance *and* not considered. Include copy of this form with next communication to applicants.

Form PTO-1449 (Modified)

List of Patents and Publications For Applicant's Information Disclosure Statement

Serial No.: CON of 11/343,464

Applicants: D. Delano Ross Jr., et al.

Filed: 10/18/2010 Group: 2445

OTHER ART

Examiner Initials		Author, Title, Date, Pertinent Pages, Etc.
	CCCC	Dukay, Kristin. "Unifying a large corporate Web site: A case study of www.microsoft.com." Proc. IEEE Int'l Professional Communication Conference 1997, pp. 321–327.
	DDDD	Web Pages, http://www.broadvision.com (1996).
	EEEE	Dialog file 16 (database PROMT ®), No. 6016914, BookSite launches version 3.0 of the popular electronic commerce web site, "Business Wife," 2 pp, 2/23/96.
	FFFF	Dialog file 16 (database PROMT (R)) , No. 6296727, "Amazon.com introduces "Amazon.com Associates" – a new model for internet-based commerce." Business Wife, 3 pp. 7/18/96).
	GGGG	Can Mixing "Cookies" with Online Marketing be a Recipe for Heartburn? Infoworld, Vol. 18, No. 30, 7/22/96.
	HHHH	RealTime Travel Info Available Online, Dialog database file 9, document 01107096, 1/17/95.
	IIII	Online Growth Virtually Untapped; PC Vendors Taking More Advantage of Booming Sales, Computer Retail Week, Vol. 4, No. 64, p. 160, 6/6/94.
	KKKK	Selected documents from Incognito Café Web site describing Book Stacks Unlimited links partner program.
	LLLL	Resnick, P., et al., GroupLens: An Open Architecture for Collaborative Filtering of Netnews, Proceedings of ACM 1994 Conference on Computer Supported Cooperative Work, Chapel Hill, NC, pp. 175-86.

Examiner: ____________________ Date Considered: ______________

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance *and* not considered. Include copy of this form with next communication to applicants.

Form PTO-1449 (Modified)

List of Patents and Publications For Applicant's Information Disclosure Statement

Serial No.: CON of 11/343,464

Applicants: D. Delano Ross Jr., et al.

Page 1 of 1

Filed: 10/18/10 Group: 2445

U.S. PATENT DOCUMENTS

Examiner Initials		Document Number	Date	Name	Class	Subclass	Filing Date (if appropriate)
	A	5,796,393	08/28/1998	MacNaughton et al.			
	B	5,793,368	08/11/1998	Beer			
	C	5,778,367	07/07/1998	Wesinger, Jr. et al.			
	D	5,600,778	02/04/1997	Swanson et al.			
	E	5,970,472	10/19/1999	Allsop et al.			
	F	6,141,006	10/31/2000	Knowlton et al.			
	G	20040042432	03/04/2004	Riazi et al.			
	H	20040117442	06/17/2004	Thielen			

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number	Date	Country	Class	Subclass	Translation Yes / No

OTHER ART

Examiner Initials	Author, Title, Date, Pertinent Pages, Etc.

Examiner: ____________________ Date Considered: ______________

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance *and* not considered. Include copy of this form with next communication to applicants.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Ross, D. Delano Jr. et al.
Art Unit: : 2445*
Serial No. : ____________________
Examiner: : Winder, Patrice L.*
** In parent application S.N. 11/343,464*
Filing Date : 10/18/2010
Title : Methods of expanding commercial opportunities for internet websites through coordinated offsite marketing

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – October 18, 2010

PRELIMINARY AMENDMENT

Dear Sir:

Assignee requests entry of the following amendments as part of this continuation application.

- **Amendments to the Specification** begin on page 2.
- **Amendments to the Claims** begin on page 3.
- **Remarks** begin on page 7.

AMENDMENTS

IN THE SPECIFICATION

Please amend the first paragraph on page 1 as follows:

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of application Serial No. 11/343,464, filed January 30, 2006, now U.S. Patent 7,818,399, which is a continuation of application Serial No. 10/461,997, filed June 11, 2003, now U.S. Patent 6,993,572, which is a continuation of application Serial No. 09/398,268, filed September 17, 1999, now U.S. Patent 6,629,135, which claims the benefit of application Serial No. 60/100,697, filed September 17, 1998, which applications are hereby incorporated by reference.

IN THE CLAIMS

Please amend the claims as follows:

1. (Original) A process of creating and displaying Internet web pages comprising:

(a) computer storing indicia describing the appearance of a set of one or more visually perceptible elements, which elements are displayed, along with primary content, on web browsers accessing a first web page, and which set of elements suggest a source of the first web page; and

(b) using the computer-stored indicia to cause the display of a second web page on web browsers of computer users who indicate interest in a buying opportunity by following a selectable navigation link from the first web page leading to the second web page;

(c) wherein said second web page contains the set of visually perceptible elements along with content describing at least one commerce object;

(d) wherein the second web page apart from the commerce objects has a distinctive overall appearance corresponding to a distinctive overall appearance of the first web page apart from its primary content;

(e) wherein a first owner controls the primary content of the first web page and a second owner controls the content of the second web page and the information displayed on the second web page about the commerce object;

(f) wherein said at least one commerce object pertains to an opportunity to purchase an offering of a merchant, which is neither the first nor the second owner; and

(g) wherein the first and second owners have contracted with each other to share revenue generated as a result of computer users purchasing from the merchant as a result of visiting the second web page.

2. (Original) The process of claim 1 wherein computer storing indicia comprises computer storing indicia describing the appearance of a set of elements that suggests a source of the first web page by being consistent across a set of web pages,

including the first web page, which set constitutes some or all of a website of the first owner.

3. (Original) The process of claim 1 wherein computer-storing indicia comprises storing HTML code and images.

4. (Original) The process of claim 1 wherein the set of visually perceptible elements derived from the indicia comprises the appearance of the top and left side of the first web page.

5. (Original) The process of claim 1 wherein the set of visually perceptible elements derived from the indicia comprises the appearance of the header and footer of the first web page.

6. (Original) The process of claim 1 wherein the set of visually perceptible elements includes a set of navigational links, used on the first web page, each of which links, when activated, causes a browser to display a select page of a website of the first owner.

7. (Original) The process of claim 1 wherein the set of visually perceptible elements includes a logo identifying the first owner.

8. (Original) The process of claim 1 wherein the set of visually perceptible elements includes all of the following:

(a) a logo identifying the first owner;

(b) a color scheme used on the first web page;

(c) a page layout used on the first web page; and

(d) a set of navigational links, used on the first web page, each of which links, when activated causes a browser to display a select page of a website of the first owner.

9. (Original) The process of claim 1 wherein causing the display of the second web page comprises causing the display of the second web page on browsers of computer users who click the link.

10. (Original) The process of claim 9 wherein causing the display of the second web page comprises causing said display without any action by the computer user other than clicking the link.

11. (Original) The process of claim 1 wherein the commerce object is a catalog having a multitude of merchant offerings and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.

12. (Original) The process of claim 1 wherein the commerce object is a set of product categories and wherein the second web page further comprises a display accepting input of search parameters that can be used to search for products within the product categories.

13. (Original) The process of claim 1 wherein the second web page apart from the commerce objects has a distinctive overall appearance essentially matching the distinctive overall appearance of the first web page apart from its primary content.

14. (Original) The process of claim 1 wherein the merchant offerings is a type of goods.

15. (Original) The process of claim 1 wherein having a contract providing for sharing of revenue comprises having a contract that provides for the second owner to pay a commission to the first owner on account of purchases of merchant offerings on the second web page by computer users who followed the link from the first web page to the second web page.

16. (Original) The process of claim 1 further comprising directing computer users' web browsers to one or more third web pages providing a checkout procedure that includes collection of payment information, in response to the computer users' selection of the commerce object, indicating a desire to purchase the merchant's offering to which the commerce object on the second web page pertains.

17. (Original) The process of claim 16 wherein the one or more third web pages, apart from information displayed about the checkout procedure, have an overall appearance corresponding to an overall appearance of the first web page apart from its primary content.

18. (Original) The process of claim 1 further comprising forwarding to the merchant order information relating to computer users who select the commerce object

on the second web page, indicating a desire to purchase the merchant's offering to which the commerce object pertains.

19. (Original) The process of claim 1 wherein:

(a) computer storing indicia comprises computer storing HTML code and images describing the appearance of a set of elements that suggests a source of the first web page by being consistent across a set of web pages, including the first web page, which set constitutes some or all of a website of the first owner;

(b) causing the display of the second web page comprises causing the display of the second web page on browsers of computer users who click the link;

(c) the second web page apart from the commerce objects has a distinctive overall appearance essentially matching the distinctive overall appearance of the first web page apart from its primary content;

(d) the commerce object is a catalog having a multitude of merchant offerings;

(e) the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog; and

(f) having a contract providing for sharing of revenue comprises having a contract that provides for the second owner to pay the first owner on account of purchases of merchant offerings on the second web page by computer users who followed the link from the first web page to the second web page.

20. (Original) The process of claim 19 wherein the commerce object is a set of product categories and wherein the second web page further comprises a display accepting input of search parameters that can be used to search for products within the product categories.

Claims 21-70 (Cancelled).

REMARKS

The amendments to the specification are being made to update only the related applications section and hence do not contain any "new matter."

Please feel free to telephone the undersigned if it would in any way advance prosecution of this application.

Respectfully submitted,
ALMONDNET, INC.
by its attorney

Dated: October 18, 2010

/Louis J. Hoffman/
Louis J. Hoffman
Reg. No. 38,918

LOUIS J. HOFFMAN, P.C.
11811 North Tatum Boulevard
Suite 2100
Phoenix, Arizona 85028
(480) 948-3295

NONPUBLICATION REQUEST UNDER 35 U.S.C. 122(b)(2)(B)(i)

First Named Inventor	Ross, D. Delano Jr.
Title	Methods of expanding commercial opportunities for internet websites through coordinated offsite marketing
Attorney Docket Number	23-CON3

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).

Signature: /Louis J. Hoffman/

Date: 10/18/2010

Typed or printed name: Louis J. Hoffman

Registration Number, if applicable: 38,918

Telephone Number: (480) 948-3295

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing.**

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

This collection of information is required by 37 CFR 1.213(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PTO/SB/05 (08-08)
Approved for use through 09/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office. U.S. DEPARTMENT OF COMMERCE
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	23-CON3
First Inventor	Ross, D. Delano Jr.
Title	Methods of expanding commercial opportunities for internet websites through coordinated offsite marketing
Express Mail Label No.	n/a - filed through EFS

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: **Commissioner for Patents**
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Alexandria VA 22313-1450

1. ☐ **Fee Transmittal Form** (e.g., PTO/SB/17)
2. ☑ **Applicant claims small entity status.** See 37 CFR 1.27.
3. ☑ **Specification** [*Total Pages* 56]
   Both the claims and abstract must start on a new page
   (For information on the preferred arrangement, see MPEP 608.01(a))
4. ☑ **Drawing(s)** *(35 U.S.C. 113)* [*Total Sheets* 24]
5. **Oath or Declaration** [*Total Sheets* 4]
   - a. ☐ Newly executed (original or copy)
   - b. ☑ A copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional with Box 18 completed)*
     - i. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)*
   ☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission** *(if applicable, items a. – c. are required)*
   - a. ☐ Computer Readable Form (CRF)
   - b. Specification Sequence Listing on:
     - i. ☐ CD-ROM or CD-R (2 copies); or
     - ii. ☐ Paper
   - c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ **Assignment Papers** (cover sheet & document(s))
   Name of Assignee________________
10. ☐ **37 CFR 3.73(b) Statement** *(when there is an assignee)* ☐ **Power of Attorney**
11. ☐ **English Translation Document** *(if applicable)*
12. ☑ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☐ Copies of citations attached
13. ☑ **Preliminary Amendment**
14. ☐ **Return Receipt Postcard** (MPEP 503) *(Should be specifically itemized)*
15. ☐ **Certified Copy of Priority Document(s)** *(if foreign priority is claimed)*
16. ☑ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. ☑ Other: Certificate of Ownership and Assignee's Power of Attorney (copy from parent application)

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☑ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 11/343,464

Prior application information: *Examiner* Winder, Patrice L. *Art Unit:* 2445

19. CORRESPONDENCE ADDRESS

☑ The address associated with Customer Number: 26362 *OR* ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone		Email	

Signature	/Louis J. Hoffman/	Date	10/18/2010
Name (Print/Type)	Louis J. Hoffman	Registration No. (Attorney/Agent)	38,918

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

METHODS OF EXPANDING COMMERCIAL OPPORTUNITIES FOR INTERNET WEBSITES THROUGH COORDINATED OFFSITE MARKETING

CROSS-REFERENCE TO RELATED APPLICATIONS

This is a continuation of application Serial No. 10/461,997, filed June 11, 2003, now U.S. Patent 6,993,572, which is a continuation of application Serial No. 09/398,268, filed September 17, 1999, now U.S. Patent 6,629,135, which claims the benefit of application Serial No. 60/100,697, filed September 17, 1998, which applications are hereby incorporated by reference.

BACKGROUND OF INVENTION

1. FIELD OF INVENTION

The invention relates to a system and method supporting commerce syndication. More specifically, the invention relates to a system and method for computer based information providers to receive outsourced electronic commerce facilities in a context sensitive, transparent manner.

2. DESCRIPTION OF PRIOR ART

The World Wide Web began as a simple interface to the Internet using HTML (hypertext markup language) as a means of linking documents together. This allowed a researcher, for example, to embed "active" references in his or her documents that, if selected, would enable the reader to review the source of the reference first-hand. Programmers quickly capitalized on this technology, creating "web sites" which reflected less staid purposes, laying the groundwork for the literal "web" of content and interactive applications that exists today. In the early stages, website programmers increased visitor traffic by placing "links" within their websites to other websites, usually related in content or function, in exchange for a reciprocal link. Additionally, directories of websites, such as Yahoo, and search engines, such as WebCrawler, began to appear in an attempt to organize the content of the Internet so that its users could create "custom links pages" related to specific topics.

In these early days, the Web was mostly trafficked by programmers and "techies," and a commune-type "share and share alike" mindset prevailed. As a result, people were happy to litter their sites with links, knowing that, odds were, others would do the same for them and the traffic gain/loss would probably balance out. So, despite the fact that by including and promoting a "links" page, website operators were effectively encouraging people to leave their website, link sharing developed into a standard practice.

Then, entrepreneurs and other business-oriented individuals came along and introduced capitalism to the Internet. Profit-oriented website operators began to seek visitors wherever they could find them, and opportunistic owners of popular sites began to realize that they had an increasingly scarce resource – visitors. Such website owners began to sell the links they had previously offered for free in the form of paid advertisements. Search engines and directories became increasingly popular for two main reasons. First, the number of websites was growing astronomically, so it was becoming harder for users to find what they wanted. Second, since reciprocal links were either going away or were being replaced by links exclusively to non-competing websites, search engines and directories were the only way to find multiple resources for a single topic.

Amid frantic efforts on the part of corporate websites to get noticed, the sale of banner ads blossomed into a large industry called Internet advertising. Thousands of websites created space for banner ads and called the space "inventory." At first, they priced ads as a print ad might be priced: by CPM, or cost per thousand "impressions" each ad made on website visitors. Over time this pricing model gave way to arrangements more favorable to advertisers such as Cost Per Click-through and Cost Per Inquiry (meaning the advertiser only needs to pay when a visitor sees a banner ad and clicks on it and completes an information request form on the advertiser's site).

Some of the most successful Internet commerce websites, led by online bookseller Amazon.com, have begun to take an even more results-driven approach to the purchase of banner ads. They have offered to pay only for ads that, when clicked, result in a product sale. To provide a stronger incentive than a simple banner ad, these companies let third-party website owners list a subset of their goods (e.g., 10 of Amazon.com's millions of books, selected by the website owner) and promote them as they choose within their websites. Initiatives such as these have come to be described as "affiliate programs", "associate programs" or "commission based advertising programs".

The benefits of affiliate programs are significant. To the website owner, they constitute revenue-generating web content without requiring an investment in product inventory or additional infrastructure. They also create new revenues without necessarily reducing the website's available ad inventory. However, the greater benefit almost always accrues not to the affiliate, but to Amazon.com and other online stores. Not only do these sites benefit from the marketing resources of the affiliate operators, they are also able to lure the visitor traffic away from the affiliate. Once a visitor clicks on an affiliate ad and enters an online store, that visitor has left the affiliate's site and is gone. At best, affiliates are able to use "frames" to keep a shell of their own website around the vendor's site, but this is only a marginally effective solution. No alternatives have been able to address a fundamental drawback of the affiliate programs – the loss of the visitor to the vendor. At best, some Internet affiliate sales vendors have begun placing "return to referring website" links on their order confirmation screens, an approach that is largely ineffective. This limitation of an affiliate program restricts participation to less trafficked websites that are unconcerned about losing visitors. Meanwhile, search engines and directories continue to increase in their usefulness and popularity, while banner ads and old-style links continue their rapid loss of effectiveness and popular usage.

