

So, in this future world, the company's sales director, for example, can use their lap-top computer to check availability via access to one of the GDSs that has a Web site. They enter their travel requirements and from an availability listing chooses a flight. The system checks that the fare and class are within the company's travel policy and that all required fields have been entered for future management information purposes. Their personal travel preferences are stored in the system on their profile and the system uses this to make a seat reservation. Now the fun starts.

There are clear rules that the airlines have agreed regarding the choice of ticketed carrier. The ticketed carrier is of course the airline who will issue the ticket and collect the fare amount via the BSP (see Chapter 7 for more details on BSP). Even though the ticket may be issued electronically, it needs to have a designated ticketing carrier. All right, let's assume that our GDS chooses the correct ticketed carrier. The next decision to be made by one of the systems involved in this future world scenario is who will collect the funds for the ticket. Airlines do not usually collect funds for ticket sales direct from passengers. This is usually done via the BSP. So, whereas in today's world the ticket would usually be allotted to a travel agent's IATA number, in our scenario, this would not be available because no travel agent is involved. So, now we come to the first issue: 'Who will collect the funds for direct ticket sales when no travel agent is involved?'

You might think this is simple – it should be the ticketed carrier. Well, if it is to be the ticketed carrier then consider this. Depending upon the route flown and the first carrier on the ticket, the ticketed carrier could potentially be any of the world's airlines. So, assuming the company's air travel is quite extensive, it will need to expect payment requests from a large number of airlines, i.e. each ticketed airline flown by the company's employees. From the airlines' viewpoint, each airline will need to send out payment requests to many different companies with all the associated payment processing functions that this will involve, e.g. sending out reminders, reconciling payments received versus payments due, controlling cash flows and outstanding receivables, vetting the credit worthiness of companies and, finally, coping with

company liquidations and bad debts. In other words an airline's worst nightmare.

OK, so let's assume that instead of the ticketed carrier having to collect the funds from the company, each company will negotiate with a single airline to produce all its tickets and collect all funds. This airline would then be burdened with quite a substantial administrative task. First of all, it would still have a number of company customers with whom it would have to deal direct. The airline would therefore be burdened with the same kinds of problems outlined above. Also, for the tickets that it issued on behalf of other airlines, it would enjoy a positive cash flow. However, would those other airlines be so happy. They would be carrying the passenger but would probably not receive payment until some time later. In other words they would be out of pocket for longer than at present. So, this scenario is unlikely to be acceptable by the airlines either.

Well, that just leaves us with the option of having some third party involved who will collect funds from the company and use the BSP system to settle ticketed carrier funds on a consolidated basis to each airline in IATA. Sounds familiar? The travel agent rears its head again. But what about the BSP organization itself? Couldn't it extend its clearing house role to include collecting payments from companies? Well, it's just possible but I don't think this is very probable. After all, BSP is owned by IATA, which is itself an airline association. Once again, the issue here is: 'Will the airlines want to get involved in payment collection from their customers?' I think that BSP has enough of a job collecting funds from a limited number of travel agents. Collecting funds from hundreds of thousands of companies would be a nightmare of even greater proportions.

This may sound like I have argued that disintermediation will not happen, at least not in the business travel air segment. However, that is not the real point. Although it seems there may continue to be a need for a travel agent, the role that the agent plays in the future will be quite different. In our future world scenario, the airlines will almost certainly not wish to pay the travel agent the current levels of commission just to act as a third party for BSP settlements. After all, in this future world virtually all the routine tasks are

undertaken by software. What added value has the travel agent contributed? Answer – very little; just the settlement function. Certainly nothing that would justify a percentage of the ticket value.

So, the travel agents of the future will have to derive their incomes from some other source. This comes back to the question of added value. The travel agents' added value is their consultancy advice. This expert advice is not always needed for every trip. In the case of our fictitious company, the sales director did not need any advice – they simply booked their trip using their lap-top computer. However, there will no doubt be instances where they will need to ask an expert what the best airline and route would be for a more complex trip. This is where the travel agents come into the picture and is an area where they can develop a niche for themselves. The agents should be able to apply expertise to help the traveller plan the trip and select the most appropriate airline, route, departure timing, departure airport and other travel arrangements. For this consultancy advice, the travel agents can expect to be paid. The problem for the travel agents is that they claim to have been doing this for some time and at no apparent charge to the customer (indeed, in most cases the customer has actually had money back from a share of the agents' commission). Travel agents will therefore need to work very hard to develop true consultancy expertise. This will need to be delivered to such a high standard that the customer will be convinced that it is worth paying for.

But value can be added in other ways. It can even be added by semi-intelligent machine-based processes. Some Internet applications already use a special piece of sophisticated software called an 'Intelligent Agent' (incidentally, the word 'Agent', as used here, has nothing to do with travel agents – rather it is an entity that acts for the user's own interests). An Intelligent Agent falls into that class of computing known as software robots. These are clever computer programs that understand user's requirements and search the Web for items that appear to match what the user is looking for. It is quite possible that Intelligent Agents will form an integral part of new Web sites operated by the new travel intermediaries. Intelligent Agents should be able to understand what a consumer is looking

for; for example, a holiday to Indonesia costing less than a certain amount, selected from four or five preferred airlines with departures from London Gatwick. Many other more detailed requirements and preferences could be included. The Intelligent Agent should then be able to search the Web for sites that contain the kinds of holidays that match these requirements and present them to the user. In other words, they do all the hard graft of signing on to relevant Web sites, searching them, recording the responses, signing off, going to the next site via a search engine and so on. However, despite the distinct possibility that they may find a niche in the travel industry of the future, I think it will be a long time before Intelligent Agents begin to replace travel agents.

So, not the end of the travel agents, but a radical shift in their role. Similar parallels can be drawn within the leisure side of the business. Straightforward holidays can be booked directly, possibly using one of the new distribution channels, such as the Internet. However, some people and some more complex holiday requirements will demand more specialist advice. Here, once more, there is a role for the travel agent. However, it remains to be seen how the travel agents will derive their income from this situation. Will holiday-makers expect to pay for expert advice from their travel agent? Will tour companies pay travel agents to offer advice on their products only? It appears possible that the environment could develop along similar lines to the financial services industry where agents are either tied to a company or offer independent advice on all companies. Although this appears to be getting away from the subject of IT in travel and tourism, these potential shifts in the underlying structure of the industry are being driven by rapid technological change.

TOUR OPERATORS

Tour operators are intermediaries between suppliers and either travel agents or consumers. They purchase products and services from travel suppliers and package them into a product that they market to consumers. So, what opportunities are there for using the Internet to provide electronic packaging mechanisms that could bring about the demise of tour operators as intermediaries? Well,

I guess like many of the other disintermediation issues, it is not quite as black and white as all that.

Undoubtedly, there are some consumers who are adventurous enough to use the Internet to construct their own packages. In fact, there are several software products around that support this very function. It is only a matter of time before they are available on the Internet. Say, for instance, that an Internet site was available that enabled consumers to: (a) browse an inventory of cheap hotel deals in a particular resort area; (b) browse a data base of associated seat-only air services; and, finally, (c) add a few optional sightseeing trips to their itineraries. At the end of such a process, the consumers would have assembled their very own personalized packaged tours (also known as an Independent Tour (IT)). It would only remain for them to print the itineraries, pay for the services and receive their documentation either through the mail, at the airport or electronically. All without purchasing a packaged tour from a tour operator – or is this really the case?

Why couldn't this kind of Internet site be run by tour operators? After all, they are the ones that have the relationships with the hotels and other services in the destination areas; and they often have their own charter airlines to these same destinations. So, maybe the only function that is at risk due to electronic commerce, is the packaging of these individual components for a consumer. Well, when you think about it, this is the very area that gave rise to most of the current problems for tour operators. Problems such as the decision process required to guess what arrangement of components will make a package that appeals to the widest number of consumers. The package holiday companies would like nothing better than for everyone to select their own combination of travel products from their inventories. Think of the massive reductions in brochure printing costs, advertising and agency commissions that this could bring.

However, I think it will be a long time before sufficient numbers of consumers become this sophisticated and confident to have a real impact on tour operators. However, it will undoubtedly happen, the only question is: 'When will it happen?' So, tour operators need to consider their strategic options and start experimenting with this new technology if they are to be capable of adapting to the new

electronic business world of tomorrow. In fact, a very good book that examines this issue in more detail, as well as several others in the area of tour operations in the UK and Germany, is published by DeutscherUniversitats Verlag by Karsten Karcher entitled *Reinventing the Package Holiday Business*.