The present invention overcomes these limitation of present affiliate commerce systems and provides other benefits as will become clearer to those skilled in the art from the foregoing description.

SUMMARY OF THE INVENTION

The affiliate commerce system and method of the present invention represents a new paradigm of co-marketing on the Internet. Not only does the present invention provide its Hosts with the added value and incremental revenues of traditional affiliate programs, but the company also enables Hosts to control the customer experience before, during, and after the purchase transaction. At the same time, Merchants receive the same benefits as with older affiliate programs, i.e., increased marketing potential, incremental sales, and new customer relationships, but without the restrictive limitations of affiliate programs -- the loss of hard-won visitor traffic.

Additionally, the present invention can actually obviate the need for some merchants to invest in their own unique Internet presence. By using the present invention as their primary online sales channel, these Merchants can focus on product development, production, and order fulfillment and leave the exploration of the Internet to experts. The resulting ongoing cost savings and operational efficiencies magnify the potential benefits of the Internet while reducing the initial costs.

According to the present invention the look and feel of each participating Host is captured and stored. Hosts may include links to selected products or product categories within pages residing on the Hosts' website. Upon actuation of such a link by a visitor of the Host website, a page is presented to the visitor incorporating a replica of the Host's look and feel directed to the sale of the selected products or product categories.

The look and feel of a host is captured and stored by receiving an identification of an example page of a target host. The identified page is retrieved. The look and feel elements of the page are identified, and these elements are stored for future use in generating outsourced transparent pages, pages served by a server other than the host but with the host's look and feel. Such pages give the viewer of the page the impression that she is viewing pages served by the host.

The links included by the host directed to the outsource provider need not be statically linked to a particular product or product category. Such links may direct the outsource provider to dynamically select content to serve within the host's look and feel. This content may be selected based upon a contextual analysis of the page which includes the link. Further, the dynamic content need not be limited to products or product categories but may include any content within the system's data store that is amenable to contextual correlation with content in the page containing the link.

A cost effective, scalable architecture may be used to serve dynamically constructed pages such as those served by the e-commerce outsource provider. This architecture includes three levels: a Web server layer, an application server layer and a database server layer.

The Web server layer provides a front end presentation layer for interacting with end users. This layer may consist of one or more interchangeable low cost server systems. Any request from an end user may be fielded by any system within the layer. The selected system can contact any application server within the application layer to provide processed data for use in responding to the end user request.

The application layer supports interacting with the database server level to acquire needed data and processing it prior to presentation by the Web server layer. As with the Web server layer, this layer may consist of one or more interchangeable low cost server systems. Any Web server system may submit a request to any application server. The application server includes processing functionality suitable for the types of pages to be dynamically constructed.

The database server layer supports low level management of data used in dynamic page construction. The data store across the one or more low cost server systems is seamlessly viewed as an integrated whole. As a consequence, any database server within the layer can field any request for data submitted by an application server.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 depicts a typical hardware architecture implementing the present invention.

FIG. 2 illustrates the software architecture of the Web server layer.

FIG. 3 illustrates the software architecture of the application server layer.

FIG. 4 is a flow chart of the pages and procedures in the host signup process.

FIG. 5 is a flow chart of the pages and procedures in the host account information maintenance process.

FIG. 6 is a flow chart of the pages and procedures in the host look and fee capture process.

FIG. 7 is a flow chart of the pages and procedures in the host link generation process.

FIG. 8 is a flow chart of the dynamic content selection and presentation process.

FIG. 9 is a screen capture of a Merchant Manager page in a preferred embodiment.

FIG 10 is a screen capture of a Host Manager page in a preferred embodiment.

FIGs 11 - 18 are screen captures of the page in a preferred embodiment of a look and feel capture process.

FIG. 19 is a screen capture of a typical e-commerce supported page served in a preferred embodiment.

FIG 20 is a screen capture of a System Manager page in a preferred embodiment.

FIG. 21 is a flow chart of the pages and procedures in the host view reports process.

FIG. 22 is a flow chart of the pages and procedures in the shopping process.

FIG. 23 is a flow chart of the pages and procedures in the merchant account maintenance process.

FIG. 24 is a flow chart of the pages and procedures in the merchant catalog maintenance process.

FIG. 25 is a flow chart of the pages and procedures in the merchant view reports process.

FIG. 26 is a flow chart of the pages and procedures in the merchant view hosts process.

DETAILED DESCRIPTION OF THE INVENTION

A preferred embodiment of the invention is now described in detail. Referring to the drawings, like numbers indicate like parts throughout the views. As used in the description herein and throughout the claims that follow, the meaning of "a," "an," and "the" includes plural reference unless the context clearly dictates otherwise. Also, as used in the description herein and throughout the claims that follow, the meaning of "in" includes "in" and "on" unless the context clearly dictates otherwise.

A typical embodiment of the present invention will include a data store including a look and feel description associated with a host website, a communications link to a visitor computer, and a processor. The processor performs the tasks of capturing a look and feel description associated with a host website, storing the captured look and feel description in the data store, providing the host website with a link that link correlates the host website with a commerce object for inclusion within a page on the host website and which, when activated, causes the processor to serve an e-commerce supported page via the communication link with a look and feel corresponding to the captured look and feel description of the host website associated with the provided link and with content based on the commerce object associated with the provided link. The Internet serves as the communication link to visitor computers.

In a preferred embodiment as exhibited by FIG. 1, the duties of the processor are split among several computer systems **120a - 120c, 125a - 125d, 130a - 130b**. The data store may be implemented through a database system **130a - 130b, 135a - 135d**. The Internet **110** serves as the communication link to visitor computers **105a - 105f**. In this preferred embodiment, the system utilizes multiple inexpensive computer systems at every level of the architecture. Routing between levels will automatically distribute the load amongst the functioning computers. Increasing throughput becomes a matter of adding more computers, not scaling up the existing ones. This arrangement also provides fault tolerance since the failure of one server will not incapacitate the system as long as another server providing the same service is alive. This approach also permits the distribution of servers geographically. A router **115** may also provide further load balancing.

The tasks performed by the processor may utilize a variety of underlying software technology. In a preferred embodiment, the software architecture can be divided into 3 tiers: web server, application-server and database-server. Each tier is comprised of a number of software layers.

Web Server Tier

The Web Server tier accesses application functionality by calling a single "Request" Application Programming Interface (API). The API will take a Document Object Model (DOM) (as specified by W3C in http://www.w3.org/TR/REC-DOM-Level-1, which is expressly incorporated herein by reference in its entirety) object as a parameter and return a DOM object as the response. The request will be relayed to the application server tier where a dispatching method will unpack the request object, inspect it, invoke the desired method, and send back the response object. This approach means that new functionality becomes available as soon as the application server is upgraded. It is not necessary to develop a set of "stubs" that mirror the new API call. This is a major advantage because new functionality in the application tier can be exploited immediately simply by modifying the Active Server Page (ASP) scripts. No web server resident Dynamic Link Libraries (DLLs) need to be upgraded so the server does not need to be shut down. The web server tier will typically run on server computers **120a** - **120c** having a multitasking operating system such as Windows NT from Microsoft or other suitable operating system software. The Web Server tier contains the following layers as illustrated in FIG. 2:

- Web Server Software **210**. In a preferred embodiment, IIS by Microsoft is the server software. It supports serving side scripting using the VBScript scripting language.
- ASP Scripts **220**. All HTML content is rendered by ASP server scripts. The ASP scripting environment can interact with software modules written to Microsoft's COM specification.
- COM Adapters **230**. A set of COM wrappers provides the bridge between the ASP scripts and other elements of the system. The wrappers provide the necessary data conversions but do not contain any substantial functionality. The wrappers are not application specific.
- API Client Layer **240**. The API Client Layer consists of the very thin "request" API described above. This layer cooperates with the Object Cache layer. For example, before retrieving a catalog from the application layer, this layer may check to see if the requested catalog is already in the object cache.
- Object Cache **250**. The object cache contains the responses to previously submitted requests. All items in the cache are marked with an expiration time that is set at the time they are originally retrieved. The purpose of this layer is to reduce the load on the application tier.
- Remote Procedure Call Client **260**. The Remote Procedure Call Client provides connectivity to the application tier. It also provides request routing. In the event of application server failure, this client will automatically reconnect to a working server. This piece of software is not application dependent. In a preferred embodiment, the DBMS Component Server Client is the Objectstore Component Server Client (OCSC).

In a preferred embodiment, the Web server layer supports the following four Web interface modules. In a preferred embodiment, these modules are encoded with ASP to generate appropriate HTML and Javascript. The four modules are as follows:

1. Merchant Manager

The Merchant Manager is the "Control Center" for Merchants. This module allows the merchant to maintain their products, catalogs, contact information, track orders, process returns, run reports, etc.

A merchant representative must login before performing any system activities. Any valid merchant user will be able to perform all possible actions on the merchant to which it is related. Only registered merchants will have a valid account. An account for a merchant is established when the merchant registers with the system. A merchant representative may initiate registration via a web interface. The signup process must collect basic merchant information, including the information necessary to pay the merchant, and a password, which will be used to create a user account for the merchant. Once the merchant is approved (this may be automatic), the merchant will be sent an email containing a unique user id which can be used to login to the system.

When a representative logs in, she is taken directly to the Merchant Manager as seen in FIG. 9 and assigned a Merchant Session ID (Merchant SID). All pages within the merchant system must retrieve the MerchantSID from the HTTP request and validate it. If the session does not validate, the representative is taken back to the Login screen.

This module contains the following submodules:

- Account Information

  A merchant representative will be able to maintain the basic merchant profile, which includes the information needed to pay the merchant, the merchant's password, and the merchant's shipping policy information. FIG. 23 depicts the pages and procedures in a typical merchant account maintenance process. The representative selects to maintain account information **2305** from the Merchant Manager page **2300** leading to the display of the a basic information modification page **2310**. Each modifiable information type could be altered through a designated page available through the basic information page **2310**. Each such page could provide functionality to save any changes made to the particular page.

This sub-module allows a merchant to maintain the following types of information:

  - Basic information **2310** – name, description, address, logo
  - Contacts **2320** – for admin, finance, returns, support, order notification
  - Product Defaults **2330** – price labels, unit of weight, display options
  - Payment Info **2340** – check or ACH, payee info, bank info
  - Shipping Option **2350** – by price, items, weight, other or NA
  - Shipping Table **2360** – maintain shipping methods and prices
  - Tax Schedule **2370** – set tax rate for states in which taxes are collected. This may be automated in the future.

- Products and Catalogs

Here the merchant can both maintain products and arrange them into catalogs. Example product attributes include:

  - name
  - description
  - attributes - such as size, color, etc.
  - price(s) – normal, sale, competitor's and the price can be set or changed by an attribute
  - small image – used in most places
  - large image – used for zoom-in in shopping

The merchant can also maintain their catalogs and categories. A catalog is the top level category. A merchant can have one or more catalogs. Each catalog will be presented to Hosts as a separate entity. However, it is still tied back to the merchant. The merchant logo can be assigned to the catalog or a different image selected.

A catalog is considered a commerce object. Further, a catalog is populated with product or product category commerce objects. An indicator for dynamic selection of a product or product category may also be considered a commerce objects; however, such objects would not appear in a catalog.

Categories are then placed in the catalog(s). Categories can also be placed into other categories. A catalog or category can contain an infinite number of categories but really should be kept to less than 10 at any given level for presentation purposes. The bottom level categories contain products. The product node is actually a pointer to the product in the inventory table. This allows for a product to be placed into multiple categories.

A catalog, category or a product can be set to be inactive. If it is set as inactive, it will not be available to the hosts to browse or sell. It will also not be available to customers in the shopping area. If a catalog or category is set as inactive, then every item beneath it (categories or products) is also inactive.

A product also has a flag to indicate it is out of stock. When a product is no longer going to be sold by the merchant, it should be set to inactive. If the product is simply out of stock, thus temporarily unavailable, the out of stock flag should be used.

If a host has an existing link that points to an inactive or out of stock product or an inactive catalog or category, the customer will be taken to the first level above that is active. For example, if a customer clicks on a Link that points to coffee pot A, and coffee pot A has been set to inactive, the shopping page will display the entire coffee pot category (all the active coffee pots). If the coffee pot category was set to inactive, then the shopping page would go to the next level up (such as Kitchen Appliances). In this case the shopper will be given a message indicating the selected product or category is not available. If a host has a link associated with a dynamic selection indicator commerce object, the triggering of such a link will cause the dynamic selection of a product or product category.

FIG. 24 depicts pages and procedures used in a merchant catalog and product maintenance process. When a merchant representative logs into the system, she is presented with the merchant manager page **2300**. From this page, she may choose to proceed to the edit products and catalogs page **2400**. On this page, she may elect to search for a product through entering criteria **2405**. She may elect to preview a particular product **2410** and, from the preview, view additional information associated with the particular product **2415**.

From the edit products and catalogs page **2400**, she may also choose to edit a particular product **2420** or edit by catalog or category **2442**. In editing a particular product **2420**, she may elect to save the information associated with the product **2422**, select a current attribute to edit **2424** leading to the attribute edit page **2430** or create a new attribute associated with the product **2426**. An attribute includes a collection of options such as sizes or colors. If she selects to add a new attribute **2426**, a new attribute creation page is presented **2428**. Upon creation of the new attribute, the new attribute is saved, and the representative proceeds to the attribute edit page **2430**. From this page, she may choose to save or cancel the current attribute edit **2435**.

If the representative chooses to edit by catalog or category **2442**, she is presented a page allowing selection of catalogs or categories **2440** through navigating the catalog/category hierarchies **2444**. Once a particular catalog or category is identified, she may edit it via a catalog/category edit page **2450**. After editing, the alterations are saved **2455** returning her to the catalog or category selection page **2440**.

- Reports

A merchant representative may request on-demand reports. Such reports include an account statement that details all payments to the merchant, and statistics about catalog visits and sales. Statistics can be correlated to hosts, links, products and time periods.

As illustrated in FIG. 25, a merchant representative begins at the Merchant Manager page **2300**. She selects the view reports option **2505** to view the report menu page **2510**. From the reports menu page **2510**, she may enter criteria **2514, 2518** leading respectively to a revenue summary page **2520** or a monthly statement page **2530**. From the monthly statement page **2530**, she may change criteria **2535** to view a revised monthly statement **2530** or return to the report menu **2510**. From the revenue summary page **2520**, she may select a specific item **2525** for receiving a detailed revenue page **2550**, alter the criteria **2527** to receive a revised revenue summary **2520**, or return to the reports menu page **2510**. From the detailed revenue page **2550**, she may return to the revenue summary page **2520**.

The following reports are available for the merchants to track their results:

- Revenue Summary by Month

  This report provides sales and traffic information summarized by month. Data includes number of sessions, number of orders, gross and net sales, etc. Summarizes at the month level and allows 'Drill Down' to daily information.

- Revenue Summary by Host

  This report provides sales and traffic information summarized by host. Data includes number of sessions, number of orders, gross and net sales, etc.

- Revenue Summary by Product

  This report provides sales and traffic information summarized by Product. Data includes number of sessions, quantity in shopping cart and gross order amount.

All reports can be run as quick reports (this month, last month, this year, last year, all sales) or by inputting a specific date range.

- Order Tracking

A merchant representative can access a web interface that allows her to report the status of orders. This includes: reporting when the order was shipped, along with tracking information, and the status of all returned items.

The order tracking sub-module allows the merchant to manage all areas of an order. An order can have the following status:

- new – the order has been received and credit card information validated
- pending – the merchant has acknowledged the order, it is waiting to be shipped

- shipped – the merchant has shipped the order

An order can be shipped in multiple shipments. The merchant is credited for sales on shipped items.

The customer may also return part of an order or the entire order. The customer will obtain an RMA number (see the Shopping sub-module). All the merchant needs to do is acknowledge they have received the product back from the customer.

- Review Hosts

The Merchant Manager also allows the merchant to review which hosts have built links to that merchant's products. The merchant can also view the host web page containing such links.

A merchant representative will be able to review the list of hosts with which the merchant has a relationship. The merchant will have access to some basic information about the host, including at least one of the host's links, so that the host's look and feel can be evaluated.

In a preferred embodiment, a representative may review hosts through pages and procedures as depicted in FIG. 26. She begins at the Merchant Manager page **2300**. She selects the review hosts option to view the merchant-host relationship page **2600**. From this page, she may elect to view one of her products in the host's look and feel **2610** or view a list of links with the selected host that are directed to her commerce objects **2620**.

Automated interfaces can be introduced for merchants wishing to integrate their business systems with the functionality supported by the present inventions. Merchants can update their online catalogs, retrieve information on orders placed, and send order status updates back via automated interfaces. This integration is accomplished through the establishment and use of a standardized communication protocol.

In a preferred embodiment, merchants integrate by exchanging specially formatted XML documents over secure HTTP connections (i.e. HTTP over SSL). If the request is a query, the HTTP response will contain an XML document with the query results. Likewise, if the request is a command, the response will be an XML document containing the success or failure of the command.

Automated requests and responses are XML documents as described by the W3C's XML 1.0 specification, which may be found at http://www.w3.org/TR/REC-xml and which is expressly incorporated herein by reference in its entirety. The XML specification only describes the syntax of an XML document, it does not place any restrictions on the content of the document. The content of requests and responses is described using a formal notation known as DCD (for Document Content Description). DCD's are described in a note that was submitted to the W3C by Microsoft and IBM. The DCD note can be viewed online at: http://www.w3.org/TR/NOTE-dcd and which is expressly incorporated herein by reference in its entirety. A specific DCD describes the format of a request or response in the same way that the SMTP specification describes the format of an email. Typical DCDs for Automated Interfaces may be accessed at the following URLS: http://automation.nexchange.net/dcd/ManageInventory.01.02.dcd.xml and http://automation.nexchange.net/dcd/ManageCatalog.01.02.dcd.xml, both documents are expressly incorporated herein by reference in their entirety.

All interfaces have the same basic structure. The table below illustrates the basic structure of Automated Interface requests and responses.

		<ManageOrders specification='http://www.nexchange.net/automated/xml/ManageOrders.01.01.dcd'>
HEADER		<RequestHeader>
		<Authentication username='xxx' password='xxx' scope='xxx' /> <Instructions OnFail='HALT'/>

	Response		<Receipt Processor='xxx' Date='xxx' Number='xxx'/> <ResponseSummary Status='SUCCESS'> Error Message Here </ResponseSummary>
			</RequestHeader>
BODY			<RequestBody>
	Query		<Command status='SUCCESS'>
			<QueryNewOrders />
		query	<QueryNewOrdersResponse> *Query Results Here* </QueryNewOrdersResponse>
			</Command>
	Operation		<Command status='SUCCESS'> <AcknowledgeOrder order_id='xxx' item_price_total='xxx'/> </Command>
			</RequestBody>
			</ManageOrders>

All responses contain the original request with status information and query results appended. The table above shows a response to a Manage Orders request. The response is divided into a header and a body section ("RequestHeader" & "RequestBody" respectively).

The RequestHeader element contains authentication information and global instructions. When the request is returned, the request header will also contain a receipt and a response summary. The authentication element carries the information needed to identify and authenticate the requesting party. The global instruction element contains instruction on how the request is to processed if an error is received. The remainder of the commands in the request can be processed or the request can be discontinued. In a response, the receipt element is added to the request header. Information in the receipt can be used to recover the response. The response summary element contains a status code, which will be set to "SUCCESS" if all commands were completed successfully.

The RequestBody element contains one or more command elements. The exact content of a command element depends on the interface being used. When a command is submitted, its status attribute will always be "REQUESTED". When the command has been processed, the response will echo back the command with the status changed to "SUCCESS", "FAILURE" or "SKIP". In the case of a query command, the response will contain a query response in addition to the status.

If the request conforms to the DCD, the response will contain the original request with the status and query results embedded. The command status codes must be inspected to determine what has been done.

If the request did not conform to the specification, two possible error types can occur:

- XML Parsing Error
- DCD Validating Error

Errors are returned as NexError node. If a NexError is returned, the XML document has not been processed. The returned XML should always be examined for a NexError.

If the request document is not valid XML, an XML Parsing Error will be returned. A NexError node will be added around the entire document. It will look similar to the following:

```
<NexError Msg=" XML Parsing Error" … >
  <XMLParseError errorcode=" " reason=" " line=" "
linepos=" ">
          offending section of document
  </XMLParseError>
</NexError>
```

The errorcode, reason, line and linepos will contain information explaining what the error is and the location in the file.

If the request document is valid XML but does not match the published Interface DCD, a DCD Validating Error will be returned. A NexError node will be added around the entire document. A DCDError node will be embedded in the document at the location of the error. It will look similar to the following:

```
<NexError Msg=" XML Validating Error" … >
  <XMLValidateError msg="Find the DCDError Node in the
document for detailed error information."/>
          … Valid Portion of document …
          <DCDError message=" ">
               offending section of document
          </DCDError>
          … Valid Portion of document …
  </ XMLValidateError >
</NexError>
```

The following is an example request attempt to add one new product and to update the price of an existing product.

```
<ManageInventory
specification='http://automation.nexchange.net/dcd/Manage
Inventory.01.02.dcd.xml'>
    <RequestHeader>
         <Authentication username='xxxxx'
     password='xxxx' scope='MNNN'/>
         <Instructions onfail='CONTINUE'/>
    </RequestHeader>
    <RequestBody>
         <Command status='REQUESTED'>
              <AddProductDef updateifexists='1'>
                   <ProductDef
                        id='saw'
                        skumask='saw'
                        name='saw'
```

```
                    description='A Circular Saw From Festo'
                     shortdescription='Festo Circular Saw'
                                 info='no comment'

              image='http://216.0.58.242/rmtools/fw132saw.jpg'

          largeimage='http://216.0.58.242/rmtools/fw132saw.jpg
                              '
                                 usualprice='145.00'
                                 saleprice='135.00'
                                 compareprice='215.00'
                                 salelabel='HOT PRICE'
                                 instock='1'
                                 commplan='default'
                            >
                                 <AttributeDefList/>
                                 <KeywordList/>
                            </ProductDef>
                        </AddProductDef>
                    </Command>
                    <Command status='REQUESTED'>
                        <UpdateProductDef
                            id='saw'
                    image='http://216.0.58.242/rmtools/fw132saw.jpg
                            '
                        />
                    </Command>
               </RequestBody>
           </ManageInventory>
```

2. Host Manager

The Host Manager is the "Control Center" for Hosts. Here, a Host can track sales, design their store front, generate links to merchant products, get traffic/order reports, update account information, etc

For a host to gain access to the host manager system, the host must be registered. FIG. 4 depicts a flow chart for a typical registration process. A host representative may initiate contact **410** with the system via a web interface. The signup process must collect basic host information **420**, including the information necessary to pay the host a commission for purchases through his site, which is saved by the system **430**. Optionally, a click agreement containing terms of use **440** may be presented requiring agreement **444** to proceed. If at some point the representative elects to cancel **425, 458** or reject the use agreement **448**, he or she is returned to her point of entry **410**. The system may then request the representative to select a user identification and a password **450**. If the selected user identification is already in use **454**, the representative may be prompted to select a user identification **450**. The information associated with the host is stored **460**, and the representative may proceed to the host manager system page **470**.

When a host logs in, they are taken directly to the Host Manager, as seen in FIG. 10, and assigned a Host Session ID (Host SID). All pages within the host system must request the Host Sid and call the ValidateHostSessionID function. If the session does not validate, the user is taken back to the Login screen.

This module contains the following submodules:

- Account Information

  This sub-module allows a host to maintain the following types of information:

  - Administrative Contact – name, address, phone
  - Payee Contact – name, address, phone, SSN
  - Site Information – site name, URL, description
  - Site Demographics – # of visitors, type of visitors, comments

  A host representative will be able to maintain basic host information, including the information needed to pay the host, and the host's password. FIG. 5 depicts a flow chart of the pages and actions in a typical maintenance process.

The representative has previously logged into the system to reach the host manager system page **470**. From the host manager system, the representative selects to update her account **510** leading to a host information maintenance page **520**. The representative can modify host information and, then choose to save or cancel the modification **530**. In either case, the representative is returned to the host manger system page **470**.

- Store Front Design

The store front design is where the host's look and feel is captured. The look and feel is captured by selecting an example page the host, retrieving the sample page from the host, identifying the look and feel elements from the sample page and saving the identified look and feel elements. "Look and feel elements" include logos, colors, page layout, navigation systems, frames, 'mouse-over' effects, or other elements that are consistent through some or all of a Host's website. A typical system for accomplishing this task would include a data store for storing look and feel descriptions, a communication channel to the host whose look and feel is to be captured and a processor for executing the capture.

When a customer clicks on a host buying opportunity (link), the next page loaded will be a shopping page. However, this shopping page should retain the host's look and feel. This is accomplished by capturing the HTML text and images that comprise their look and feel and embed within it the shopping HTML content. Any relative URLs in the host look and feel may be changed to absolute URLs back to the host system.

In a preferred embodiment, there are five steps to a process capturing the host's look and feel, converting relative URLs to absolute URLs and validation of links.

A host representative will be able to capture host look and feel information and to update host look and feel information through recapture. FIG. 6 depicts a flow chart of the pages and actions in a typical look and feel capture process. The representative has previously logged into the system to reach the host manager system page **470**. From this page, the representative selects to initiate host look and feel capture through a design storefront wizard **605**. An introduction page is presented explaining the process **610** from which the representative proceeds in the following manner:

- Base URL **615** – the URL used to convert relative links to absolute links, as seen in FIG. 11
- header **620** – the HTML to be rendered BEFORE the shopping html. Selection may be made by code, as seen in FIG. 12, by graphical point and click selection or other suitable selection method.
- footer **625** – the HTML to be rendered AFTER the shopping html. Selection may be made by code, as seen in FIG. 13, by graphical point and click selection or other suitable selection method.
- preview **630** – shows what the shopping page will look like (nothing has been captured yet). From this preview page **630**, as seen in FIG. 14, the representative may elect to return to earlier stage to perform a change **635**, **640** or **645** of base URL, header or footer respectively. The user may also have access to a preview **650** with example content included to demonstrate a typical page with both content and look and feel **680**, as seen in FIG. 15. From the generic preview page **630**, the representative may choose to continue **655** with finalizing the look and feel **660**.
- final check **660** - finalize the captured look and feel, as seen in FIG. 16, this page may allow validation of links and images and offer to save the captured look and feel. Once validation, if any has been performed, and the look and feel has been saved, the process completes **675**.
    - validation **665** – validate the link and image URLs in the header and footer HTML. FIG. 17 displays the screen capture of page that could be used to display validation progress.

- save **670** – Actually captures, processes and saves the storefront information. A completion page such as seen in FIG. 18 may be displayed.

For security reasons, javascript is accepted but applets are stripped out in the preferred embodiment.

- Link Generator

The Link Generator allows host to create and maintain the shopping opportunities that they can then place on their site. Each Link is assigned a unique Link ID. The Link ID identifies who the host is, who the merchant is, and what commerce object (catalog, category, product or dynamic selection) is linked to.

The first time a host builds a Link to a merchant's product, category or catalog, an approval of that host for that merchant may be made. Until the host is approved, they cannot see the Link ID that has been assigned to the newly created Link.

The code the host embeds on their web site is as follows:

```
<!-- BEGIN NEXCHANGE LINK -->
<!-- For more information go to http://www.nexchange.com -->
<!-- The following 2 lines MUST NOT BE CHANGED to ensure proper crediting -->
<IMG BORDER='0' SRC='http://www.nexchange.net/img.asp?LinkID=xxxx'>
<a href='http://www.nexchange.net/route.asp?LinkID=xxxx'>
<!-- Substitute your own text or image below -->
** YOUR TEXT OR IMAGE HERE **</a>
<!-- END NEXCHANGE LINK -->
```

There are several points to note here:

- The image src (img.asp) is actually an ASP program that returns a single transparent pixel. This is used to track impressions (how many times the link was displayed on the host site).
- The route.asp page is a page that routes the customer to the shopping page. As additional servers are added, this will become very important for load balancing.

- The 'xxxx' for the LinkID='xxxx' is the Link ID assigned to the Link in the Link Generator.

A host representative will be able to generate links to commerce objects. FIG. 7 depicts a flow chart of the pages and actions in a typical link generation process. The representative has previously logged into the system to reach the host manager system page **470**. From this page, the representative selects to generate links **705,** which transfers her to a page containing a list of all previously generated links for that host **710**.

From this page, the representative may choose among several options: view an existing link **722**, remove an existing link **735**, edit an existing link **728** or add a new link to either a merchant with whom a link already exists **720** or a merchant without an existing link **715**. In viewing an existing link **722**, the page containing the link may optionally displayed in a separate window **725**; as a consequence, the representative could continue to interact with the list of available links page **710** in the primary window. The representative could select a link for removal **735** and, upon removal, return to the list of links page **710**. The representative may choose to edit an existing link **728** leading to a link modification page **730**. After modifying the link, the new link information would be saved **740**, and the representative would return to the list of available links **710**.

In adding a new link, a distinction may be made whether a link is made to a merchant to whom the host has previously linked **720** or to a merchant to whom a previous link does not exist **715**. In the latter case, an extra optional step may be involved to approve the host with respect to the new merchant as part of the catalog selection process **745**. In other embodiments, such a distinction need not be made. In linking to a merchant to whom a previous link does exist **720**, a catalog may implicitly be selected. In either situation, the creation process continues by allowing the representative to choose a commerce object to associate with the link **750**. Such a commerce object will be a product, a product category, a catalog or an indication that a product, product category or catalog should be chosen dynamically. From this page, the representative may go back to the catalog selection page **745** or proceed with setting link attributes **755** such as the destination upon return from the link (e.g. the point of departure into the e-commerce page or a destination designated by the representative). From this page **755**, the representative can return to the commerce object selection page **750** or continue forward with naming and saving the new link **760**. Upon completion of naming and saving page **760**, the link is saved to the system database **765**, and the representative is provided with a link to include within a page on the host website **770**. After cancellation at any time, or upon completion, the representative is returned to the list of available links page **710**.

Where a host representative chooses a dynamic indicator as the commerce object, the specific content will be chosen contextually based upon the content of the page that includes the link. In a preferred embodiment, keywords in the page are cross-reference with available catalogs, product categories and products to choose the appropriate content for the destination page associated with the link. FIG. 8 is a flow chart of the selection process in such a preferred embodiment.

A visitor is viewing the host page including a link associated with a dynamic selection commerce object **810**. The visitor activates the link. Receiving the activation, a determination is made as to whether content has previously been dynamically selected for the activated link **820**. If yes, a second determination is made as to whether the previously dynamically selected content is current **830**. If this is answered in the affirmative, a page is constructed with the previously dynamically selected content along with the look and feel associated with the host from which the link originated **840**.

If either determination is negative, the host page including the link is retrieved **850**. The page content is analyzed, and based upon the analysis, content for the link destination is selected **860**. The selected content is cached for potential future use **870**. Finally, a page is constructed with the dynamically selected content along with the look and feel associated with the host from which the link originated **840**. The analysis in **860** may take a variety of forms including, in a preferred embodiment, identification of marked keywords. In another embodiment, keywords may be dynamically determined using word count statistics.

In a more elaborate system, the retrieval process might encompass not only the page containing the link but also other pages linked to the page of link origin. Keywords or word count analysis could be used to determine context based upon the aggregation of pages retrieved. In a further embodiment, differing weights could be given based upon the source of the keyword identified; keywords from the page of origin would have a greater weight than keywords derived from pages one link away.

- Reports

A valid host representative will have on-demand access to a report showing visits to their links and sales. The report will be scoped by date range. Visits can be summarized by merchant and by link. Sales can be summarized by merchant and by link.

As illustrated in FIG. 21, a host representative begins at the Host Manager page **470**. She selects the view reports option **2105** to view the report menu page **2110**. From the reports menu page **2110**, she may enter criteria **2114, 2118** leading respectively to a revenue summary page **2120** or a monthly statement page **2130**. From the monthly statement page **2130**, she may change criteria **2135** to view a revised monthly statement **2130** or return to the report menu **2110**. From the revenue summary page **2120**, she may select a specific item **2125** for receiving a detailed revenue page **2150**, alter the criteria **2127** to receive a revised revenue summary **2120**, or return to the reports menu page **2110**. From the detailed revenue page **2150**, she may return to the revenue summary page **2120**.

The following reports are available for the hosts to track their results:

- Revenue Summary by Month

  This report provides sales and traffic information summarized by month. Data includes number of sessions, number of orders, gross and net sales, etc. Allows 'Drill Down' to daily totals.

- Revenue Summary by Merchant

This report provides sales and traffic information summarized by merchant. Data includes number of sessions, number of orders, gross and net sales, etc.

- Revenue Summary by Link

This report provides sales and traffic information summarized by Link. Data includes number of sessions, number of orders, gross and net sales, etc.

3. Shopping

The shopping module is the part of the application that allows customers to find, search, select and buy a product. There is also a return product section accessible to the customer after the order has been placed.

Shopping is the part of the application that the general public will encounter. FIG. 19 displays a screen capture of a typical shopping page in a preferred embodiment. FIG. 22 depicts pages and procedures in a shopping process as implemented in a preferred embodiment.