DISTRIBUTION SYSTEMS

GDSs and HDSs are intermediaries between travel suppliers and travel agents. The GDSs have their origins in the airline CRSs that were themselves originally designed to enable airline sales staff to sell seats on their flights. Over the course of time they were first distributed to travel agents, then enhanced to include access to hotels and car rental companies and, finally, consolidated with multiple CRSs to form what we now call GDSs. Finally, the interconnection technology that linked GDSs to hotels was vastly improved by means of specialist industry switches called HDSs. What is the next stage in their evolution? As you will see from the remainder of this chapter, many of them have developed an Internet interface of some form or another. Some of the HDSs have broken new ground by turning the tables on GDSs and offering consumers and travel agents their own hotel-based Web booking services that also include GDS access. Generally speaking, access paths to the consumer via the World Wide Web at present keep the travel agent firmly in the loop – but for how long? It seems quite possible that new intermediaries can offer a whole range of booking services to consumers without using GDS technology or travel agents. But, first of all, let's consider the future of GDSs from an airline's viewpoint.

GDSs

An airline's CRS is quite capable of handling the bookings of seats not just for its own flights but also the flights of virtually every other airline. The precise functionality of how CRSs handle reservations involving other airlines is governed by their respective levels of participation (see Chapter 4 for more details on this). Airlines must pay a fee for their participation in GDSs and this is usually levied by means of a booking fee. Again, this is one of the major components of their distribution

costs that I analysed in more detail in the preceding section: and because distribution costs have a direct and substantial impact on profitability levels, any opportunity to reduce them needs to be carefully considered by airlines.

The Internet offers airlines a direct sales channel to consumers. Many airlines have developed their own sites, some of which also support booking and payment functions. The key question is: What effect will this have on their participation in GDSs? It could well be that as time goes on, a substantial proportion of their bookings could be derived from their own Internet sites or indeed from the new intermediaries (see next section for more details on the new intermediaries). Handling bookings directly via this channel has the dual benefit of: (a) eliminating GDS booking fees, and (b) eliminating travel agent commissions. This is a very sensitive subject for airlines and one on which they are unlikely to be very forthcoming. The reason for this coyness is that dangerous talk costs revenue. If airlines were thought to be considering this path they would disenfranchise their GDS as well as their travel agency relationships.

However, it is nevertheless the case that a direct Web site offers significant benefits that cannot afford to be ignored by the airlines. This explains why these sites are nearly all currently described as being quite separate from the main distribution channel and in many cases require the consumers to collect their tickets from their nearest travel agencies. But not all such sites require the consumer to do this. Some offer full payment processing with ticket collection on departure. The point is, it is rather like an insurance policy. Having an Internet site allows airlines to become familiar with the technology, to build a loyal client base (albeit a small one initially) and to establish some small degree of independence from both the GDSs and travel agents.

Now, let's consider the situation sometime in the future when most airlines have developed their own Web sites for information and booking purposes. Let's also further assume that many more people have access to the Internet and are using it heavily. Consider the situation from a consumer's viewpoint. Take someone who wants to fly to some foreign destination. Which airline Web site will they access? One might start with the national

airline of the destination country. However, with competition and deregulation, national airlines are rapidly becoming a thing of the past. Even if they weren't, they do not necessarily always offer the cheapest or the best deals. The poor old consumer could, in this scenario, spend a great deal of time visiting one airline site after the other, looking for a suitable deal.

Far better surely, to have a special kind of airline search engine into which you enter your basic requirements and it finds several airlines that have deals to suit your needs. Again, doesn't this sound familiar? The old GDS concept rears its head once again. However, the guise is somewhat different. Instead of this new generation GDS being the main switching point between the airlines and other travel service companies, it is much more akin to an Internet search engine. It would need all the functionality provided by a search engine but with more sophisticated links to other sites, principally airline sites. These links would enable it to collect, disseminate and present options to consumers that would allow it to direct them to the airline best suited to their needs.

But this is not a scenario that the airlines particularly relish. It takes away the consumer influencing part of the buying decision process and vests it in a separate company over which the airlines have little or no control. Then there is the bias rules and regulations to be considered. Who would police these new Internet-based airline search engines? Enforcing rules on Internet service providers is a tricky business that so far has not been tackled successfully. How, for instance, could the EU enforce its unbiased rules for GDSs on an airline search engine located in say, Malaysia?

However, the stakes are high in this game. If an airline can develop an excellent Web site that proves highly successful and popular with consumers then it is going to generate a substantial amount of revenue: and this revenue is potentially free from GDS booking fees and travel agent's commission. Once this begins to happen, the writing is on the wall for the GDSs. But don't let's forget that most of the GDSs are currently owned by airlines. Having said this, one can't help but notice the gradual divesting of GDS ownership by airlines. American Airlines' parent company still

Room rate charged by hotel		100.00
Less:	Travel agent commission at 10 %	-10.00
	GDS booking fee	-3.55
	Hotel switch processing fee	-0.50
	Booking service provider (e.g. representation company or hotel chain headquarters)	-9.00
	Credit card service fee	-3.50
	Corporate rate discount on room	-10.00
Total deductions		-36.50
Hotel income		63.50

Figure 5.1 The economics of hotel bookings

owns over 50 per cent of Sabre, but this is a lot less than its total ownership situation as of a few years ago; and there are several other examples where airlines can be seen to be reducing or selling their equity investments in GDSs. So, quite frankly, who knows what will happen? I think it all depends simply upon how successful the new airline Web sites are. Only time will tell.

HDSs

Now, what about the view of GDSs from the hotel industry's viewpoint; and in particular, the view of HDSs and their hotel owners. At present around 28 per cent of all hotel bookings are generated by travel agents. In the USA, 80 per cent of these travel agency hotel bookings are made using GDSs. In Europe the figure is far lower at 35 per cent and in Asia Pacific it is just 15 per cent. The other 72 per cent of hotel bookings are generated by consumers themselves either via toll free telephone calls to specialist reservation centres or by direct contact with the hotel. To illustrate the pressures for disintermediation from the hotel industry's point of view, let's take a somewhat extreme example. Take a hotel booking that is worth US\$100. Let's first of all assume that the booking was made by a business traveller who used a travel agent. The agent booked the room via a GDS and the customer paid using their credit card. The economics look something like those shown in Fig. 5.1.

At 36.5 per cent, the overheads of this booking channel appear excessively high from the hotel's

viewpoint. Even if we consider direct bookings received via the toll free telephone service channel, the hotel is still looking at some horrendous costs of sale. It is estimated that voice calls made by consumers to toll free telephone booking centres average between US\$10 and 15 with a frequently reached upper level of US\$30. Clearly, there are enormous pressures on hotels to seek alternative distribution channels for their products. The Internet is one such channel and companies like TravelWeb and Thisco offer a far cheaper route to market than the classical GDS/travel agent combination that has been the established way of doing things for so long. Many hotels already participate in HDSs like Thisco and to use this as a platform for bypassing the GDSs and ultimately, the travel agent, is an attractive scenario. If we take a hotel with 100,000 bookings per year and assume that it could save US\$13.50 per booking then this could generate US\$1.35 million each year. Now, I accept that a hotel is unlikely to be able to realize quite such a large saving, at least not in the early years of this new distribution scenario. But the important point is – this is the target that seems to be attainable by hotels, and it helps explain the rationale and pressures that are the principal driving forces behind GDS disintermediation.

TOURISM

Tourist offices, often also known as destination service organizations, are intermediaries as well.

They are intermediaries between national tourism organizations, which are often sponsored by governments or at least local governments, and remote tourist offices in overseas locations. The general pattern here is that the central government tourism organizations are charged with developing and executing marketing plans that promote their country or region overseas. This usually involves: (a) building a data base of national information and supplier details, and (b) distributing this to overseas tourist offices where information is made available to consumers and travel companies in a pre-defined area. These overseas offices receive local enquiries either by telephone, mail or from walk-in clients. Enquiries are serviced by access to the reference data and by distributing booklets and pamphlets as required (see Chapter 2 for more details on how IT is used to support tourism in this way).