The customer was on a host site and saw a link to buy something created via the Link generator **2200**. When he or she clicks on the link, he or she is taken to the shopping page parameterized with the Link ID **2210**. If an error occurs during this transition, the visitor is routed to a link error page **2205**.

A variety of generic information may be available from any shopping page within the system. Such information could include information about the e-commerce outsource provider **2222**, information about the merchant offering the current commerce object **2224**, information about an involved party's privacy policy **2226**, or information about an involved party's security policy **2228**.

Customers will be able to browse a merchant's catalogue and place items in their shopping cart **2212**. When the customer is ready to checkout **2260**, the system will acquire payment information **2262** and shipping information **2264** from the user, confirm this information **2266**, and execute the transaction. The receipt including a URL that can be used to track the order status (e.g. - it could be bookmarked) will be displayed to the customer **2268**. By visiting the URL provided upon checkout from the shopping experience, the customer can check the status of their order, initiate returns, and check on their return status.

This module contains the following submodules:

- Session

Each time a new shopping session is started, a customer session is created for the shopper. This Customer Session is assigned a Session ID (SID). All pages within the shopping system must request the SID and call the ValidateSessionID function. At any time if a session error occurs, a session error page **2215** may be presented.

Unlike the merchant and host sessions, the shopping session is persistent. The session information retained is what the customer has placed in the cart and if they have checked out. The SID is also written back to the customers browser as a cookie. If a customer returns to the Shopping page an attempt will be made to use the last session they had. It will only be reused if the ALL of the following are true:

  - The host the customer is coming from now is the same host as in the previous session
  - The merchant for the current link is the same as the merchant in the previous session
  - The previous session was not "Checked Out"
  - The session is not older than a certain age.

- Product Search and Selection

The main shopping page begins at the entry point that the host used to build the Link. This can be to a specific product, a category of products, a category of sub-categories, a complete catalog or a dynamically selected destination. However, no matter what entry point was chosen, the customer can navigate to every item contained in the merchant catalog used for the Link serving as the customer's entry point to the shopping. The customer may browse the catalog **2230** or search for a specific product or product category **2240**.

- Shopping Cart

The Shopping Cart is the main information saved in a customer session. As a customer places products in the shopping cart, we retain information such as:

- name of the product
- price of the product
- any attributes (size, color, etc)
- host commission rate
- merchant revenue percent

This information must be stored redundantly in the shopping cart because the price, name, etc may change later and the values at the time of purchase need to be retained. The shopping cart interface also allows the shopper to remove a product and/or change the quantity through a view shopping cart page **2250**.

- Check Out

The check out process is separated into two distinct pieces.

- Order Capture
- Credit Validation

Order capture is the process of obtaining the customers billing and shipping information and creating a pending order. The credit card information is checked to make sure it is a valid number for the card type but it is not actually processed with a credit card authorization service (i.e. CyberCash). The order is accepted, assigned an order id and the customer is given an on screen and email confirmation. The pending order has a status of new.

The credit validation process happens sometime after the order capture has occurred. The customer's billing information is sent to the authorization service. The pending order now has the status of authorized.

If the card is validated, the order is accepted and placed into the TheOrder table. The pending order has a status of accepted. If the billing information fails validation, the pending order status is set to rejected and an email is sent to the customer informing that the credit card information could not be validated.

4. System Manager

The System Manager is the "Control Center" for administrators. The administrator can monitor the day-to-day activities and status of the system. When an administrator logs in, he or she is taken directly to the System Manager and assigned a Nexchange Session ID (NexchangeSID). All pages within the System Manager system must request the NexchangeSID and call the ValidateNexchangeSessionID function. If the session does not validate, the user is taken back to the Login screen. Access to administration functions will require authentication using the name and password for a valid administration account.

The home/main page of the System Manager provides a quick summary of the current system status; a screen capture of a typical main page in a preferred embodiment is seen in FIG. 20. This summary includes pending orders, orders, host statistics, merchant statistics and an unattended orders list.

An administrator will be able to configure a hosts or merchant's payment policy. This includes specifications for any holdbacks, and a method for calculating commission/payment. At the request of a merchant, an administrator will be able to configure the system to reject all shopping traffic from a particular host-merchant arrangement. The host and merchant contacts will be notified via email. An administrator will also be able to activate or deactivate a host. The system will reject shopping traffic from inactive hosts. When a host's status is changed, the host contact will be notified via email. An administrator will configure the system to enforce system-wide policies. System-wide policies include the number of days allowed for returns.

The system will periodically run an audit process and report on situations of concern. For example, an audit could search for orders that have not been serviced for a certain period of time. The system may also report on possible security situations such as an inordinate number of account lockout incidents.

This module contains the following submodules:

- Utilities

    The following utilities are available:

    - List Pending Orders

  - List Orders
  - List Rejected Orders
  - List Returns
- Host

  The following actions are available:

  - List Promos
  - List Hosts
  - Maintain Host Tiers
  - Host with Pending Merchants
- Merchant

  The following actions are available:

  - List Merchants
  - Copy a Category
  - Find Category Links
  - Add a New Merchant
  - Maintain Brands

Application Server Tier

The business functionality is provided via "application servers". An application server will consist of one or more of the business modules, wrapped with an appropriate middleware adapter. This arrangement allows delivery of services via many different mechanisms. For example, if it becomes desirable to serve some functions to a Java client, a Java Remote Method Invocation (RMI) version of an application server could be built. The new server could be developed rapidly because only an RMI "wrapper" would need to be developed, while the application logic would be reused. In a preferred embodiment, this layer consists of a set of core C++ software modules that encapsulate business functions.

The Application Server tier may run on one or more application server computers. The application servers are stateless. This means that, for two application servers serving the same functionality, "one is as good as another". In the event of failure, a client's requests may be handled by a different server than before the failure. Since it does not matter which server services a request, routing is greatly simplified.

The stateless server approach also provides excellent fault tolerance since all application servers can back each other up. Use of a combination of "sticky routing" and caching to significantly ameliorate any detrimental performance implications of the stateless approach, while preserving most of the benefit. Once a client begins using a particular service, the system will show a preference for routing future requests from that client to the same server. The servers maintain a cache recently used data and will only access the database if the desired item cannot be used in cache. Since the routing is sticky, the client's data will often be in cache, and in many cases, no database access will be required. Should the client be routed to a new server, the session data can be retrieved from the database as occurs in the "vanilla" stateless model. In a preferred embodiment, the functionality of this layer utilizes one or more low cost server systems **125a** - **125d** running a suitable operating system such as Microsoft Windows NT. This tier is also composed of several software layers as illustrated in FIG. 3:

- Remote Procedure Call Server **310**. This software provides connectivity to the Web Server layer and is not application dependent. In a preferred embodiment, this software layer is the Objectstore Component Server.
- Application Logic **320**. This software encapsulates the business functionality. The design of this software layer and the various application servers is more fully described below.
- Virtual Database **330**. The virtual database layer allows the application data to be distributed across multiple Database servers while insulating the application layer from the physical storage configuration. The virtual database contains a table that maps object types to physical databases. All database objects or records of a given type are distributed across the permissible databases. Databases can be added while the system is live to permit expansion onto new servers. Overburdened databases can be closed to prevent assignment of new data to them. Databases can be moved to different physical servers. All stored objects are referenced by a handle which is unaffected by the physical location of the referenced data. The virtual database layer also permits a collection of objects distributed across multiple servers to be indexed and searched.

- **DBMS Client 340**. This software provides access to data stored in the databases. In a preferred embodiment, the DBMS client is Object Design's Objectstore client. All Objectstore clients contain a cache of recently used database pages. An optimistic locking scheme is used to ensure cache consistency. The caching scheme is very effective in the present invention because it is optimized for many readers and few writers.

In a preferred embodiment, the application server layer includes the following eight application servers:

1. Cashier - Collects checkout information: billing info, shipping preferences, etc.

The Cashier server is analogous to a cashier in a "bricks and mortar" store. The cashier's responsibilities are listed below:

- Collecting Information Necessary To Complete a Sale. This information will include billing information, shipping address(s) and preferred shipping methods. In some cases, the information to be collected may depend on the contents of the order. The cashier will also access the appropriate merchant policy information to assist in determining what data should be collected.
- Providing an Itemized Account of the Total. Upon receiving the necessary data, the cashier will compute the applicable taxes, shipping charges, etc, and provide an itemized account of the order total.
- Execute the Sale. Upon request, the cashier will execute the sale. A copy of the relevant information will be sent to the credit processor. When the credit processor approves the orders, the cashier will break the customer's order into individual merchant orders and forward them to the Merchants' Order Tracking server. The cashier will also post a record to the Ledger at this time.

2. Catalog - Houses product hierarchies. Conducts product searches.

The catalog is an arrangement of product information. The catalog server supports a hierarchical browsing mode and various searching functions. Its responsibilities are listed below:

- Retrieve a catalog upon request. The catalog will include all content for a shopping experience. For products, the information will include the product description, price and options.

- Retrieve a list of products matching a query. This will initially support simple keyword searching, but may be expanded to more sophisticated searching techniques.

3. Credit Processor - Conducts card validation and fraud screening.

The credit processor takes a candidate order and performs card authorization and fraud screening. The card processor cooperates with the order tracker to keep the status of the order updated.

- Perform Credit Card Authorization. Contact the card processing vendor and authorize the card. Retrieve the Address Verification System (AVS) code for use in fraud screening.
- Perform Fraud Screening. The system performs a fraud screening analysis based on the following factors: dollar amount of the order, AVS code, whether the billing and shipping address match, and whether the email address given is a free e-mail account.

4. Notifier - Sends messages.

The Notifier keeps track of who wants to be notified of what and how they should be notified. The notifier receives notification of various system events and takes the appropriate course of action. The appropriate course of action will depend upon the event and the party to be notified. For example, a merchant that does a high volume of sales and is already integrated with the system may not wish to receive email notification of every order.

5. Ledger - Records and reports on all financial events.

The Ledger is a record of all financial events. The ledger contains interfaces for posting events and interfaces querying and inspecting the ledger. Responsibilities include:

- Post an Order Event. The order event happens when the shopper confirms an order.
- Post a Sale Event. The sale event occurs when a merchant marks the last item in an order shipped.
- Post an Return Merchandise Authorization (RMA) Open Event/Post an RMA Completed Event/Post an RMA Canceled Event

- Post a Journal Entry. This interface will be used to record non-standard events. The posted ledger entries must collectively have an equal number of debits and credits.

6. Order Tracker - Records and reports on order status.

This is the repository of order information. The order tracker includes a cashier's interface for creating a new order, a Merchant's interface for keeping the order status updated, and a Customer Service interface for checking on the status of the order and making relevant annotations.

- Query Order Status. This method is used by purchaser to check on the status of a pending order.
- Ship Order. This method is used by a merchant to document the parceling of an order into shipments.

7. Shopping Cart - Holds products that have been selected for purchase.

The shopping cart is simply a collection of Inventory Reservation documents that represent the items that have been selected by the shopper. The shopping cart includes methods for adding and removing Inventory Reservations and for inspecting the contents of the cart.

8. Warehouse - Inventory availability information. Product configuration interfaces.

The Warehouse represents a collection of physical items that are in stock. Responsibilities of the Warehouse are listed below:

- Provide Information on Stock Levels of a Particular Item/Order Items Having Low Inventory Levels. This is an advanced capability by which inventory may be dynamically reserved from a merchant, based on the current inventory levels.
- Provide Information on Product Configuration Options. The warehouse will provide a blank Inventory Reservation document that will specify all of the product's configuration options.
- Issue Reservations Against Inventory. A shopper will fill out an Inventory Reservation (which includes all configuration options) and submit it to the warehouse. If the item, as configured, is available, the reservation will be issued. This will serve to reserve the inventory for a fixed period of time.

Database Server Tier

Finally, the Database server tier is composed of a single software layer. This layer is responsible for low level manipulation of the data in the one or more databases. This tier may consist of multiple database servers. Using multiple servers is a major advantage for obvious reasons. The system's database chores can be distributed to many different servers. In a preferred embodiment, the database server is Object Design's Objectstore server. Objectstore supports a "warm failover" mode which allows a backup server to take over automatically if the primary should fail. An Microsoft SQL server is also used in the preferred embodiment to maintain financial records although properly configured another DBMS such as Objectstore or a commercially available accounting package could provide capability suitable for financial record keeping.

The foregoing discussion describes the primary actors interacting with a system according to the present invention. After identifying these actors, typical transaction flows through the system are presented.

There are three main parties in the outsourced e-commerce relationship, excluding the end consumer. These parties include Merchants, Hosts, and the e-commerce outsource provider. This folds into two parties where one party plays the dual role of Host and Merchant.

Merchants

Merchants are the producers, distributors, or resellers of the goods to be sold through the outsource provider. The primary responsibilities of a Merchant are to:

- Maintain an up-to-date catalog within the system including all products that are available for sale in storefronts served by the outsource provider
- Create approval standards for passively recruited Host applicants based upon website profiles and target audience characteristics
- Fulfill all orders received from the e-commerce outsource provider
- Provide assistance to outsource provider regarding promotional strategies. This can be accomplished by supplying marketing literature and materials, as well as any sales incentives. The Merchant *owns* the marketing literature and materials, and may access and modify these items as necessary.

- Provide service and support to customers generated via the outsource e-commerce provider
- Maintain internal records of orders filled through the outsource provider and process payments from the outsource provider for these orders
- Inform the e-commerce outsource provider of any backlogs, fulfillment delays, product changes, or other significant situations

Hosts

A Host is the operator of a website that engages in Internet commerce by incorporating one or more link to the e-commerce outsource provider into its web content. The responsibilities of a Host are to:

- Use the outsource provider Host Manager service bureau to select the Merchants and products that will be offered from the Host's website
- Promote transactions through the e-commerce outsource provider hosted by the website
- Regularly review the Merchant offerings for which they have been approved in order to take advantage of new products and to review sales and promotional strategies made available to them by the Merchant

E-commerce Outsource Provider

The role of outsource provider is to:

- Develop and maintain the outsource provider service bureau – the systems and software which provide the platform for e-commerce support services
- Identify and recruit target Host websites and monitor/manage these relationships
- Create customer-transparent Host processing "pages" on a secure server to receive order and payment information
- Create, maintain, and update the "look & feel capture" process through which consumers are able to shop in a Merchant-controlled storefront within the design and navigational context of the Host website, preserving the ownership of the visit experience by the Host
- Authorize credit card transactions (in most cases)
- Process credit card payments for orders received (in most cases)

- Pay periodic commissions to Hosts for orders shipped during a prior period
- Transmit orders to Merchants
- Pay Merchants for orders filled
- Manage the commission structure for Merchant-Host relationships to maximize sales and revenues
- Screen and approve Host applications
- Support and monitor the merchandise return/refund process and other customer service functions

This following describes the order entry and settlement process from the initial promotion on a Host website all the way through to fulfillment, payment processing, commission payment, and Merchant payment.

Order Placement, Fulfillment, and Settlement Overview

The overall transaction process is very straightforward. The following is a list of the steps involved in receiving and processing an order request.

a) A customer visits a Host website and, through contextually relevant content, becomes interested in a product offered.

b) The customer selects the item(s) that she wishes to purchase by clicking a product image, banner-style link, or text link, or other offer format taking her to a dynamically generated web pages which retain the look and feel of the referring Host and are served by the e-commerce outsource provider.

c) The customer browses through the products offered, indicating which items are to be purchased and in what quantities via forms on-screen. Selected items appear within the shopping cart at the top of the shopping interface. The user remains on the product screen without ever being involuntarily removed to a detailed shopping cart-only screen, representing a significant enhancement over most shopping cart technology in place today. When all desired products are selected, the customer initiates the checkout procedure, never leaving the Host website.

d) The secure checkout interface appears, still consistent in look and feel with the Host's referring website. The customer completes the order form, provides all billing and shipping information required, confirms the items selected for purchase, and remits credit card information for payment processing.

e) Assuming the payment method is authorized, the customer is returned to another section of the Host's website, possibly just returning to the page in which the offer was placed, as determined by the Host.

f) The e-commerce outsource provider passes the order to the Merchant in real time. The credit card may be charged at this point or upon confirmation of shipment.

g) The Merchant receives and logs the order.

h) The Merchant then assembles and ships the order to the customer, keeping the outsource provider apprised of the order status.

i) Periodically, the outsource provider will remit payment to the Merchant for that period's filled orders.

j) Periodically, the outsource provider will remit payment to Hosts for all commissions earned in the prior period.

Host Process Flow

The process flow for a prospect to become a Host and be fully able to endorse/promote/offer Merchant products is as follows:

a) Hosts are recruited from three sources: direct recruiting, in which the Host prospect is identified by and approached by an e-commerce outsource provider representative; passive recruiting, in which the Host has been referred to the outsource provider by other Hosts, relevant meta-sites (sites that contain lists of and links to other sites/services), or other sources; and Host Agent recruits, in which a specialized third party Agent identifies and approaches Host prospects. In many cases, the use of online signup forms and brochures may be a factor in recruitment.

b) Prospect completes the Host application form (except where preapproved), providing information about the type of website(s) operated by the Host, some traffic statistics about these websites and general visitor demographics, and complete contact information. The prospect also selects an outsource provider system user ID and password which will later be used to access the system, retrieve important Hosting information and programming, and modify the custom materials in the outsource provider transaction processing engine.

c) The application is received and the information therein is reviewed, and the application is either approved or rejected (unless this is a preapproved Host). If approved, the Host's ID and password are activated, and an automated message is sent to the new Host informing them of their approval. This message will also contain instructions for accessing the e-commerce outsource provider system, setting up their links to the outsource provider, and inserting outsource provider data into their website(s). Preapproved Hosts will be immediately able to access this system upon submission of their application.

d) Host accesses e-commerce outsource provider system to begin the step-by-step setup process. The Host first identifies a page from their own website which will provide the look and feel to be replicated. Following this, the Host configures product selections for each of its approved Merchants and downloads product images, text, and CGI/HTML code for their own website. Host then completes changes to website and activates new content. Hosts are free to promote their use of the outsource provider as they feel is suitable to the product at any time and with any frequency, subject to reasonable limitations.

e) Hosts will be able to access real-time reports about transaction volume including number of users, average purchase amount per user, number of purchases on specified days or within specified date ranges. Hosts can create customized reports to determine conversion rates, top selling products, commissions earned, paid, and due, and other pertinent information. This information can be leveraged by the e-commerce outsource provider and the Host to improve the efficacy of targeted marketing efforts on the Host's website.

Internal System Transaction Flow

The e-commerce outsource provider system acts as a clearinghouse for all orders. The system maintains a real-time interface with a credit card authorization and processing service and a robust database engine which is able to process transactions, record all transaction activities, generate reports used for commission payments and auditing of Merchant invoices, and track order status. The transaction flow for the outsource provider service bureau is directly related to the structure of the underlying database.

This flow can be described as follows:

a) Customer, visiting Host, activates link to commerce object within context of Host's website. This activation is typically accomplished by clicking on a hyperlink of some kind within a webpage of the Host's website.

b) The e-commerce outsource provider launches new storefront featuring specific products or product category for Merchant, as determined by Host, with the look and feel of the Host's site. The user is not made aware of the fact that this shopping experience is taking place on an outsourced server.

c) As customer browses through featured items in the Merchant's catalog, the outsource provider serves additional pages while maintaining the look and feel of the Host. The system maintains a dynamic record of customers activities including products reviewed, items selected for purchase (placed into shopping cart), and time spent shopping. The e-commerce outsource provider uses a highly reliable and accurate tracking technology throughout the shopping experience.

d) Upon checkout, the system processes customer billing, shipping, and order information via secure (encrypted) data transmission (unless the consumer opts for non-encrypted transmission). This process includes an order confirmation process and a process by which a non-approved credit card transaction may be corrected and resubmitted.

e) Upon approval, the outsource provider performs several simultaneous functions:

- Thank you screen is displayed to customer
- Customer is prompted to "continue" browsing Host's website.
- E-mail confirmation is sent to customer detailing order information, fulfillment process, customer service terms and procedures, and other relevant information.
- Order is transmitted to the Merchant electronically, via e-mail or direct link to order entry system.
- Order is logged into transaction database and logged by system in conjunction with Host referral information.
- Host is notified that a sale has been made and commission dollars have been earned.

The second part of the e-commerce outsource provider service bureau transaction process pertains to reconciliation and settlement with the Merchants.

a) Orders are transmitted to each Merchant as received and are logged into the system for future reference and reporting.

b) Periodically, the outsource provider will pay each Merchant for orders processed during the prior period. Payment will be driven by shipped orders as recorded within the system. Merchants can view their accumulated sales within the system at any time during the period, and historical information will be available as well.

The final part of the e-commerce outsource provider Service Bureau transaction process pertains to the payment of commissions to Hosts.

c) Periodically, the e-commerce outsource provider will calculate the accumulated commissions due to each Host from the prior period's results. Hosts will be able to review their earnings on a real-time basis at any point during a period.

d) The outsource provider will then pay each Host the appropriate commission amount via electronic payment or check along with a copy of the transactions and total report for the period being settled.

Merchant Transaction Flow

Each Merchant will be required to fulfill every order received through the e-commerce outsource provider within a designated time frame. Merchants must also be able to track certain information regularly and accurately. Merchants will be monitored to ensure timely fulfillment in order to provide the best quality customer service.

The steps of the Merchants transaction flow after they have been established within the system are as follows:

a) The designated recipient of orders within the Merchant organization will check for new orders at least on a daily basis, if not more frequently. Orders are received by the Merchant via e-mail or other electronic notification, including automated direct input to legacy order management systems owned or operated by the Merchant. These orders include all pertinent customer data required for fulfillment of each order. Merchants may also view all orders online, sorted by date, status (new/viewed), or other criteria, and download orders in bulk form directly from the outsource provider.

b) After receiving the order, the Merchant will ship the order to the Customer within a reasonable time period for the type of merchandise ordered. Merchant will have the ability to modify the shipping status of the orders within the system. Merchants are obligated to provide timely shipping of their products. If any item ordered is out of stock or discontinued, the Merchant must update their catalog on the e-commerce outsource provider immediately and notify any affected customers immediately via e-mail or regular mail. Orders should be processed according to whatever internal process flow has been established by the Merchant.

c) Upon receipt of payment for the prior month's orders, the Merchant is responsible for reconciling the amount remitted with their own fulfillment records. Any disputes should be addressed by accessing the Merchant interface and querying/updating records.

The embodiments described above are given as illustrative examples only. It will be readily appreciated that many deviations may be made from the specific embodiment disclosed in this specification without departing from the invention. Accordingly, the scope of the invention is to be determined by the claims below rather than being limited to the specifically described embodiment above.

1. A process of creating and displaying Internet web pages comprising:

(a) computer storing indicia describing the appearance of a set of one or more visually perceptible elements, which elements are displayed, along with primary content, on web browsers accessing a first web page, and which set of elements suggest a source of the first web page; and

(b) using the computer-stored indicia to cause the display of a second web page on web browsers of computer users who indicate interest in a buying opportunity by following a selectable navigation link from the first web page leading to the second web page;

(c) wherein said second web page contains the set of visually perceptible elements along with content describing at least one commerce object;

(d) wherein the second web page apart from the commerce objects has a distinctive overall appearance corresponding to a distinctive overall appearance of the first web page apart from its primary content;

(e) wherein a first owner controls the primary content of the first web page and a second owner controls the content of the second web page and the information displayed on the second web page about the commerce object;

(f) wherein said at least one commerce object pertains to an opportunity to purchase an offering of a merchant, which is neither the first nor the second owner; and

(g) wherein the first and second owners have contracted with each other to share revenue generated as a result of computer users purchasing from the merchant as a result of visiting the second web page.

2. The process of claim 1 wherein computer storing indicia comprises computer storing indicia describing the appearance of a set of elements that suggests a source of the first web page by being consistent across a set of web pages, including the first web page, which set constitutes some or all of a website of the first owner.

3. The process of claim 1 wherein computer-storing indicia comprises storing HTML code and images.

4. The process of claim 1 wherein the set of visually perceptible elements derived from the indicia comprises the appearance of the top and left side of the first web page.

5. The process of claim 1 wherein the set of visually perceptible elements derived from the indicia comprises the appearance of the header and footer of the first web page.

6. The process of claim 1 wherein the set of visually perceptible elements includes a set of navigational links, used on the first web page, each of which links, when activated, causes a browser to display a select page of a website of the first owner.

7. The process of claim 1 wherein the set of visually perceptible elements includes a logo identifying the first owner.

8. The process of claim 1 wherein the set of visually perceptible elements includes all of the following:

(a) a logo identifying the first owner;

(b) a color scheme used on the first web page;

(c) a page layout used on the first web page; and

(d) a set of navigational links, used on the first web page, each of which links, when activated causes a browser to display a select page of a website of the first owner.

9. The process of claim 1 wherein causing the display of the second web page comprises causing the display of the second web page on browsers of computer users who click the link.

10. The process of claim 9 wherein causing the display of the second web page comprises causing said display without any action by the computer user other than clicking the link.

11. The process of claim 1 wherein the commerce object is a catalog having a multitude of merchant offerings and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.

12. The process of claim 1 wherein the commerce object is a set of product categories and wherein the second web page further comprises a display accepting input of search parameters that can be used to search for products within the product categories.

13. The process of claim 1 wherein the second web page apart from the commerce objects has a distinctive overall appearance essentially matching the distinctive overall appearance of the first web page apart from its primary content.

14. The process of claim 1 wherein the merchant offerings is a type of goods.

15. The process of claim 1 wherein having a contract providing for sharing of revenue comprises having a contract that provides for the second owner to pay a commission to the first owner on account of purchases of merchant offerings on the second web page by computer users who followed the link from the first web page to the second web page.

16. The process of claim 1 further comprising directing computer users' web browsers to one or more third web pages providing a checkout procedure that includes collection of payment information, in response to the computer users' selection of the commerce object, indicating a desire to purchase the merchant's offering to which the commerce object on the second web page pertains.

17. The process of claim 16 wherein the one or more third web pages, apart from information displayed about the checkout procedure, have an overall appearance corresponding to an overall appearance of the first web page apart from its primary content.

18. The process of claim 1 further comprising forwarding to the merchant order information relating to computer users who select the commerce object on the second web page, indicating a desire to purchase the merchant's offering to which the commerce object pertains.

19. The process of claim 1 wherein:

(a) computer storing indicia comprises computer storing HTML code and images describing the appearance of a set of elements that suggests a source of the first web page by being consistent across a set of web pages, including the first web page, which set constitutes some or all of a website of the first owner;

(b) causing the display of the second web page comprises causing the display of the second web page on browsers of computer users who click the link;

(c) the second web page apart from the commerce objects has a distinctive overall appearance essentially matching the distinctive overall appearance of the first web page apart from its primary content;

(d) the commerce object is a catalog having a multitude of merchant offerings;

(e) the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog; and

(f) having a contract providing for sharing of revenue comprises having a contract that provides for the second owner to pay the first owner on account of purchases of merchant offerings on the second web page by computer users who followed the link from the first web page to the second web page.

20. The process of claim 19 wherein the commerce object is a set of product categories and wherein the second web page further comprises a display accepting input of search parameters that can be used to search for products within the product categories.

21. The process of claim 1 wherein using the computer-stored indicia to cause the display of a second web page comprises displaying on the second web page information about a plurality of commerce objects.

22. The process of claim 21 wherein the contract between the first and second owners requires the second owner to maintain a commerce object database containing information about a multitude of commerce objects and to provide information from that database for display on the second web page.

23. The process of claim 22 wherein the second owner further has contracts with a plurality of merchants to include in the commerce object database data

concerning the merchant's offerings for sale to computer users viewing the second web site.

24. The process of claim 23 further comprising, in response to an indication received from the browser of a computer user displaying the second web page of a desire to purchase a merchant offering identified in the information about the commerce object displayed on the second web page, and pursuant to the contract between the first and second owner and the contracts between the second owner and the merchants, capturing billing information from the browser and arranging for that computer user to be charged for the identified offering.

25. The process of claim 24 wherein arranging for a computer user to be charged comprises arranging to divide revenue from the charge among the merchant, the first owner, and the second owner, pursuant to the contract between the first and second owners and the contracts between the second owner and the merchants.

26. The process of claim 25 wherein using the computer-stored indicia to cause the display of a second web page comprises serving the second web page from a server controlled by the second owner.

27. The process of claim 25 wherein the indicia describing the appearance of a set of one or more visually distinctive elements found on a first web page are stored in an indicia database.

28. The process of claim 27 wherein both the commerce object database and the indicia database are maintained by the second owner and stored on the same computer system.

29. The process of claim 27 wherein the commerce object is a set of product categories and wherein the second web page further comprises a display accepting input of search parameters that can be used to search for products within the product categories.

30. The process of claim 29 wherein both the commerce object database and the indicia database are maintained by the second owner and stored on the same computer system.

31. The process of claim 30 wherein using the computer-stored indicia to cause the display of a second web page comprises serving the second web page from a server controlled by the second owner.

32. A method of offering supplemental commercial opportunities to a web page owner comprising:

(a) maintaining a computer database of information about a multitude of commerce objects;

(b) contracting with a owner that controls a first web page to display on the first web page, along with other content on that page, a user-selectable navigation link leading to a second web page; and

(c) under contract with that owner, causing the second web page to be displayed on web browsers of computer users who activate the selectable navigation link on the first web page;

(d) wherein the commerce objects pertain to an opportunity to purchase an offering of a third-party merchant; and

(e) wherein causing the second web page to be displayed comprises causing to be displayed on the second web page (i) a set of one or more visually perceptible elements also displayed on the first web page that suggest a source of the first web page, along with (ii) information from the computer database about at least one of the multitude of commerce objects, with the consequence that the second web page apart from the displayed information about the commerce objects has a distinctive overall appearance corresponding to a distinctive overall appearance of the first web page;

whereby the method reduces the likelihood that viewers of the first web page will not resume viewing either the first web page or pages that are part of a web site containing the first web page after viewing the information available through the second web page.

33. The method of claim 32 wherein the set of visually perceptible elements comprises the appearance of the top and left side of the first web page.

34. The method of claim 32 wherein the set of visually perceptible elements comprises the appearance of the header and footer of the first web page.

35. The method of claim 32 wherein the set of visually perceptible elements includes a set of navigational links, used on the first web page, each of which links, when activated, causes a browser to display a select page of a website of the controlling owner.

36. The method of claim 32 wherein the set of visually perceptible elements includes a logo identifying the controlling owner.

37. The method of claim 32 wherein computer storing indicia comprises computer storing indicia describing the appearance of a set of elements that suggests a source of the first web page by being consistent across a set of web pages, including the first web page, which set constitutes some or all of a website of the controlling owner.

38. The method of claim 32 wherein the commerce object is a set of product categories and wherein causing the second web page to be displayed further comprises causing to be displayed on the second web page an input field accepting search parameters that can be used to search for products within the product categories.

39. The method of claim 32 wherein causing the second web page to be displayed further comprises displaying on the second web page information about a plurality of commerce objects.

40. The method of claim 39 further comprising contracting with a plurality of merchants having offerings for sale to include, in the computer database of information about the commerce objects, information concerning the merchants' offerings.

41. The method of claim 40 further comprising, in response to an indication received from the browser of a computer user displaying the second web page of a desire to purchase an offering identified in the information about the commerce object displayed on the second web page, and under contracts with the controlling owner and the merchants, capturing billing information from the browser and arranging for that computer user to be charged for the identified offering.

42. The method of claim 41 wherein arranging for a computer user to be charged comprises arranging to provide shares of revenue from the charge to each of (a) the merchant providing the identified offering, and (b) the controlling owner.

43. The method of claim 42 wherein causing the second web page to be displayed comprises controlling a server to cause it to serve the second web page.

44. The method of claim 42 further comprising the preliminary act of storing indicia describing the appearance of the set of one or more visually distinctive elements in a indicia database, and wherein causing to be displayed on the second web page the set of one or more visually perceptible elements comprises loading the indicia from the indicia database and displaying the second web page in accordance with the indicia.

45. The method of claim 44 further comprising storing both the computer database of information about the commerce objects and the indicia database on the same computer system.

46. The method of claim 44 wherein the commerce object is a set of product categories and wherein causing the second web page to be displayed further comprises causing to be displayed on the second web page an input field accepting search parameters that can be used to search for products within the product categories.

47. The method of claim 46 further comprising storing both the computer database of information about the commerce objects and the indicia database on the same computer system.

48. The method of claim 47 wherein causing the second web page to be displayed comprises controlling a server to cause it to serve the second web page.

49. The method of claim 32 wherein the commerce object is a catalog having a multitude of merchant offerings and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.

50. The method of claim 32 further comprising directing computer users' web browsers to one or more third web pages providing a checkout procedure that includes collection of payment information, in response to the computer users' selection of the commerce object, indicating a desire to purchase the merchant's offering to which the commerce object on the second web page pertains.

51. The method of claim 50 wherein the one or more third web pages, apart from information displayed about the checkout procedure, have an overall appearance

corresponding to an overall appearance of the first web page apart from its primary content.

52. The method of claim 32 further comprising forwarding to the merchant order information relating to computer users who select the commerce object on the second web page, indicating a desire to purchase the merchant's offering to which the commerce object pertains.