It is the Internet that poses disintermediation in tourism. This arises from the growing number of Web sites devoted to tourist information. These sites are becoming quite sophisticated and many contain all the information that potential inbound visitors and travel organizations would want to know. Those sites that also offer on-line booking of accommodation services and events are particularly attractive to end users in other countries. The key question here is: To what degree will these Web sites impact local tourist offices? It is highly unlikely that these sites will cause the ultimate demise of overseas tourist offices, but it could have a major bearing on the size and distribution of offices.

The new intermediaries

I have used the term 'new intermediaries' to encompass any Internet site that offers a full range of travel services directly to consumers. In some cases these new intermediaries are backed by an existing distributor of one or more major travel products. However, what makes them a new intermediary in my terminology is that they offer a range of other travel products, not all of which are provided by the site's main sponsor. In other words, they may be viewed as an electronic travel agent offering a wide range of travel services and travel-related information.

It is also the case that some of these new intermediary sites use travel agents for post-sales customer servicing. The fact that they use travel agents in this way does not dilute their potential for affecting disintermediation, it does not make them any less important to the direct distribution of travel and tourism, nor does it mean that they will not have a significant impact on the classical travel agency. The kind of travel agent that has formed an alliance with these new intermediaries is just the type of agent that I think we will see more of in the future. Those agents that stick rigidly to so-called tried and tested methods based purely on face-to-face high street sales are the ones most likely to be affected by these new intermediaries.

EXPEDIA

Not many people know that Microsoft is a travel agent – but it very definitely is. Its Internet site, branded Expedia (Fig. 5.2), is one of the most important examples of the new generation of travel intermediaries. So, I would encourage any travel agents who do not think the Internet will have an impact on their businesses to take a good look at Expedia. It represents what is arguably the first real electronic travel agency aimed directly at consumers. It is a Web site that was launched in the USA on 22 October 1996 and is already highly successful. In the early months of its launch it sold an average of 1,000 air tickets each day generating over US\$1.25 million worth of air travel turnover per week. Along with this substantial volume of electronic air sales goes a significant amount of related hotel and car bookings. In fact the proportion of non-air sales made via Expedia is higher on average than the typical business profile of USA travel agents; and with a 20 per cent growth rate, Microsoft's business is already beginning to make serious inroads into the USA travel industry. At the time of writing this book, Expedia was only distributed to domestic consumers in North America. So, although anyone with an Internet connection could access Microsoft's USA site, only consumers actually resident in the USA and Canada were allowed to participate in the transactional booking functions of Expedia. However, Microsoft is now implementing its Expedia

service outside the USA with other major countries including the UK, Germany and Australia.

So, it is evident that Microsoft has entered the travel business in a very serious way. Its Web site, branded Expedia, incorporates a vast amount of travel-related information that is available in both HTML pages of text and graphical images recorded in full colour. This information is stored in several relational data bases that are indexed and accessible via powerful search engines. Expedia is also linked to the Worldspan GDS via a booking engine interface that provides consumers with access to the full range of published scheduled air flights, hotels and car rental services. All these travel products and services are available via a very user-friendly front-end interface that may be accessed using most secure Web browser software products including of course, Microsoft Explorer.

Microsoft's commitment to its travel business is characterized by the 120 staff that it dedicated to Expedia in 1997 and by its possession of an IATA licence. Microsoft is therefore a fully fledged travel agency in its own right and makes regular payments for air sales via the USA equivalent of IATA's BSP, just like any other USA travel agency. At present, for purely logistical reasons, Microsoft has outsourced its USA travel servicing functions to World Travel Partners (WTP), a USA travel group based in Atlanta, Georgia. WTP provides Microsoft with services that include the issuance of travel documents for Expedia customers, including air tickets. These are mailed to customers' home addresses using the regular USA Mail postal service or special courier delivery services as necessary, e.g. Federal Express. However, with the increasing use of electronic ticketing (see Chapter 3), this aspect of WTP's service may well become less important as paper tickets decline in use. WTP also provides an after sales service, or post-reservations support function, that provides customers with classical travel agency services delivered via the telephone and electronic mail.

Travelling with Expedia

Microsoft's strategy on post-reservations support for international markets seems to be based very much on the USA model. In each country or region, a travel company is selected as a customer service

partner. In the UK, for example, the travel partner is A. T. Mays. A. T. Mays has worked with Microsoft to develop a travel support function that includes several interesting facets (Fig. 5.3). Besides providing post-reservations support and fulfilment operations, A. T. Mays has built a data base of consolidator air fares and other travel-related information on a Web server that is located on the Microsoft network in Redmond Washington where Microsoft houses its headquarters and operations centre. It is these kinds of partnerships that are behind the real power of Expedia. Let me illustrate this by walking you through how a consumer in an international area (I've used the UK as an example here), interacts with Expedia to make their own travel arrangements.

Registration

To use Expedia for booking travel products, a consumer must first register themselves on the site. It is not compulsory to enter plastic card information, although this may be recorded and helps speed the booking process. A consumer may also elect to record their travel preferences within their own personal profile as part of the registration process. This enables the traveller's likes, dislikes and preferences to be entered automatically into booking fields at the appropriate time – a good example of Expedia's labour saving features.

General trip planning

Once registered, a consumer may browse the information stored within Expedia. This is an enormous data base of travel-related information that is maintained by Microsoft staff. Besides maintaining up-to-date information on destinations and all kinds of travel opportunities, Expedia also features chat sessions where a consumer can log-on to an electronic meeting place hosted by one or more experts in certain travel subject areas. The venue for these chat shows is published on Expedia and allows the consumer to choose when they wish to log-on and participate in the session. During a chat session, each participant's questions and observations are put to the host via a Forum Manager and are also distributed to all other consumers participating in the session. Microsoft uses full-time Forum Managers to provide its Expedia customers with expert travel consultancy on many

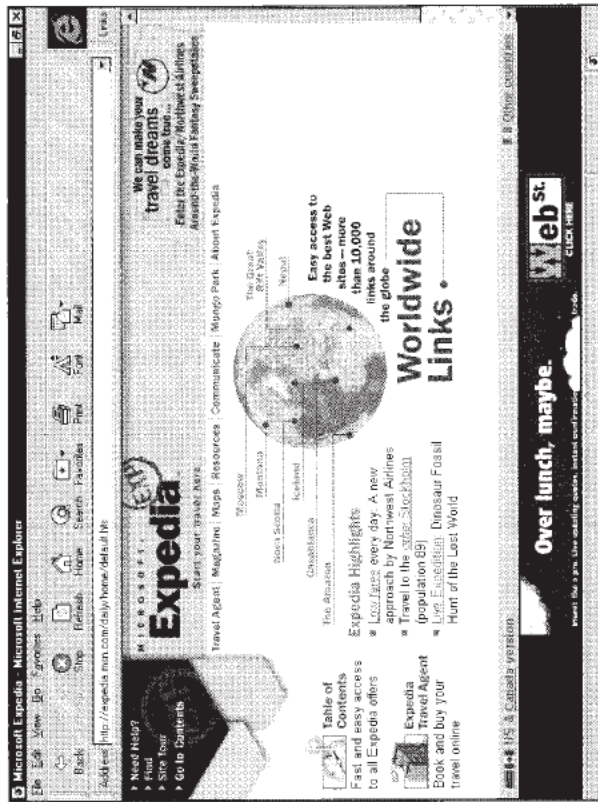


Figure 5.2 The Expedia home page (above)

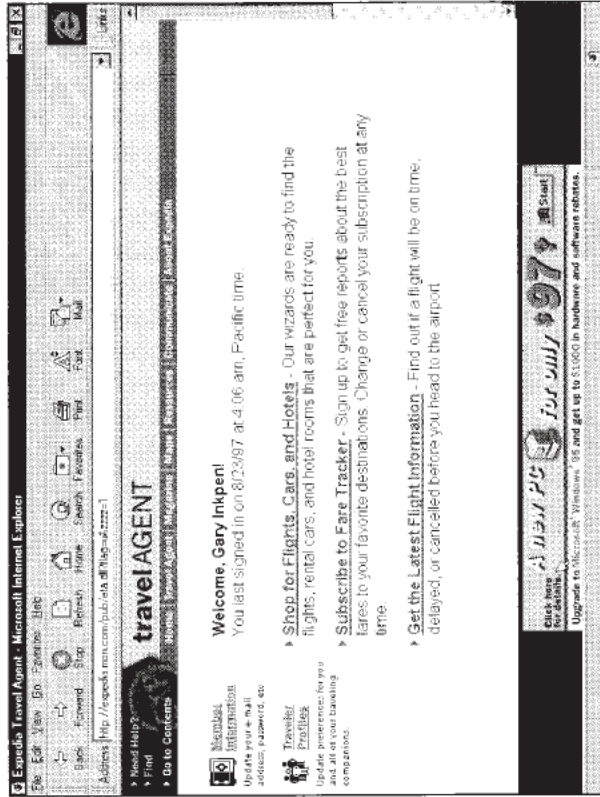


Figure 5.3 The Travel Agent page (above right)