53. The method of claim 32 wherein contracting to display a second web page comprises having a contract providing for sharing of revenue with the owner of the first web page on account of purchases of merchant offerings on the second web page by computer users who followed the link from the first web page to the second web page.

54. The method of claim 32 wherein:

(a) contracting to display the second web site comprises agreeing to computer store HTML code and images describing the appearance of a set of elements that suggests a source of the first web page by being consistent across a set of web pages, including the first web page, which set constitutes some or all of a website of the owner;

(b) the second web page apart from the commerce objects has a distinctive overall appearance essentially matching the distinctive overall appearance of the first web page apart from said other content;

(c) the commerce object is a catalog having a multitude of merchant offerings;

(d) the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog; and

(e) contracting to display a second web page comprises having a contract providing for sharing of revenue with the controlling owner on account of purchases of merchant offerings on the second web page by computer users who followed the link from the first web page to the second web page.

55. A method of generating additional revenue from a web page through supplemental commercial opportunities offered off-site comprising:

(a) causing to be displayed on a first web page, along with other content of that page, a user-selectable navigation link to a second web page; and

(b) contracting with a owner that maintains a computer database of information about a multitude of commerce objects to cause the second web page to be displayed on web browsers of computer users who activate the selectable navigation link on the first web page, which second web page is programmed to display:

(i) a set of one or more visually perceptible elements also displayed on the first web page that suggest a source of the first web page, and

(ii) information from the computer database about at least one of the multitude of commerce objects, which displayed commerce objects provide the computer user whose browser is displaying the second web page an opportunity to purchase an offering of a third-party merchant;

with the consequence that the second web page apart from the displayed information about the commerce objects has a distinctive overall appearance corresponding to a distinctive overall appearance of the first web page;

whereby the method reduces the likelihood that viewers of the first web page will not resume viewing either the first web page or pages that are part of a web site containing the first web page as a result of viewing the supplemental information on the second web page.

56. The method of claim 55 wherein the set of visually perceptible elements comprises the appearance of the top and left side of the first web page.

57. The method of claim 55 wherein the set of visually perceptible elements comprises the appearance of the header and footer of the first web page.

58. The method of claim 55 further comprising maintaining a multi-page website including the first web page, wherein the first web page includes a set of navigational links to other pages of the multi-page website, and wherein the set of

visually perceptible elements includes the set of navigational links, each of which links, when activated from the second web page, causes a browser to display respective linked pages of the multi-page website.

59. The method of claim 58 wherein the set of visually perceptible elements includes an identifying logo.

60. The method of claim 59 wherein the set of visually perceptible elements further includes a color scheme and page layout used on the first web page.

61. The method of claim 55 wherein the commerce object is a set of product categories and wherein contracting to cause the second web page to be displayed further comprises contracting to cause to be displayed on the second web page an input field accepting search parameters that can be used to search for products within the product categories.

62. The method of claim 61 wherein contracting to cause the second web page to be displayed further comprises contracting to cause to be displayed on the second web page information about a plurality of commerce objects.

63. The method of claim 62 wherein the owner maintaining the database has contracts with a plurality of merchants to include, in the computer database containing information about the commerce objects, information concerning the commerce objects related to said merchants' offerings.

64. The method of claim 63 wherein contracting to cause the second web page to be displayed further comprises agreeing to a term under which the owner maintaining the database, in response to an indication received from the browser of a computer user displaying the second web page of a desire to purchase a offering identified in the information about the commerce object displayed on the second web page, will arrange to capture billing information from the browser and cause that computer user to be charged for the identified offering.

65. The method of claim 64 wherein contracting to cause the second web page to be displayed comprises agreeing to receive a portion of the revenue received from the charge to the computer user.

66. The method of claim 65 wherein contracting with a owner maintaining the database to cause the second web page to be displayed on web browsers of computer users who activate the selectable navigation link on the first web page comprises contracting to have the owner maintaining the database serve the second web page.

67. The method of claim 66 wherein the commerce object is a set of product categories and wherein contracting to cause the second web page to be displayed further comprises contracting to cause to be displayed on the second web page an input field accepting search parameters that can be used to search for products within the product categories.

68. The method of claim 55 wherein the commerce object is a catalog having a multitude of merchant offerings and wherein the second web page contains one or more selectable navigation links connecting a hierarchical set of additional second web pages, each pertaining to a subset of the offerings in the catalog.

69. The method of claim 68 wherein contracting with the owner maintaining the database comprises arranging to receive from the owner a share of revenue from purchases of merchant offerings on the second web page by computer users who followed the link from the first web page to the second web page.

70. The method of claim 69 wherein contracting with the owner maintaining the database further comprises arranging with the owner (a) to direct computer users' web browsers to one or more third web pages providing a checkout procedure that includes collection of payment information, in response to the computer users' selection of the commerce object, indicating a desire to purchase the merchant's offering to which the commerce object on the second web page pertains, wherein the one or more third web pages, apart from information displayed about the checkout procedure, have an overall appearance corresponding to an overall appearance of the first web page, and (b) to forward to the merchant order information relating to computer users who select the commerce object on the second web page, indicating a desire to purchase the merchant's offering to which the commerce object pertains.

ABSTRACT

An e-commerce outsourcing system and method provides hosts with transparent, context-sensitive e-commerce supported pages. The look and feel of a target host is captured for future use. The host is provided with one or more links for inclusion within a page on the host website that correlates with a selected commerce object, which may be contextually related to material in the page. The commerce object can be a product, a product category, or a dynamic selection indicator. Upon activation of the provided link, a visitor computer is served with a page with the look and feel of the host website and with content based upon the associated commerce object. Where the commerce object is a dynamic selection indicator, the content is selected at the time of activation based upon an analysis of the page containing the activated link.

105a
105b
105c
105d
105e
105f
THE INTERNET
110
115
WEB SERVERS (WINDOWS NT)
120a
120b
120c
LOAD BALANCING ROUTER
100 MBS ETHERNET
125a
125b
125c
125d
APPLICATION SERVERS
100 MBS ETHERNET
DATABASE SERVERS
130a
130b
135a
135c
135b
135d
D
DATABASE
DAT
DATABASE

FIG.1

WEB SERVER SOFTWARE
210
ASP SCRIPTS
220
COM ADAPTER
230
API CLIENT LAYER
240
OBJECT CACHE
250
REMOTE PROCEDURE CALL CLIENT
260

FIG.2

REMOTE PROCEDURE CALL SERVER
310
APPLICATION LOGIC
320
VIRTUAL DATABASE
330
DBMS CLIENT
340

FIG.3

HOST MANAGER WEBSITE
410
425
CANCEL
HOST INFORMATION HostSignup.asp
420
SAVE xt_CreateHostInfo.asp
430
448
NOT AGREE
HOST AGREEMENT HostAgreement.asp
440
AGREE
444
458
450
CANCEL
ENTER LOGIN ID AND PASSWORD HostSignup2.asp
ID IN USE
454
SAVE xt_CreateHostAccount.asp
460
HOST ADMIN SYSTEM HostAdmin.asp
470

FIG.4

HOST ADMIN MENU HostAdmin.asp
470
530
SAVE OR CANCEL xt_MaintainHostInfo.asp
UPDATE ACCOUNT
510
MAINTAIN HOST INFORMATION MaintainHostInfo.asp
520

FIG.5

470
HOST
ADMIN
MENU
HostAdmin.asp
DESIGN STOREFRONT
WIZARD
605
INTRODUCTION
host_setup0.asp
610
615
BEGIN
STEP 1
PROVIDE URL
host_setup1.asp
CONTINUE
635
CHANGE
620
STEP 2
CAPTURE HEADER HTML
host_setup2.asp.asp
CHANGE
640
CONTINUE
625
CHANGE
645
STEP 3
CAPTURE FOOTER HTML
host_setup3.asp.asp
CONTINUE
630
STEP 4
PREVIEW THE DESIGN
host_setup4.asp.asp
CONTINUE
655
650
PREVIEW
CONTINUE
PREVIEW STORE
(NEW WINDOW)
store_preview.asp
680
675
DONE
665
VALIDATE
LINKS &
IMAGES
STEP 5
FINAL CHECK
host_setup5.asp.asp
660
SAVE
xt_SaveStore.asp
670

FIG.6

HOST ADMIN MENU HostAdmin.asp
470
SETUP LINKS
705
710
735
LIST OF CURRENT MERCHANT LINKS HostMerchantList.asp
715
745
ADD LINK WIZARD NEW MERCHANT
REMOVE LINK xt_MaintainHostMerchantLinkt
STEP 1 SELECT/SEARCH CATALOG SelectCatalogSearch.asp
CANCEL
722
EDIT
740
SAVE xt_MaintainHostMerchantLinkt2.asp
SELECT
750
VIEW
728
STEP 2 SELECT A PRODUCT OR CATAGORY BrowseCatalog.asp.asp
BACK
ADD LINK
VIEW/UPDATE LINK NAME MaintainHostMerchantLink2.asp
730
720
SELECT
VIEW Shop.asp
STEP 3 SET LINK ATTRIBUTES SetReferringURL.asp
BACK
755
725
CONTINUE
STEP 4 NAME AND SAVE LINK MaintainHostLink.asp
BACK
760
SAVE xt_MaintainHostMerchantLink.asp
765
STEP 5 COPY AND PASTE LINK href MaintainHostLink.asp
FINISHED
770

FIG.7

810
LINK INDICATING DYNAMIC CONTENT SELECTION ACTIVATED FROM A HOST-OWNED WEB PAGE
820
HAS DYNAMIC CONTENT BEEN SHOWN THROUGH THIS LINK BEFORE?
YES
NO
830
IS THE AGE OF THE CONTENT SELECTION ACCEPTABLE?
YES
NO
840
SERVE THE DESIRED CONTENT FOR THIS PAGE PER THE MERCHANDIZER DATABASE
850
GET THE PAGE IN WHICH THE LINK RESIDES.
860
SELECT APPROPRIATE CONTENT BASED ON PAGE CONTENT.
870
STORE CONTENT SELECTION IN MERCHANDIZER DATABASE.

FIG.8

NEXCHANGE-MERCHANT MANAGER-UPDATE ACCOUNT-MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
BACK
FORWARD
STOP
REFRESH
HOME
SEARCH
FAVORITES
HISTORY
MAIL
PRINT
ADDRESS
GO!
LINKS >>
nexchange™
justforfeet
MAIN
MANAGE ORDERS
EDIT PRODUCT/CATALOG
GENERATE REPORTS
REVIEW HOSTS
UPDATE ACCOUNT
FREQUENTLY ASKED QUESTIONS
CONTACT US
GO!
INTERNET

ADDRESS: http://216.0.58.3/MerchantAdmin/Admin.asp?MerchantSID=88661467

MERCHANT MANAGER

WORLD'S LARGEST ATHLETIC SHOE STORE
WHERE THE 13th PAIR IS FREE
JUST FOR FEET

QUICK SUMMARY OF RESULTS

SALES TO DATE: $0.00
SALES THIS MONTH: $0.00
QUICK REPORT: THIS MONTH

SALES ARE GROSS SALES AND DO NOT INCLUDE ADJUSTMENTS

ANNOUNCEMENTS

YOU HAVE 0 NEW ORDERS
YOU HAVE 0 ORDERS TO SHIP
YOU HAVE 0 RETURNS TO PROCESS

NUMBER OF HOSTS IN NETWORK:0
NUMBER OF BUYING 'LINKS':0

NEXCHANGE NEWS

NEXCHANGE GOES THE EXTRA MILE AND MANAGES EVERY ASPECT OF YOUR AFFILIATE PROGRAM-FROM RECRUITING AFFILIATE WEBSITES AND GIVING THEM TOOLS THEY NEED TO SELL ALL THE WAY THROUGH PAYING THEM MONTHLY SALES COMMISSIONS. WE KEEP IT SIMPLE. YOU PRODUCE GREAT PRODUCTS. WE SELL THEM ALL ACROSS THE INTERNET.

NEXCHANGE GIVES YOU CONTROL.

YOU CHOOSE THE PRODUCT MIX, SET PRICES, AND DESIGN THE ONLINE CATALOG. YOU REACH NEW CUSTOMERS WITHOUT THE TRADITIONAL COSTS OF SALES. NEXCHANGE ONLY EARNS MONEY WHEN WE SELL YOUR PRODUCTS SUCCESSFULLY.

FIG.9

NEXCHANGE-HOST MANAGER-MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
BACK
FORWARD
STOP
REFRESH
HOME
SEARCH
FAVORITES
HISTORY
MAIL
PRINT
ADDRESS
GO!
LINKS >>
nexchange™
HOME
DESIGN YOUR STOREFRONT
CREATE ONLINE STORES
VIEW REPORTS
HELP TIPS AND TOOLS
ACCOUNT INFORMATION
GO!
DONE
○ INTERNET

http://www.nexchange.net/../../HostAdmin/HostAdmin.asp?HostSID=94191470

HOST MANAGER

ACCOUNT NO: 238
LEARN2.com

NEW HOSTS: GETTING STARTED

IT'S EASY TO GET STARTED AS A NEXCHANGE HOST...

1)CLICK THE 'DESIGN YOUR STOREFRONT' BUTTON ABOVE AND FOLLOW THE STEP-BY-STEP INSTRUCTIONS TO CUSTOMIZE THE LOOK AND FEEL OF YOUR ONLINE STORES.

2) CLICK THE 'CREATE ONLINE STORES' BUTTON ABOVE AND THE PRODUCTS TO SELL IN EACH ONLINE STORE (NexShop). SEE BELOW FOR INFORMATION ABOUT THE LATEST CONTEST!

3) CREATE A REASON FOR VISITORS TO VISIT AND BUY FROM YOUR STORES. TRY BANNERS, BUTTONS, TEXT LINKS, OR OTHER IDEAS. CREATE CONTENT THAT WILL EXCITE YOUR VISITORS ABOUT THE PRODUCTS YOU SELL. THE BETTER YOU ARE AT EMBEDDING THE PRODUCTS INTO RELEVANT CONTENT,

QUICK SUMMARY OF RESULTS

COMMISSIONS TO DATE: $7.24
COMMISSIONS THIS MONTH: $0.00
QUICK REPORT: BY MONTH-THIS MONTH

COMMISSIONS ARE GROSS COMMISSIONS AND DO NOT INCLUDE ADJUSTMENTS

FIG.10

NEXCHANGE-STEP 1-MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
LINKS >>
nexchange™
HOST MANAGER
ACCOUNT NO: 2765
ABOUT.Com
HOME
DESIGN YOUR STOREFRONT
CREATE ONLINE STORES
VIEW REPORTS
HELP TIPS AND TOOLS
ACCOUNT INFORMATION
▷ STEP 1: PROVIDE URL
STEP 2: CAPTURE HEADER HTML
STEP 3: CAPTURE FOOTER HTML
STEP 4: PREVIEW YOUR NexShop
STEP 5: FINAL CHECK
CONTINUE

DESIGN YOUR STOREFRONT

HERE YOU WILL ENTER THE URL OF THE PAGE WE USE TO CAPTURE TEXT, IMAGES, AND LINKS THAT COMPRISE THE LOOK AND FEEL OF YOUR STOREFRONT

YOUR WEBSITE HOMEPAGE URL IS ALREADY ENTERED BELOW. IF THIS IS THE DIRECTORY THAT CONTAINS THE TEXT, IMAGES AND LINKS WE WILL USE TO DESIGN YOUR STOREFRONT, CLICK THE CONTINUE BUTTON.

IF YOU WILL BE USING THE TEXT, IMAGES, AND LINKS FROM ANOTHER PAGE ON YOUR WEBSITE, PLEASE ENTER THE BASE URL OF THAT WEBSITE PAGE. THE BASE URL IS THE DIRECTORY IN WHICH THAT SPECIFIC PAGE RESIDES. FOR EXAMPLE, IF YOUR WEBSITE IS LOCATED AT http://www.website.com/, BUT YOU WANT TO CAPTURE THE TEXT, IMAGES, AND LINKS LOCATED ON THE PAGE http://www.website.com/directory/page.html, THEN THE BASE URL IS http://www.website.com/directory/. IF THE PAGE YOU ARE USING CONTAINS AN HTML BASE TAG, THEN YOU WILL NEED TO ENTER THE URL OF THAT HTML BASE TAG.

PLEASE MAKE SURE YOU ENTER THE EXACT BASE URL, INCLUDING ALL DIRECTORIES. INCLUDE THE HTTP://AT THE BEGINNING, AND END WITH A SLASH. WHEN YOU ARE FINISHED, CLICK THE CONTINUE BUTTON.

http://www.about.com/

FIG.11

NEXCHANGE-STEP 2-MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
LINKS >>
nexchange™
HOST MANAGER
HOME
DESIGN YOUR STOREFRONT
CREATE ONLINE STORES
VIEW REPORTS
HELP TIPS AND TOOLS
ACCOUNT INFORMATION

ACCOUNT NO: 2765
ABOUT.Com

- STEP 1: PROVIDE URL
- ▷ *STEP 2: CAPTURE HEADER HTML*
- STEP 3: CAPTURE FOOTER HTML
- STEP 4: PREVIEW YOUR NexShop
- STEP 5: FINAL CHECK

DESIGN YOUR STOREFRONT

IN STEP 2 AND STEP 3, YOU WILL BE PROVIDING THE HTML CODE (COMPRISING THE TEXT, IMAGES, AND LINKS) THAT WILL APPEAR ON YOUR STOREFRONT. FOR THESE STEPS, YOU WILL NEED TO BE VIEWING THE SOURCE HTML CODE OF THE PAGE YOU ENTERED IN STEP 1.

HERE, WE CAPTURE THE TEXT, IMAGES, AND LINKS THAT YOUR VISITORS WILL SEE ABOVE AND TO THE LEFT OF THE PRODUCTS SOLD IN EACH NexShop. IN THE BOX BELOW, PLEASE PASTE THE HTML CODE OF THE TEXT, IMAGES, AND LINKS TO APPEAR ON THE TOP AND LEFT SIDE OF YOUR STOREFRONT. IF YOUR HTML CODE CONTAINS A BASE TAG, PLEASE REMOVE IT. THEN CLICK THE CONTINUE BUTTON.

```
<!--TOPINC CODE CREATED BY NESTOR FERNANDEZ-APRIL 21, 1999-:^0--
>
<!--SERVER= www.aboul.com, TMOG=6303048865529, MINT=
328829035114348, IN2PID = , IN2ID = NULL, SESSION_ID = 328829035-->
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 TRANSITIONAL//EN">
<HTML>
<HEAD>
<TITLE> ABOUT.COM- HUMAN GUIDES. HUMAN INTERESTS. EXPERT GUIDANCE
FROM HUNDREDS OF GUIDES.</TITLE>
<META NAME="KEYWORDS" CONTENT="GAMES MUSIC TRAVEL SPORTS JOBS
FREE STUFF BOOKS SOFTWARE AUCTION CARS CHAT CASINO CITY MAPS
ENTERTAINMENT AIRLINES GIFTS JOKES HOTELS FUN CHAT ROOMS HOROSCOPE
```

FIG.12

NEXCHANGE-STEP 3 – MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
LINKS >>
nexchange™
HOST MANAGER
HOME
DESIGN YOUR STOREFRONT
CREATE ONLINE STORES
VIEW REPORTS
HELP TIPS AND TOOLS
ACCOUNT INFORMATION
CONTINUE

ACCOUNT NO: 2765
ABOUT.Com

STEP 1: PROVIDE URL
STEP 2: CAPTURE HEADER HTML
▷ *STEP 3: CAPTURE FOOTER HTML*
STEP 4: PREVIEW YOUR NexShop
STEP 5: FINAL CHECK

DESIGN YOUR STOREFRONT

JUST LIKE IN STEP 2 , YOU WILL BE PROVIDING THE HTML CODE (COMPRISING THE TEXT, IMAGES, AND LINKS) THAT WILL APPEAR ON YOUR STOREFRONT. FOR THESE STEPS, YOU WILL NEED TO BE VIEWING THE SOURCE HTML CODE OF THE PAGE YOU ENTERED IN STEP 1.

HERE WE CAPTURE THE TEXT, IMAGES, AND LINKS THAT YOUR VISITORS WILL SEE BELOW AND TO THE RIGHT OF THE PRODUCTS SOLD IN EACH NexShop. IN THE BOX BELOW, PLEASE PASTE THE HTML CODE OF THE TEXT, IMAGES, AND LINKS TO APPEAR ON THE BOTTOM AND RIGHT SIDE OF YOUR STOREFRONT. THEN CLICK THE CONTINUE BUTTON.

```
</TD>
        </TR>


<!--4-->
        <TR>
    <TD COLSPAN=4 WIDTH=600 ALIGN=CENTER VALIGN=TOP> <BR><FONT
FACE="MS SANS SERIF, GENEVA" SIZE=-2>
©<A HREF = "http://home.about.com/gi/pages/mcopyrt.htm">1999</A>
ABOUT.COM, INC. ALL RIGHTS RESERVED.
<BR>
©    1999 ABOUT.COM, INC. "MININGCO.COM" AND "ABOUT.COM" ARE
TRADEMARKS OF ABOUT .COM, INC.,<BR> A PUBLICLY TRADED COMPANY LISTED
```

FIG.13

NEXCHANGE-STEP 4-MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
LINKS >>
nexchange™
HOST MANAGER
ACCOUNT NO: 2765
ABOUT.Com
HOME
DESIGN YOUR STOREFRONT
CREATE ONLINE STORES
VIEW REPORTS
HELP TIPS AND TOOLS
ACCOUNT INFORMATION
STEP 1: PROVIDE URL
STEP 2: CAPTURE HEADER HTML
STEP 3: CAPTURE FOOTER HTML
▷ STEP 4: PREVIEW YOUR NexShop
STEP 5: FINAL CHECK

DESIGN YOUR STOREFRONT

YOU'RE ALMOST DONE! CLICK THE PREVIEW BUTTON TO VIEW WHAT THIS STORE WILL LOOK LIKE. A NEW BROWSER WILL OPEN. PLEASE CAREFULLY REVIEW THE TEXT, IMAGES, AND LINKS. IF EVERYTHING IS CORRECT, AND THE SAMPLE "CELEBRATE THE SEASONS" BOOK IS LOCATED IN THE APPROPRIATE PLACE IN THE PAGE, CLOSE THE STORE PREVIEW WINDOW AND CLICK THE CONTINUE BUTTON BELOW.

IF CHANGES NEED TO BE MADE, CLICK ONE OF THE BUTTONS IN THE CENTER COLUMN BELOW, MAKE THE APPROPRIATE CHANGES, THEN CLICK THE CONTINUE BUTTON UNTIL YOU GET BACK TO THIS PAGE. FOR EXAMPLE, IF NONE OF YOUR WEBSITE IMAGES SHOW UP IN THE STORE PREVIEW, CLICK THE CHANGE THE BASE URL BUTTON AND CONFIRM THAT YOU ENTERED A WEBSITE DIRECTORY, NOT A SPECIFIC PAGE (.html). IF YOU WANT TO MAKE CHANGES TO THE DESIGN ABOVE THE "CELEBRATE THE SEASONS" STORE, CLICK THE CHANGE THE HEADER BUTTON

WHEN YOU ARE DONE, CLICK THE CONTINUE BUTTON.

IF YOU WOULD LIKE TO HELP DESIGNING YOUR STOREFRONT, JUST SEND AN EMAIL TO hosthelp@nexchange.com AND WE WILL DESIGN YOUR STOREFRONT FOR FREE. PLEASE INCLUDE YOUR NAME, ACCOUNT NUMBER, AND WEBSITE URL IN THE MESSAGE.

PREVIEW YOUR STOREFRONT, THEN...

CLICK ONE OF THE BUTTONS BELOW TO MAKE CORRECTIONS

OR CLICK BELOW TO CONTINUE

CHANGE THE BASE URL
PREVIEW
CHANGE THE HEADER
CONTINUE
CHANGE THE FOOTER

FIG.14

ABOUT.COM-HUMAN GUIDES. HUMAN INTERESTS. EXPERT GUIDANCE FROM HUNDREDS OF GUIDES.-MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
LINKS >>
Current
Sweepstakes
Find it! msn Sidewalk Yellow Pages
About.com
SEARCH
Join Free
About.com Trivia Challenge Sweepstakes
enter now!
The Dunwoody Gourmet Group
Safe Shopping By nexchange
Celebrate the Seasons!

Dads & Grads Golf Outing: Trip for 2 to Ryder Cup

win a 2000 Jeep Cherokee Sport 4 x 4

SAT. JUN 12 1999

TOP SEARCHES: GENEAOLOGY, CLIP ART

THIS IS ONLY A PREVIEW-SHOPPING IS DISABLED

ABOUT.COM GUIDES ARE REAL PEOPLE

GUIDES IN THE SPOTLIGHT

REAL-TIME NEWS: GUIDE JACK DOWNS COVERS THE CONS OF INSTANT INFORMATION.

IS MSG SAFE? NUTRITION GUIDE RICK HALL TAKES A LOOK AT THE FLAVOR ENHANCER.

PLUS
SHAGADELIC STYLE
KNICKS TRIUMPH
HELP FOR PROBLEM DRINKERS

GUIDE OF THE DAY

CAMPING: GET BACK TO NATURE WITH HELP FROM GUIDE DAVID SWEET.

CELEBRATE THE SEASONS!

CELEBRATE THE SEASONS! IS A COOKBOOK FILLED WITH OUTSTANDING SEASONAL MENUS ENJOYED BY THE DUNWOODY GOURMET GROUP, A NEIGHBORHOOD GOURMET GROUP FORMED BY SIX ATLANTA COUPLES OVER 20 YEARS AGO.

CELEBRATE THE SEASONS! FEATURES 20 GOURMET MENUS, EACH WITH SIX COURSES--OVER 165 RECIPES IN ALL!

ORDER YOUR COPY AND START CELEBRATING THE SEASONS WITH YOUR FRIENDS TODAY! FREE SHIPPING IF YOU ORDER 5 OR MORE BOOKS!

FIG.15

NEXCHANGE-STEP 5-MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
LINKS >>
nexchange™
HOST MANAGER
HOME
DESIGN YOUR STOREFRONT
CREATE ONLINE STORES
VIEW REPORTS
HELP TIPS AND TOOLS
ACCOUNT INFORMATION
VALIDATE
SAVE

ACCOUNT NO: 2765
ABOUT.Com

STEP 1: PROVIDE URL
STEP 2: CAPTURE HEADER HTML
STEP 3: CAPTURE FOOTER HTML
STEP 4: PREVIEW YOUR NexShop
▷ *STEP 5: FINAL CHECK*

DESIGN YOUR STOREFRONT

IF YOU WOULD LIKE, THE HOST MANAGER SYSTEM WILL VALIDATE THE LINKS AND IMAGES IN YOUR STORE DESIGN. THIS WILL ENSURE THAT YOUR VISITORS WILL BE ABLE TO NAVIGATE WITHIN YOUR STORES AS EASILY AS THEY DO ON YOUR WEBSITE. WE RECOMMEND THAT YOU COMPLETE THIS FINAL STEP.

CLICK THE VALIDATE BUTTON AND THE HOST MANAGER WILL CONFIRM ALL OF THE IMAGES AND LINKS. IF IT FINDS PROBLEMS, THE SYSTEM WILL LIST THEM BELOW FOR YOU TO FIX.

WHEN YOU ARE FINISHED, OR IF YOU WANT TO SKIP THIS STEP, CLICK THE SAVE BUTTON.

○ LINKS ONLY
○ IMAGES ONLY
● LINKS AND IMAGES

FIG.16

NEXCHANGE-STEP 5-MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
LINKS >>
nexchange™
HOST MANAGER
HOME
DESIGN YOUR STOREFRONT
CREATE ONLINE STORES
VIEW REPORTS
HELP TIPS AND TOOLS
ACCOUNT INFORMATION
VALIDATE
SAVE

ACCOUNT NO: 2765
ABOUT.Com

- STEP 1: PROVIDE URL
- STEP 2: CAPTURE HEADER HTML
- STEP 3: CAPTURE FOOTER HTML
- STEP 4: PREVIEW YOUR NexShop
- ▷ *STEP 5: FINAL CHECK*

DESIGN YOUR STOREFRONT

IF YOU WOULD LIKE, THE HOST MANAGER SYSTEM WILL VALIDATE THE LINKS AND IMAGES IN YOUR STORE DESIGN. THIS WILL ENSURE THAT YOUR VISITORS WILL BE ABLE TO NAVIGATE WITHIN YOUR STORES AS EASILY AS THEY DO ON YOUR WEBSITE. WE RECOMMEND THAT YOU COMPLETE THIS FINAL STEP.

CLICK THE VALIDATE BUTTON AND THE HOST MANAGER WILL CONFIRM ALL OF THE IMAGES AND LINKS. IF IT FINDS PROBLEMS, THE SYSTEM WILL LIST THEM BELOW FOR YOU TO FIX.

WHEN YOU ARE FINISHED, OR IF YOU WANT TO SKIP THIS STEP, CLICK THE SAVE BUTTON.

IMAGE VALIDATION STATUS		LINK VALIDATION STATUS	
VERIFYING IMAGE:	011	VERIFYING LINK:	028
VALID:	011	VALID:	028
INVALID:	000	INVALID:	000

○ LINKS ONLY
○ IMAGES ONLY
● LINKS AND IMAGES

FIG.17

NEXCHANGE-HOST ADMINISTRATION-DESIGN YOUR STOREFRONT-MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
LINKS >>
nexchange™
HOST MANAGER
ACCOUNT NO: 2765
ABOUT.Com
HOME
DESIGN YOUR STOREFRONT
CREATE ONLINE STORES
VIEW REPORTS
HELP TIPS AND TOOLS
ACCOUNT INFORMATION
NexShop GENERATOR
HOME

DESIGN YOUR STOREFRONT

CONGRATULATIONS!

YOU JUST DESIGNED YOUR NEXCHANGE STOREFRONT. YOU CAN NOW CREATE INDIVIDUAL ONLINE STORES (CALLED NexShops), CHOOSING THE PRODUCTS TO SELL WITHIN EACH STORE. FOR EACH NexShop THAT YOU CREATE, WE GENERATE AN HTML LINK FOR YOU TO EMBED WITHIN RELEVANT CONTENT ON YOUR WEBSITE. YOU CAN CREATE AN UNLIMITED NUMBER OF NexShops, PLACING THEM WHEREVER YOU WOULD LIKE ON YOUR WEBSITE. VISITORS CAN EASILY PURCHASE PRODUCTS WHILE VISITING YOUR SITE , WITHOUT EVER LEAVING YOUR SITE. YOU WILL EARN A PERCENTAGE OF EVERY SALE, KEEP YOUR VISITORS ON YOUR SITE, AND IMPROVE VISITOR SATISFACTION AND LOYALTY.

YOU CAN CREATE A NexShop AT ANY TIME BY CLICKING THE NexShop GENERATOR BUTTON FROM THE HOST MANAGER HOMEPAGE.

TO CREATE A NexShop NOW, CLICK THE NexShop GENERATOR BUTTON.

TO GO DIRECTLY TO THE HOST MANAGER HOMEPAGE, CLICK THE HOME BUTTON.

FIG.18

CULINARY CAFÉ–COOKING FOR YOU–MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
LINKS >>
go
Culinary Café
RECIPES
APPETIZERS
BARBECUE-GRILLING
BEANS-GRAINS
BREADS-BISCUITS
CANDY-SNACKS
CASSEROLES
COOKIES-BROWNIES
CROCK POT
DESSERTS
DRINKS
ETHNIC DISHES
EGGS-DAIRY
FRUITS
GARLIC
HOLIDAY FAVORITES
LOW CARB
MEAT DISHES
PANCAKES-MUFFINS
PASTA
PIES-PASTRIES
PIZZA
SALADS
SANDWICHES
SAUCES-MARINADES
SEAFOOD-FISH
SIDE DISHES
SOUPS-STEWS
VEGETABLES
VEGETARIAN
SEARCH
Culinary Café
FANCY FOODS
GOURMET CLUB
Safe Shopping By nexchange
TELL ME MORE
ADD TO CART
FIND IT
EXIT STORE
Safe Shopping

You can save money on your favorite grocery brands each week!