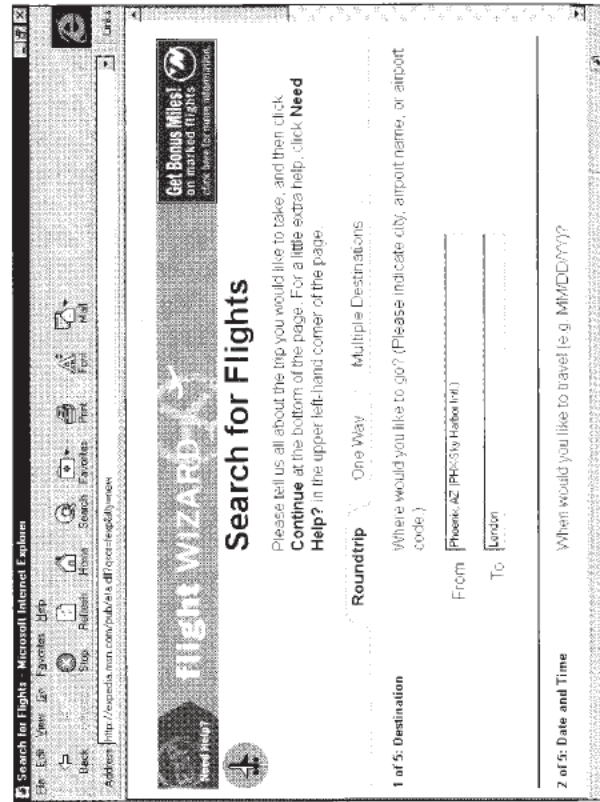


Figure 5.4 Flight Wizard

subjects and destinations. Much of the subsequent feedback and information distribution for these sessions is handled via electronic mail.

There are many general trip planning functions that are either part of Expedia or that may be found elsewhere within the Microsoft Web site. One of these is The World Guide. This presents the consumer with a simplified map of the world, divided into major regions. If a region is clicked, Expedia shows a more detailed map of the chosen region. Again, this shows a number of areas, each of which may again be clicked to show a lower level of detail. At the lowest level, textual information and pictures of famous places are shown. More information may be obtained by linking to another Microsoft site – the Encarta World Atlas On-line.

Another interesting tool available within Expedia's trip planning portfolio, is Mungo Park. This is a diverse collection of travel stories and information on the more far flung places of the world, which is branded by Microsoft as an adventure travel magazine. It even includes information on current and past expeditions to certain remote regions undertaken by specialist teams of explorers. Updates and reports on these expeditions can be viewed at any time. These often include dispatches transmitted from an expedition member's lap-top PC via a satellite link to the World Wide Web. Most of these dispatches are archived within the Mungo Park site for all to see.

Expedia's on-line data base pages make information-rich content directly available to the consumer. This can be a powerful way for a person to learn about a destination and plan their own itinerary. In fact, it is precisely the kind of information that people visit travel agents for. However, not only is it now freely available to anyone with an Internet connection but it can be obtained without the hassle associated with high street shopping; and what's more, it goes further than the average travel agent's capabilities. It can, for example, provide the more intrepid would-be holiday-maker with the kind of specialized information they invariably need to plan an adventure holiday in some far flung place; and adventure holidays are a growing sector of the travel market.

Once the consumer has decided on the kind of trip they would like to make, they select the

Expedia booking function in order to plan their trip in greater detail. The following sections describe how the major travel products are booked using Expedia. Each product selected by the consumer, whether it is booked or not, may be added to a personal itinerary file. The itinerary may be built-up over one or many Expedia booking sessions and is always available for viewing by the consumer. At the end of the booking process, it represents a detailed itinerary that may be printed using the consumer's own printer linked to their Internet browser PC.

Let's look at each of the main booking functions and products in more detail, starting with air travel which is supported using Expedia's Flight Wizard.

The Flight Wizard

Having decided upon an outline itinerary, the next step is for the consumer to do some detailed trip planning, obtain some prices and availability and then start to build a more detailed trip itinerary. Let's begin with the air travel options that are supported by Expedia's Flight Wizard (Fig. 5.4). In order to deter non-serious users and check a consumer's details versus their registration, Expedia requires the consumer's zip code, i.e. postal code, to be entered prior to processing a reservation. Next, the consumer enters the destination of the first leg of their trip. This may be expressed either in terms of a full city name, an abbreviated city name or an airport code. Expedia assumes that the consumer is travelling from their nearest home airport, although this may of course be changed. Next the date and desired departure (or arrival time) of the flight is entered. Finally, the consumer may choose the sequence in which Expedia will show their availability display. This may be either: (a) all flights in ascending sequence on price, or (b) all flights in sequence on the desired departure time and minimum flight time. All fields are presented to the consumer in the well-known Windows style that makes abundant use of drop-down lists, check boxes and radio buttons. This makes the reservation requirements easy for an untrained consumer to define accurately.

The next part of the process is, to my mind, one of the most powerful of all Web-based flight booking functions currently available on the

Internet. I'll therefore explain the steps that Expedia takes in order to show an availability display in a little more detail:

- **Build flight requirements** The consumer's flight requirements are checked and stored by Expedia within Microsoft's Redmond based travel Web server. Once the consumer requests an availability display of their stated itinerary, Expedia formulates a data base query that it sends to the travel Web server housing the air fares information built by A. T. Mays.
- **Assemble consolidated fare options** The travel Web server receives the request for availability and, first of all, queries the data base of consolidated air fares. It tries to find all fares on the data base that match the consumer's preferences for city pairs, dates, times and other details. All matches are assembled within the travel Web server. For each of the selected flights, an availability message is constructed and sent to the Worldspan booking engine (see also the separate section on Worldspan in this chapter).
- **Obtain flight availability** The Worldspan booking engine is used to obtain the availability of the specified flights. These will be very specific availability requests that specify precise classes of seat reflecting the consolidated fare contracts. All such flight details are returned to Microsoft's travel Web server along with associated flight operating details.
- **Build available flight display** The travel Web server then merges the information provided by the Worldspan booking engine into a list of flight details that match the consumer's stated requirements. The result of this query is a mini-data base of flight information built specifically for the consumer. It contains both contracted fares, i.e. consolidated fares, as well as scheduled fares.

This is an important feature that at present, is unique to Expedia. Most other booking engines show only the scheduled air fares for flights available from GDSs. However, Expedia also includes specially negotiated lower priced fares and their availability.
- **Show flight options** A summary of the available flights that match the consumer's stated

requirements is then presented on a Web page with a scrollable list in the sequence requested. In the case of a listing by fare price, it shows the cheapest flights first, which are usually those featuring one of the consolidated fares specially contracted by A. T. Mays. Any stop-overs or connecting flights are clearly shown. These flights are designated Expedia Special Fare. Then further down the list will appear the scheduled flights that may be more direct and convenient, but are often more expensive. Scheduled flights are designated by means of a small graphical image of the airline's logo.

All of the above is undertaken in a matter of seconds, without the consumer being aware of the detailed processing steps involved. The consumer simply sees the results in the form of an easy to understand Web page listing the flights that match their requirements in the sequence requested by the consumer. In most cases, a number of flight options will be shown on this Web page, which is fully scrollable.

Each flight shown on the summary page may be viewed in detail by just clicking on a Web page 'button'. When this is done, the particulars of the selected flight are shown on a separate page of its own. Each leg of the flight is shown in detail including: aircraft type, flying time, check-in time, meal options and many other key items of information. In addition to this, the conditions of the selected fare are also shown. This is very important and the conditions are shown in full detail, including: applicable fare rules, usage restrictions, implications of post-booking itinerary changes, lost ticket conditions and so on.

Booking

When a flight has been chosen, one of the first things Expedia requires the consumer to do is to accept the conditions of the selected fare chosen for the desired flight. This is accomplished by requiring the consumer to enter a check in a box marked 'signifies acceptance of conditions'. At this point Expedia offers the consumer three options regarding payment:

1. The flight details may be saved in the itinerary but not booked. This action does not reserve a

seat on the chosen flight but records all the details in the consumer's itinerary, which is stored in Expedia. All such stored itineraries may be retrieved at any point in the future and either cancelled or booked by one of the other two methods described below.