PRODUCT CATEGORIES:
- CHOCOLATE
- SPREADS AND ASSOCIATED PRODUCTS
- SEAFOOD AND ASSOCIATED PRODUCTS
- GIFT BASKETS
- CONDIMENTS
- OTHER PRODUCTS

FEATURED ITEM
FFGC SUPER SAMPLER GIFT SET
$62.50 TO $77.00

LOOK FOR OTHER PRODUCTS OFFERED BY FANCY FOODS GOURMET CLUB
PRODUCT LOCATOR:

FIG.19

NEXCHANGE-SYSTEM MANAGER-MAIN-MICROSOFT INTERNET EXPLORER
FILE EDIT VIEW FAVORITES TOOLS HELP
BACK
FORWARD
STOP
REFRESH
HOME
SEARCH
FAVORITES
HISTORY
MAIL
PRINT
ADDRESS
GO!
LINKS >>
nexchange™
MAIN
UTILITIES
HOSTS
MERCHANTS
AGENTS
FINANCE
DONE
INTERNET

http://www.nexchange.net/NexchangeAdmin/NexchangeAdmin.asp?NexchangeSID=94191470

SYSTEM MANAGER

9/16/99 2:06:46 PM

SHOPPING STATISTICS

PENDING ORDERS: 1
TOTAL SESSIONS: 361056
TOTAL ORDERS: 349
TOTAL SALES: $23,370.09

HOST STATISTICS

TOTAL HOSTS: 6234
PENDING: 6
APPROVED: 5095
DECLINED: 1133
TOTAL COMMISSIONS: $3,235.60

MERCHANT STATISTICS

MERCHANTS: 17
HOST RELATIONSHIPS: 10761
LINKS: 22713
REVENUE: $16,188.74

UNTENDED ORDERS

GATEWAY LEARNING CORPORATION	1512	9/12/99 3:07:36 PM	OK
MPC MARKETING, INC.	1468	9/2/99 5:08:19 PM	OK
MPC MARKETING, INC.	1469	9/2/99 6:29:06 PM	OK
MPC MARKETING, INC.	1478	9/4/99 4:48:16 PM	OK
MPC MARKETING, INC.	1480	9/4/99 8:32:31 PM	OK
MPC MARKETING, INC.	1482	9/5/99 11:31:36 AM	OK
MPC MARKETING, INC.	1486	9/7/99 10:16:18 AM	OK
MPC MARKETING, INC.	1501	9/9/99 11:56:57 PM	OK
MPC MARKETING, INC.	1507	9/11/99 9:24:40 PM	OK
MPC MARKETING, INC.	1509	9/12/99 9:10:56 AM	OK

RETURNS

NEW:3
CANCELED: 2
RETURNED: 4

FIG.20

470
HOST
ADMIN
MENU
HostAdmin.asp
VIEW
REPORTS
2105
REPORT MENU
MerchantReportMenu.asp
2110
2114
CRITERIA
2118
CRITERIA
2120
2130
SUMMARY
RevenueSummary.asp
2127
CRITERIA
MONTHLY STATEMENT
HostStatement.asp
CRITERIA
SELECT
2125
2135
DETAIL
RevenueDetail.asp
2150

FIG.21

2200
HOST WEB PAGE WITH COMMERCE OBJECT LINK
LINK ERROR
2205
LINK ERROR LinkError.asp
2230
NAVIGATE CATALOG
2210
LINK ERROR
SHOPPING PAGE Shop.asp
2215
SESSION ERROR SessionError.asp
2224
VIEW MERCHANT
VIEW ABOUT INFO
ADD TO CART xt_ProcessAdd.as p
VIEW MERCHANT INFORMATION MerchantInfo.asp
VIEW ABOUT INFORMATION
2222
FROM ANY PAGE
2240
SEARCH PRODUCTS
VIEW SHOPPING CART
2250
2212
PRODUCT SEARCH DisplaySearch.asp
CHECK OUT
2260
VIEW SHOPPING CART ShoppingCart.asp
SEARCH AGAIN
UPDATE QUANTITIES xt_EditShoppingCart.as p
2262
BILLING INFORMATION Checkout_Billing.asp SSL
SHIPPING INFORMATION Checkout_Shipping.asp SSL
CONFIRM CHECKOUT INFORMATION Checkout_Confirm.asp SSL
2266
2226
PRIVACY STATEMENT PrivacyInfo.asp
SECURITY STATEMENT SecurityInfo.asp
2228
2264
GENERATE ORDER XT_Checkout.as p SSL
DISPLAY RECEIPT Confirm.asp SSL
2268
FROM ANY PAGE
FROM ANY PAGE

FIG.22

MERCHANT MANAGER Admin.asp
2300
MAINTAIN ACCOUNT INFORMATION
2305
2310
MAINTAIN BASIC INFORMATION MerchantBasics.asp
SAVE MerchantBasics_xt.asp
2350
MAINTAIN SHIPPING OPTION ShippingOption.asp
SAVE ShippingOption_xt.asp
2320
MAINTAIN MERCHANT CONTACTS MerchantContacts.asp
SAVE MerchantContacts_xt.asp
2360
MAINTAIN SHIPPING TABLE ShippingTable.asp
SAVE ShippingTable_xt.asp
MAINTAIN PRODUCT DEFAULTS ProductDefaults.asp
SAVE ProductDefaults_xt.asp
2330
MAINTAIN TAX SCHEDULE TaxSchedule.asp
SAVE TaxSchedule_xt.asp
2370
MAINTAIN PAYMENT INFORMATION MerchantPayment.asp
SAVE MerchantPayment_xt.asp
2340

FIG.23

2400
EDIT
PRODUCTS & CATALOGS
ProductList.asp
SELECT
MERCHANT
MANAGER
2300
2440
MANAGE CATALOG
AND CATEGORIES
ManageCatalog.asp
2444
CATALOG
NAVIGATION
CRITERIA
BY
2442
CATALOG
2405
2455
SAVE
xt_MaintainCategory.asp
ADD/EDIT/
REMOVE
2450
MAINTAIN
CATALOG/CATEGORY
MaintainCategory.asp
EDIT
VIEW
2422
2420
MAINTAIN
PRODUCT
MaintainProduct.asp
SAVE
ADD
ATTRIBUTE
2426
2410
VIEW PRODUCT
AS IN STORE
ShowProduct.asp
CREATE A NEW
ATTRIBUTE
AddAttribute.asp
2428
SELECT
2415
VIEW PRODUCT
ADDITIONAL INFORMATION
ShowAddInfo.asp
SAVE
xt_MaintainProductAttribut
e
2435
SAVE OR CANCEL
xt_MaintainProductAttribut
e
ADD/EDIT/REMOVE
ATTRIBUTES
MaintainProductAttribute.asp
2430

FIG.24

2300
MERCHANT MANAGER Admin.asp
VIEW REPORTS
2505
REPORT MENU MerchantReportMenu.asp
2510
2514
2518
CRITERIA
CRITERIA
2520
2530
SUMMARY RevenueSummary.asp
2527
CRITERIA
MONTHLY STATEMENT MerchantStatement.asp
CRITERIA
SELECT
2525
2535
DETAIL RevenueDetail.asp
2550

FIG.25

2300
MERCHANT MANAGER Admin.asp
2600
MERCHANT HOST RELATIONSHIP MerchantManageHost.asp
SELECT A HOST SHOW CATALOG IN HOST LOOK AND FEEL
2610
2620
HOST HOME URL www.hostURL

FIG.26

ATTORNEY DOCKET NO. 14103.0001

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

(X) Original () Supplemental () Substitute () PCT

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am an original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **"AFFILIATE COMMERCE SYSTEM AND METHOD"**, which is described and claimed in the specification

(check one) [] which is attached hereto, or
[X] which was filed on September 17, 1999, as United States Application No. 09/398,268 and with amendments through (if applicable), or
[] in International Application No. PCT/, filed , and as amended on (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information known by me to be material to the patentability of the claims of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code §119 (a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed:

PRIOR FOREIGN APPLICATIONS: (ENTER BELOW IF APPLICABLE)			PRIORITY CLAIMED (MARK APPROPRIATE BOX BELOW)	
APP. NUMBER	COUNTRY	DAY/MONTH/YEAR FILED	YES	NO

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

APPLICATION NUMBER	**FILING DATE**
60/100,697	September 17, 1998

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose all information known by me to be material to the patentability of the claims of this application as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION SERIAL NO.	FILING DATE	STATUS (MARK APPROPRIATE COLUMN BELOW)		
		PATENTED	PENDING	ABANDONED

I hereby appoint the following attorneys and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

William H. Needle	Reg. No. 26,209	Jacqueline M. Hutter	Reg. No. P-44,792
Sumner C. Rosenberg	Reg. No. 28,753	Matthew D. Josephic	Reg. No. 43,699
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Gregory J. Kirsch	Reg. No. 35,572	Janice A. Kimpel	Reg. No. 42,734
Gwendolyn D. Spratt	Reg. No. 36,016	Tina W. McKeon	Reg. No. 43,791
Nagendra Setty	Reg. No. 38,300	Mary L. Miller	Reg. No. 39,303
D. Andrew Floam	Reg. No. 34,597	Mark A. Murphy	Reg. No. 42,915
William R. Johnson	Reg. No. 32,875	Lance D. Reich	Reg. No. 42,097
Allan G. Altera	Reg. No. 40,274	Lisa A. Samuels	Reg. No. 43,080
Bryan W. Bockhop	Reg. No. 39,613	Clark G. Sullivan	Reg. No. 36,942
John L. Capone	Reg. No. 41,656	Lawrence A. Villanueva	Reg. No. 43,968
Kean J. DeCarlo	Reg. No. 39,954	Mitchell G. Weatherly	Reg. No. 40,864
LaVonda R. DeWitt	Reg. No. 40,396	Tim T. Xia	Reg. No. P-45,242

Address all telephone calls to Gregory J. Kirsch at telephone no. (404) 688-0770.

Address all correspondence to:

Gregory J. Kirsch, Esq.
NEEDLE & ROSENBERG, P.C.
Suite 1200, The Candler Building
127 Peachtree Street, N.E.
Atlanta, Georgia 30303-1811

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor: D. Delano Ross, Jr.

Inventor's signature: Date: 11/22/99

Residence: 1040 Vinebrook Lane, Alpharetta, Georgia 30005

Post Office Address: 1040 Vinebrook Lane, Alpharetta, Georgia 30005

Citizenship: U.S.A.

Full name of second inventor: Daniel D. Ross

Inventor's signature: Date: 11/22/99

Residence: 1859 Tennille Court, Dunwoody, Georgia 30338

Post Office Address: 1859 Tennille Court, Dunwoody, Georgia 30338

Citizenship: U.S.A.

Full name of third inventor: Joseph R. Michaels

Inventor's signature: Date: 11/22/99

Residence: 4660 East Forest Peak, Marietta, Georgia 30066

Post Office Address: 4660 East Forest Peak, Marietta, Georgia 30066

Citizenship: U.S.A.

Full name of fourth inventor: William R. May

Inventor's signature: Date: Nov. 22, 1999

Residence: 1394 Emory Road, N.E., Atlanta, Georgia 30306

Post Office Address: 1394 Emory Road, N.E., Atlanta, Georgia 30306

Citizenship: U.S.A.

Full name of fifth inventor: Richard A. Anderson

Inventor's signature: Date: Nov 22 1999

Residence: 4893 Country Cove Way, Powder Springs, Georgia 30127

Post Office Address: 4893 Country Cove Way, Powder Springs, Georgia 30127

Citizenship: U.S.A.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Ross, D. Delano Jr. et al.	Art Unit	:	2445*
Serial No.	:	________________	Examiner	:	Winder, Patrice L.*
Filing Date	:	10/18/2010	** In parent application S.N. 11/343,464*		
Title	:	Methods of expanding commercial opportunities for internet websites through coordinated offsite marketing			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – October 18, 2010

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

Assignee discloses the references listed on forms PTO-1449 and PTO/SB/08b attached to this document. All references listed were cited in parent application Serial No. 11/343,464, therefore, pursuant to Office rules, copies of the references are not included.

If the Office has any questions, please feel free to contact applicant's undersigned attorney of record.

Respectfully submitted,

DDR HOLDINGS, LLC

by its attorney

Dated: October 18, 2010

/Louis J. Hoffman/
Louis J. Hoffman
Reg. No. 38,918

LOUIS J. HOFFMAN, P.C.
11811 North Tatum Boulevard
Suite 2100
Phoenix, Arizona 85028
(480) 948-3295

*Copy for CON Application Filing - 10/18/2010

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	D. Delano Ross, et al.	Art Unit	:	2145
Serial No.	:	CON of 10/461,997	Examiner	:	Cardone
Filed	:	01/30/2006			
Title	:	Methods of Expanding Commercial Opportunities for Internet Websites Through Coordinated Offsite Marketing			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF OWNERSHIP AND ASSIGNEE'S POWER OF ATTORNEY

Dear Sir:

The company that is the assignee of all rights under this patent application hereby assumes prosecution of this application pursuant to 37 C.F.R. §§ 3.71 and 3.73 and MPEP § 324, to the exclusion of the inventors.

DDR Holdings, LLC, a Georgia limited liability company, certifies that it is the assignee of the entire right, title, and interest in this patent application, identified in the caption, by virtue of (1) an assignment of application Serial No. 09/398,268, now U.S. Patent No. 6,629,135, from the inventors to Nexchange Corporation, dated 11/22/1999 and recorded at Reel 010466, Frame 0884, (2) followed by an assignment from Nexchange Corporation to Daniel D. Ross, dated 4/15/2003 and recorded at Reel 014366, Frame 0446, (3) followed by an assignment from Daniel D. Ross to DDR Holdings, LLC, dated 6/3/2003 and recorded at Reel 014366, Frame 0484.

The first assignment transferred rights to this application as well, because it assigned "the entire right, title and interest" in "any subsequent application claiming priority to [the parent] application ...." The second and third assignments transferred rights to this application as well, because it assigned "the entire right, title and interest" in "all ... continuations ..." of application Serial No. 09/398,268.

The undersigned states that he is an officer of DDR Holdings, LLC, and is empowered to act on behalf of that entity.

Revoking all previous powers of attorney, assignee hereby appoints the practitioners at

Customer No. **26362**

who are presently Louis J. Hoffman, Reg. No. 38,918 and Edwin A. Suominen, Reg. No. 43,174, as my attorney(s) or agent(s) to prosecute the application, and to transact all business in the United States Patent and Trademark Office connected therewith.

Please record the following for identification purposes:

Attorney Docket No. **23**

Direct telephone calls to:	Louis J. Hoffman (480) 948-3295
Send correspondence to:	Louis J. Hoffman LOUIS J. HOFFMAN, P.C. 14614 North Kierland Boulevard, Suite 300 Scottsdale, Arizona 85254

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectully submitted,

DDR HOLDINGS, LLC

Dated: January 30, 2006

By: ______________________
Daniel D. Ross
Its: Managing Director

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	Methods of expanding commercial opportunities for internet websites through coordinated offsite marketing
First Named Inventor/Applicant Name:	D. Delano Ross, Jr.
Filer:	Louis J. Hoffman/Donald Hertz
Attorney Docket Number:	23-CON3

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	82	82
Utility Search Fee	2111	1	270	270
Utility Examination Fee	2311	1	110	110
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
	Total in USD ($)			**462**

Electronic Acknowledgement Receipt

EFS ID:	8649813
Application Number:	12906979
International Application Number:	
Confirmation Number:	1141
Title of Invention:	Methods of expanding commercial opportunities for internet websites through coordinated offsite marketing
First Named Inventor/Applicant Name:	D. Delano Ross, Jr.
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	23-CON3
Receipt Date:	18-OCT-2010
Filing Date:	
Time Stamp:	21:08:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$462
RAM confirmation Number	6565
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Transmittal of New Application	10-10-18-DDR-CON3-app_trans.pdf	82357 92c8add889d2d9acff9af9fed730df7ce16db106	no	1
Warnings:					
Information:					
2		Parent_Specification.pdf	3214446 7ada7c35e3955f395bd8caf71dac004be4fa9394	yes	56
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Specification		1	43	
	Claims		44	55	
	Abstract		56	56	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	Drawings.pdf	927791 02ad9e30078846238d30d7f0a9ccec8e4a0c0839	no	24
Warnings:					
Information:					
4	Oath or Declaration filed	Declaration-copy_from_parent.pdf	204537 bde5bec4fc2a74a884dd55bac36cab45a9dbab21	no	4
Warnings:					
Information:					
5	Transmittal Letter	10-10-18-DDR-CON3-IDS_Cover.pdf	21119 20cd5c4061fcb3c7f76c2926e55e8d2160a10a19	no	1
Warnings:					
Information:					
6	Information Disclosure Statement (IDS) Filed (SB/08)	10-10-18-DDR-CON3-IDS.pdf	1083211 d7d1803f0724aebad9a74e4df35665a7b91737db	no	18
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
7	Preliminary Amendment	10-10-18-DDR-CON3-Prelim_Amend.pdf	45325 871458c069f034491f86fc7f0c4b9918f93d6ccd	no	7
Warnings:					
Information:					

8	Nonpublication request from applicant.	10-10-18-DDR-CON3-nonpub_request.pdf	48257 aa314d6304454ff51a2bf464e4671bb97505db26	no	1
Warnings:					
Information:					
9	Power of Attorney	Cert_Owner_POA-Copy_from_parent.pdf	102464 c6f99509ed3fc7dad022e2c1837fbcd28741a79a	no	2
Warnings:					
Information:					
10	Fee Worksheet (PTO-875)	fee-info.pdf	33041 4c43c18b0f5e0ae872d2607c0aaa161a832655f4	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	5762548		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (12-04)

Date: **10/18/10**

Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/906,979

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	82		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	270		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	110		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =		x$26		OR	x$52	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*	x$110			x$220	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $270 ($135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			195			390	
			TOTAL	462		TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

		(Column 1)		(Column 2)	(Column 3)			OR		
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Paten and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.