2. An option on the chosen flight may be taken. This option is recorded by Worldspan with an associated time limit. The option is automatically cancelled by Worldspan if not confirmed by midnight on the following day. To take an option in this way, the consumer must enter the last four digits of their card number. Although payment is not actually taken at this point, the entry of card information denotes a serious intention on the part of the consumer to eventually make a firm booking and deters frivolous abuse of the system.
3. The flight may be booked and payment details entered. Payment may be collected in one of two possible ways: (i) by entry of the consumer's card details, which are then used to pay for the ticket; or (ii) by selecting an option to pay for the ticket via a telephone call to the designated Expedia travel partner, which in the case of the UK is A. T. Mays. At present in the USA, over 90 per cent of customers who book travel products choose to enter their card details into Expedia rather than telephoning WTP.

In either case, following successful payment by the consumer, the ticket will be printed by A. T. Mays and despatched to the consumer's home address.

Tickets will only be despatched to the location that is registered as the cardholder's address. In the USA, an address verification system (AVS) allows a consumer's address as registered by Expedia to be checked against the cardholder's address as recorded by the card company's computer. However, this functionality is not presently available in the UK, or for that matter many other countries outside the USA.

To complete a booking, the consumer then specifies their personal details and preferences, such as the kind of seat they would like, the desired meal option and the frequent flyer number. However, virtually all of this information may be

pre-stored in the consumer's personal travel profile held by Expedia. If this is the case then all the fields that are required to complete a booking will be populated automatically by Expedia from the profile. Once this has been done, the booking is complete and the consumer may elect to either quit the system or continue building their itinerary with other travel services, such as making bookings for hotels and car rental.

The Hotel Wizard

Microsoft has gone to great lengths to develop a comprehensive and up-to-date hotel information system and booking function, which is now an integral part of Expedia. The primary source of Expedia's hotel information is the Worldspan GDS (see Chapter 4). All of the information about hotels that is available in Worldspan is actually provided by the hotels themselves. A preliminary review by Microsoft, undertaken before Expedia's launch in the USA, highlighted a problem – much of the hotel information in Worldspan was out-of-date and required updating. So, before launching Expedia, over ten full-time Microsoft staff spent several months working with Worldspan's data management group and telephoning its participating hotels to clean up the data base. The team managed to review and update all hotel-related information prior to Expedia's launch – a considerable task. Procedural processes are now in place to ensure that Worldspan's hotel information is maintained and quality controlled as part of the day-to-day operation. The result is a powerful and user-friendly hotel booking capability that is an integral part of Expedia.

To add a hotel booking to an itinerary is very simple and straightforward. I would argue that it is far easier than trying to do the same thing via a high street travel agent. First, the consumer selects the Expedia Hotel Wizard. This can be done in relation to an existing air booking, in which case the system already knows much about the desired service, e.g. the city, the dates and the arrival time.

Once this information is available, either by direct entry using the familiar windows style GUI or from information previously entered, the Hotel Pinpointer may be selected. This is a very useful tool that helps the consumer locate a hotel in the

area where their business trip or holiday is to be undertaken.

The first thing to be displayed by the Hotel Pinpointer is a Web page that on the right-hand side shows a map of the city in which the hotel is to be booked. Each hotel in the city is shown on the map by an unfilled small circle. A zoom feature allows the map to be expanded to show a wider area or focused down to show the locality of desired interest. On the left-hand side of the screen is a scrollable list of hotels in the city or area shown by the map. When a hotel is selected from the scrollable list by clicking on the hotel's name, a small red circle appears on the map showing the location of the selected hotel. This is a very powerful feature of Expedia's Hotel Wizard that enables an untrained consumer to make an effective decision on the best choice of location for their hotel in a given city. It also provides walking distances and times between the chosen hotel and any specified point in the city. This is accomplished very easily: having chosen a hotel, the consumer clicks on a point of interest on the map, say their office or a particular theatre. A heading box on the map then shows the walking distance and estimated walking time from the chosen hotel.

When a hotel has been chosen, another option within Hotel Pinpointer allows the consumer to view all relevant details that describe the hotel, such as: the address, the number of rooms, the facilities and amenities available to guests, the forms of payment accepted and the room rates. The choices now are either to book the hotel or to add it to the itinerary.

As with an air booking, if a reservation is required, Expedia will first ask the consumer to accept the terms and conditions that apply to the room and rate chosen. Then the required booking details are either automatically completed from the consumer's profile or entered field by field. Finally, the hotel room is booked via the Worldspan GDS Internet booking engine.

Car Wizard

This works in a similar way to the Hotel Wizard. The consumer chooses from a list of car rental companies or requests Expedia to show a list of car rental options in ascending order of price.

Each option can be shown in more detail down to the level that includes information such as the type of car, its characteristics and rental rate. Again, the terms and conditions are presented in full for the consumer to review and accept prior to booking. A car rental service can be selected and either: (i) booked using the simple windows style GUI and the Worldspan booking engine, or (ii) simply added to the itinerary for booking at some future point in time. A related function that assists a car rental customer with their choice of route is Microsoft's Address Finder.

Address Finder

Microsoft owns the Autoroute software package and associated mapping data base. Expedia has packaged this with its data base of travel information to provide support for planning fly-drive holidays. This has been bundled up into a comprehensive mapping data base of over 500 destinations.

When consumers first log-on to the Address Finder, they select a destination and are presented with a 360 degree revolving image of a famous landmark or scene. This is an attractive way of introducing Address Finder's rich store of destination information, which includes country, region and city maps. In the USA, an address can be located by entering a zip code. The Autoroute function uses this to retrieve the appropriate local map and displays it as a Web page for the consumer with an indication of the desired location. This can be used to determine the best way to reach a destination by car.

Post-reservations support

Once a consumer has used Expedia to research and plan their trip and the booking process has been completed, Microsoft's travel partner comes into the picture to provide post-reservations support. This includes many servicing functions, the most obvious of which are payment processing and the delivery of travel documentation to Expedia's customers.

However, even before these events take place, there are some important customer servicing functions that need to be undertaken. One of the most important of these is the management of GDS queues.

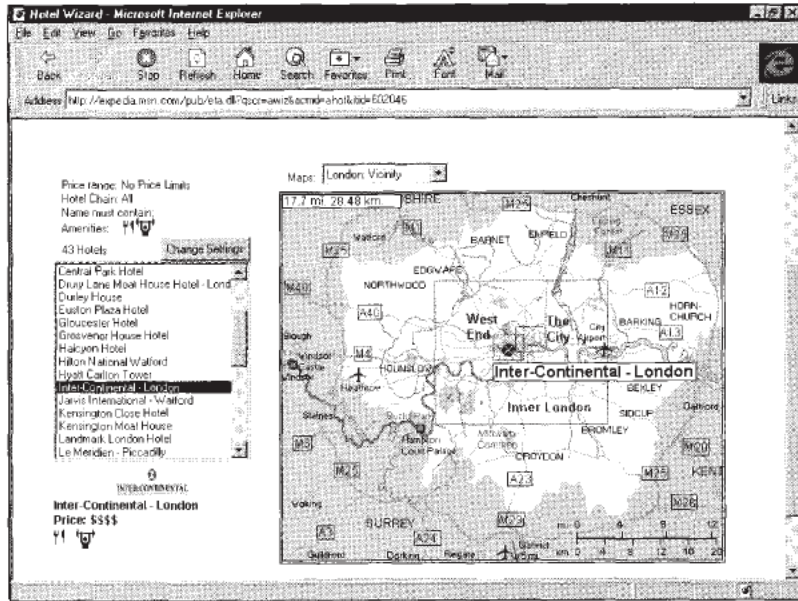


Figure 5.7 Hotel map – wide scale

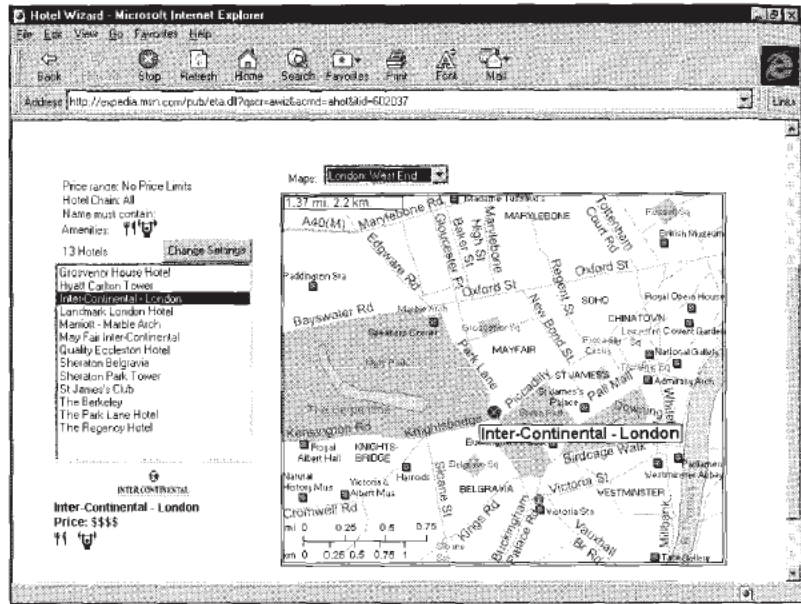


Figure 5.8 Hotel map – zoom

significant changes. These are communicated to the customer either via e-mail or in the case of more urgent changes, by means of a telephone call.

Expedia and the future

The book is still open on how successful Expedia and similar Internet-based travel sites will be in the future. The initial indications are, however,

encouraging for Expedia and other new intermediaries. But one of the issues that has only recently been identified is the ratio of 'look to book' transactions handled by GDSs like Worldspan. The price travel suppliers and GDSs have to pay for receiving more bookings directly from consumers is the increased overhead on computerized reservation systems.

By their very nature, consumers are less trained

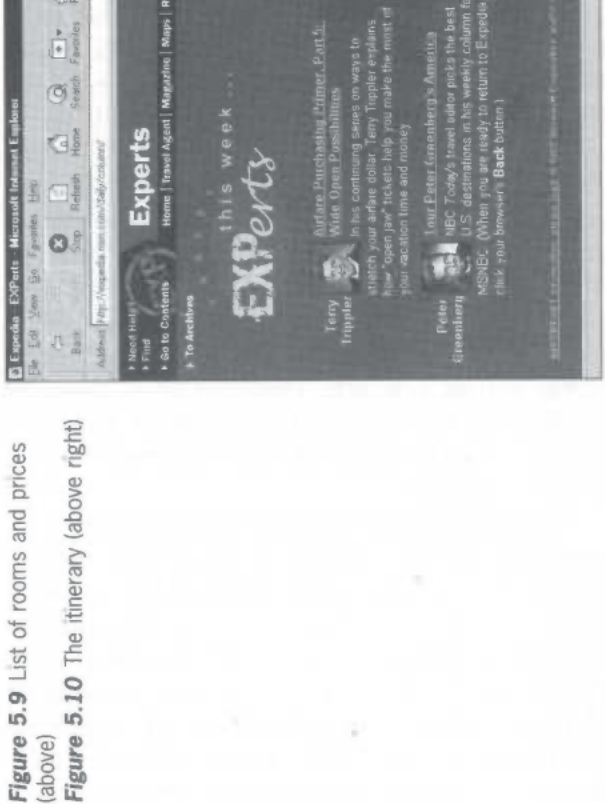
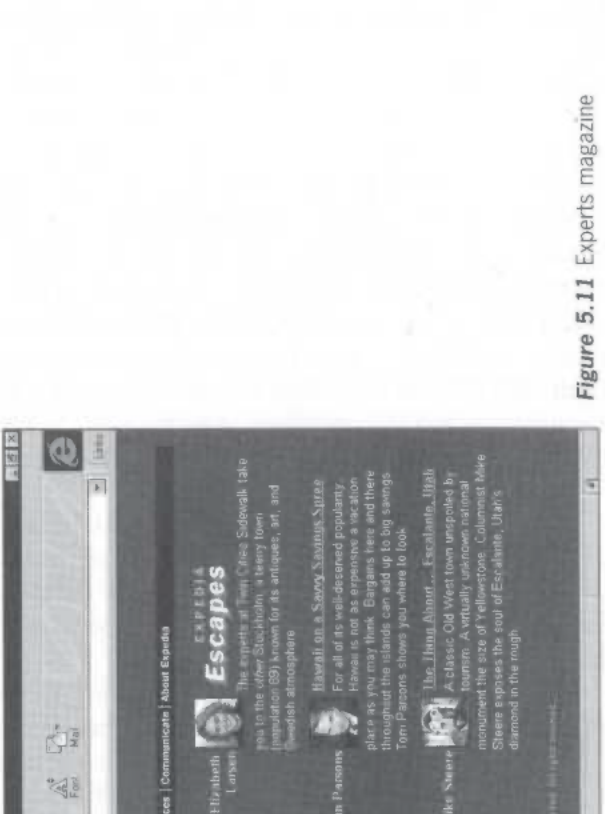
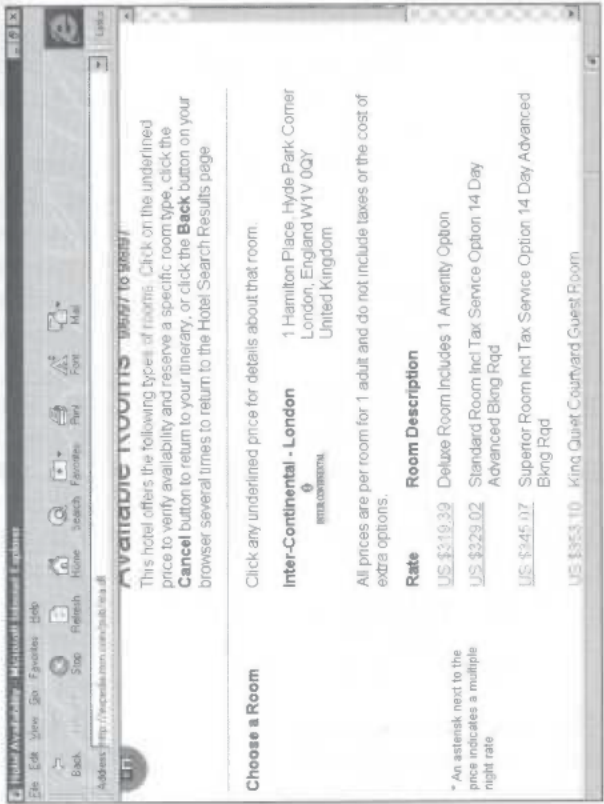
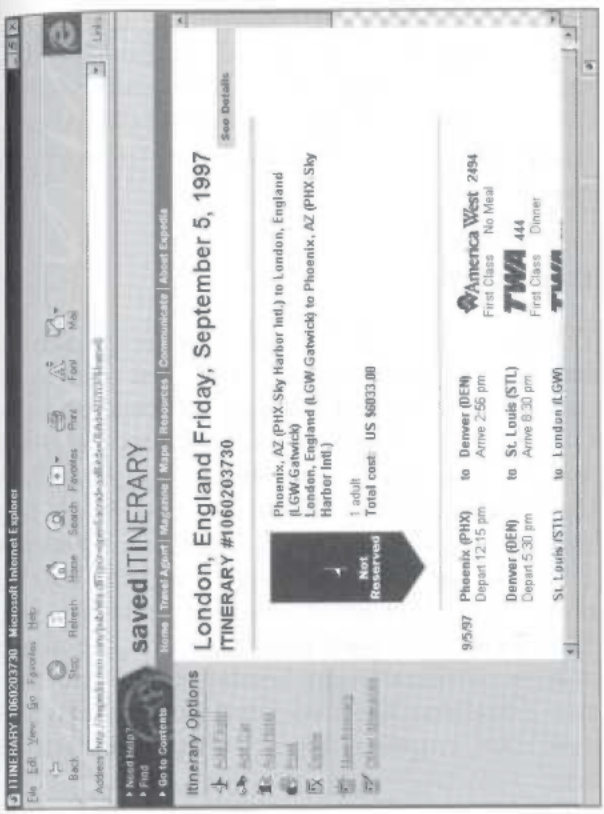


Figure 5.9 List of rooms and prices (above)

Figure 5.10 The itinerary (above right)

Figure 5.11 Experts magazine

in the complexities of travel than travel agents. Therefore they tend to do a lot more browsing and a lot less booking compared with a travel agent. But in so far as the GDS systems and networks are concerned, this manifests itself as an enormous increase in transaction volume that may well be out of alignment with historical booking ratios. At the end of the day this means higher costs for the GDSs and their airline participants due to the need for larger, more powerful computers and higher speed communications lines. Although this may be offset to some extent by the improvement in the price/performance ratio of IT, there remains the spectre of increased processing overheads and higher operating costs.

This issue will no doubt continue to be addressed over the next few years as electronic commerce grows and the new intermediaries develop enhanced capabilities for their interactive consumer networks.

An example of one such future booking facility being considered by Expedia is the provision of alternative options for those customers booking airline seats. At present, when a booking request is made, Expedia uses Worldspan to check availability on just the stated city pairs and dates. However, in the future a facility may be added that would ask the consumer a question of the form: 'Although an economic flight you have requested is not available on the date or between the city pairs you have specified, a good alternative is available on another day or between other cities close to your ideal choice. Would you like to consider these options?' This kind of functionality is rather complex to program and needs a lot of consumer research before it can become viable and/or practical. However, if it could be introduced, it would make the use of Expedia's Internet travel booking site that much more attractive to consumers.

Another enhancement that may be under consideration is the provision of contracted rates on hotels and car rental companies. This could be done in a similar way to the existing consolidated air fares data base facility. In the UK, Microsoft's partner A. T. Mays or even a specialized hotel company, could build a data base of contracted hotel rates. These would be special rates with a low price tag but with certain conditions only

available to Expedia's customers. These special rates would be created and distributed in a similar way to contracted air fares with booking functions supported by the Worldspan GDS. Contracted car rental rates could work in a similar manner.

TRAVELOCITY

Travelocity (Fig. 5.12) is the name of Sabre's Internet site, which was established jointly by Sabre Interactive and Worldview Corporation in October 1995. These two key players combined forces to provide a powerful and popular Web site comprising over 200,000 pages, which was launched in March 1996 and that by November 1996 had already registered more than 450,000 members and received over 4.1 million visits. Travelocity is a 'do-it-yourself' travel site aimed at both individual leisure holiday-makers and business travellers. The two companies driving this new URL, known as <http://www.travelocity.com> are:

- **Sabre Interactive** This is a division of The Sabre Group and besides running the Travelocity product, it also markets EasySabre, which is described in more detail in Chapter 4 (see GDS – Sabre).

Although Sabre Interactive is totally responsible for Travelocity, it buys specialist Web publishing services from Worldview Systems Corporation. This combination of expertise is one of the key success factors that contributes to Travelocity's broad appeal to consumers around the world.

- **Worldview Systems Corporation** This is a joint venture whose participants are Ameritech and Random House. It was founded in San Francisco in 1987 as an information publication and distribution company focusing on the travel industry. It provides up-to-date information on local events, attractions, dining, business services, night-life and shopping in thousands of destinations world-wide.

This new business comprises two main parts: (a) a consumer-facing world-wide Web site, and (b) a Web marketing business. Each of these two aspects

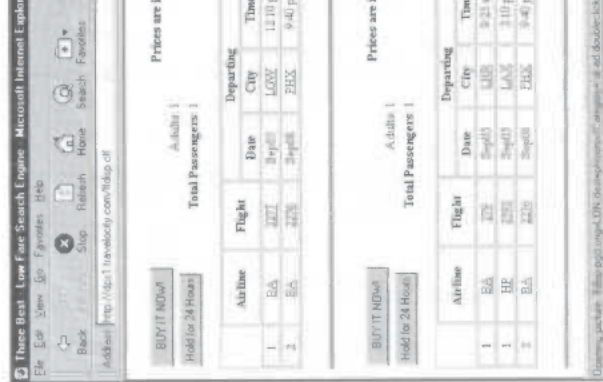
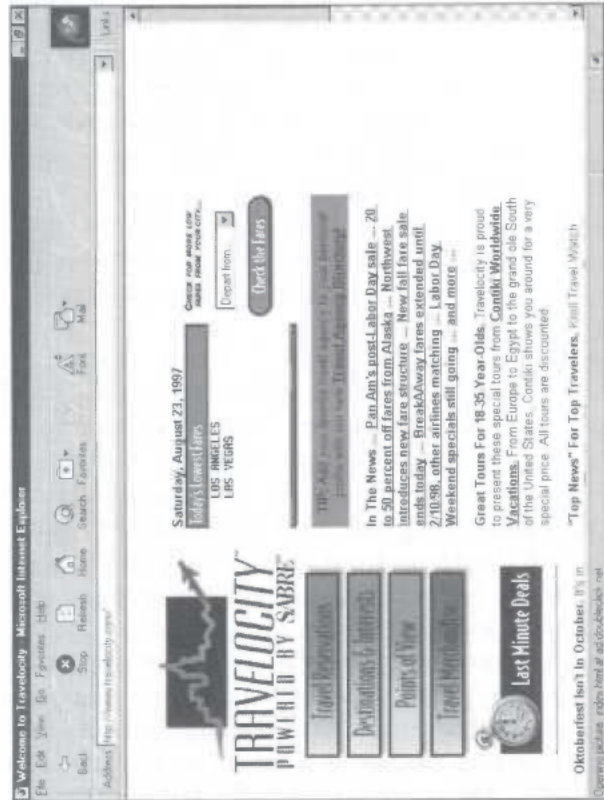
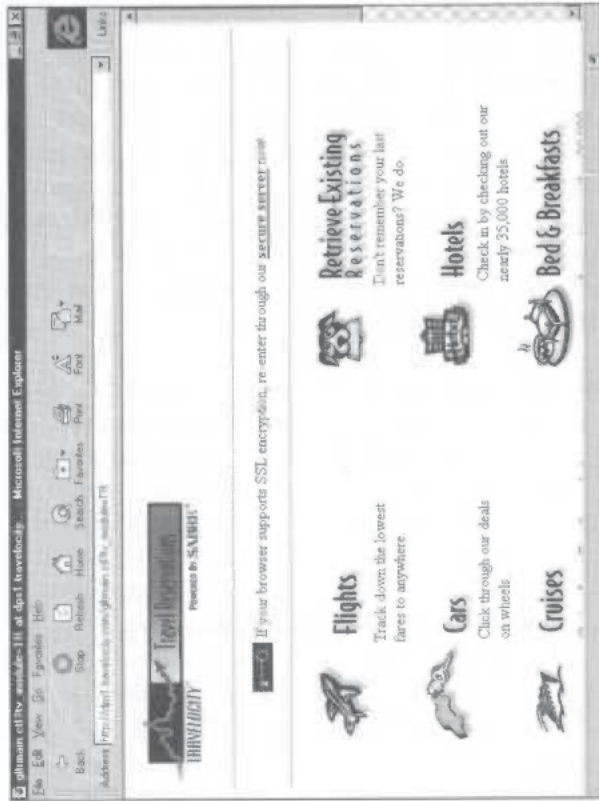


Figure 5.13 The Travelocity home page (above)
 Figure 5.14 Travel reservations page (above right)

Figure 5.15 Air options page



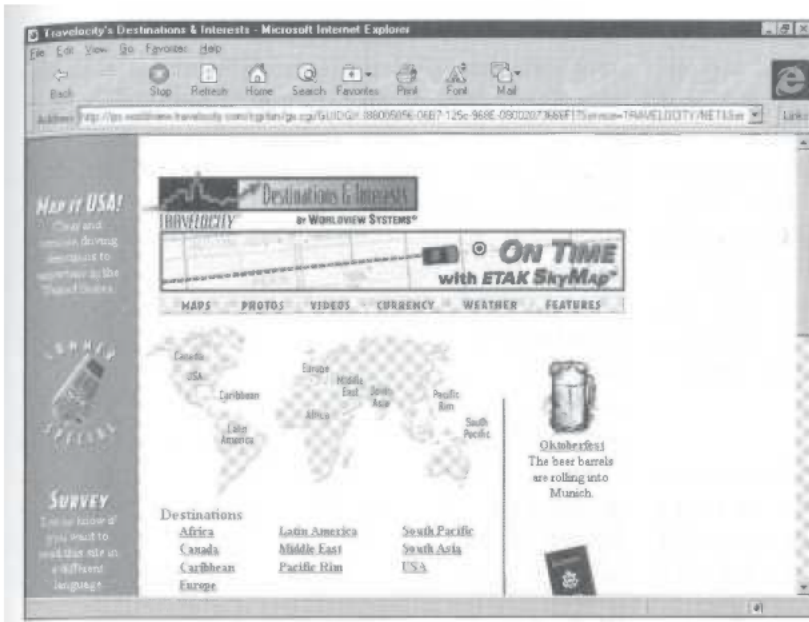


Figure 5.16 Mapping

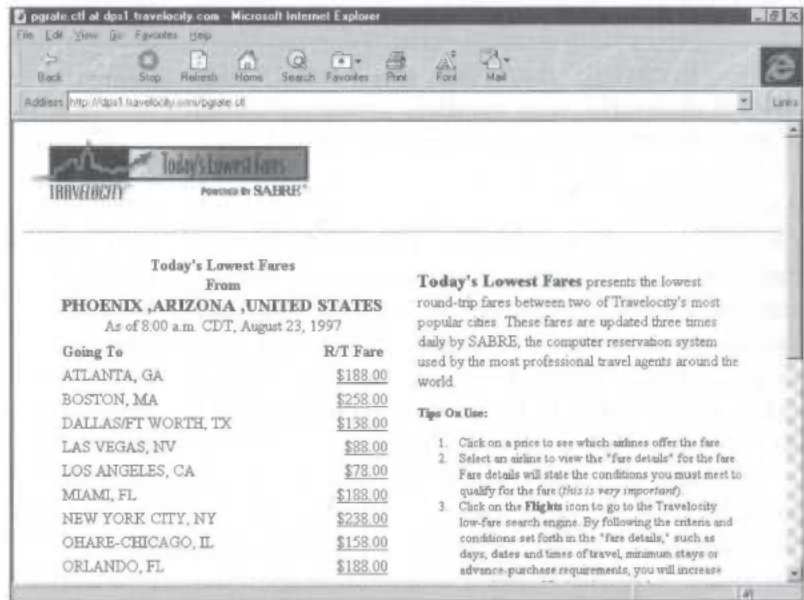


Figure 5.17 Lowest fares

Destination information

But Travelocity is a lot more than simply an interface to the Sabre GDS. Travelocity is truly a consumer-facing product that contains a great deal of searchable travel-related material. Examples include: (i) video and sound clips on over 22,000 destinations around the world, which provide in-depth facts and figures on a variety of subjects; (ii) merchandising services, which allow consumers to use Travelocity's Internet capabilities to purchase

products and services with payment on major credit and charge cards; and (iii) articles written by experts on travel-related subjects.

The depth of Travelocity's data base may be illustrated by the following statistics that summarize the types of information available: 9,500 restaurants; 1,400 museums; 11,000 bed and breakfast properties; 3,000 theatre, dance and music performances; 4,500 condominiums; 13,000 golf courses; and thousands of exhibits, shows and

festivals. Some of this information is provided by other sources with whom Travelocity has a commercial agreement. For example: Corel Professional Photos shows images of unique cultures and activities; Hotologic shows amenities and contact information for over 30,000 hotels; IVN Communications provides more than 1,500 custom video clips, multimedia displays and still images; Magellan Geographix shows a library of city maps; and the Weather Service Corporation provides weather maps and forecasts for each continent.

Chats and forums

The site also hosts an interactive communication channel for users, which is best described as 'chats and forums'. This enables users to swap ideas and ask questions on a wide range of travel topics via Travelocity's bulletin boards. Travelive, a regularly scheduled live chat conference, allows users to discuss topics with leading travel experts. There are also features on places, people and travel trends around the world, with spotlight articles profiling a destination or topic of the month.

Merchandising

One of the most promising areas for the Internet, and certainly for Sabre, is merchandising opportunities. Travelocity features lists of merchants and products from around the world, such as: luggage, books, videos, travel products, accessories and other unique items. Relevant facts on packing and shipping are provided for each item.

At present, products and services purchased using credit and charge cards via Travelocity may be collected at an airline office, an airport or a travel agent. In the future it may even be possible to collect merchandise from a Travelocity ticket bureau. Such an operation would, however, need to be created by Sabre just for this purpose. However, like many new services on the Internet, Sabre is waiting until a clear pattern of demand is established before investing the substantial development and investment resources required to build this new infrastructure and distribution channel.

It is, however, recognized that at the present time there is somewhat of a consumer perceived barrier to paying for services on the Internet. Although barriers such as this are forecast to come down over the next few years as better encryption

becomes more widespread and consumers become more confident of the Internet's security, in the short term Travelocity may well be used primarily for accessing information and planning travel. It is therefore quite possible that consumers will access Travelocity during the trip planning stages of tourism and then finally visit a local travel agent or some other retail outlet to purchase their tickets.

Another challenge for Travelocity is the degree to which it is customized for different areas of the world. Although, like most Web sites it is accessible globally, it is at present, i.e. mid-1997, customized purely for the USA consumer market. In this context, customization encompasses features such as the language in which the Web pages are displayed, the currency in which prices are quoted and the format of postal addresses. Customizing a Web site for true global use is a mammoth task that has associated with it a mammoth price tag. So, this development will undoubtedly follow an evolutionary path over a long period of time and will be driven by consumer demand.

Finally, Sabre has experimented with an interesting and innovative use of the Internet known as interactive auctioning. This is an electronic auction of airline seats, using the Internet as a communications medium. The way it works is as follows. An airline finds itself in the position of having a number of spare unsold seats on one or more of its flights, with only a short time to go before departure. It displays the details of these seats on the Internet, e.g. origin, destination, class, date, time, etc. Along with this, the Internet page invites consumers who are Internet users to make bids for the seats. At some point in time, the airline will review the bids received and sell the tickets to the highest bidders (whether or not there will be a reserve price is an open question, but I suspect somehow that there will be). Some people have received real bargains in this way and airlines have also benefited from the sale of seats that would otherwise have been empty.

Travelocity is also accessible from many other Web sites. These sites focus on providing specific types of users with targeted information on a variety of topics such as small business forums, links to other travel information providers and news services. Such sites have hypertext links to Travelocity. This means that visitors to these

sites simply click on a particular sentence or key word and are then automatically connected to Travelocity.

Sabre Web Reservations

At present this is a service that is offered to travel agents in the USA, Canada, Bermuda and Europe. Australia, New Zealand and other countries will be able to subscribe to the service as part of a roll-out program that commenced in 1997. The service supports those travel agents who either have already set up their own Web sites or are considering one. The services offered by Sabre Web Reservations used to include full site development services, such as page design, navigation through multiple pages and links to other Web sites. However, more recently, Sabre has decided to focus on the primary customer demand, which is the need for links from the agent's site to Sabre's booking engine. There is a one-time set-up charge and then an ongoing maintenance fee for all Sabre Web Reservations services. The service was originally introduced in two phases, the first of which is now complete:

- **Phase I** This supported travel agents in their efforts to create personalized Web pages for display purposes only. It also enabled travel agents to receive e-mail from respondents who view their pages and wish to take some kind of follow-up action. An essential feature is the ability to monitor the hit rate on a travel agent's site. Also available to travel agents is Travelocity's own search engine called Travel Explorer. This searches the Travelocity pages for subjects and keywords specified by the user and returns a list of page references and available Web sites. As mentioned above, this was an early service offering that enabled travel agents to establish their own Internet sites.
More recently, Sabre has recognized that many travel agents are now perfectly capable of independently creating their own Web sites and therefore the Phase I product offerings are now no longer available. Instead, Sabre has moved on to Phase II, which provides agents with a link to the Sabre booking engine.
- **Phase II** This enables travel agents with their own Internet sites to implement a link to Sabre's

Travelocity booking engine product. Phase II products are marketed actively in the USA. The Travelocity dimension allows consumers who access a travel agent's own Web site, to link into Travelocity for reservations purposes. Customers can then search for and reserve the lowest air, car and hotel rates as well as special travel agency fares. All of this information is shown in their local currencies with local taxes. The resulting reservations are sent electronically to the travel agency for ticketing.

This also allows consumers to pay for their products over the Internet, via Sabre. This whole process is controlled by core Sabre functions that communicate directly with the travel agent for payment and ticketing purposes. To use this service the travel agent must of course be a Sabre subscriber and possess an IATA licence that allows the agent to print airline tickets for their customers.

Travel agents are, however, exploring other ways of using the Internet in conjunction with Sabre. Because most of this development effort is undertaken by the travel agent, Sabre's role is now more of a supportive one, which really falls into the category of consultancy. However, it can be clearly seen that Sabre's underlying distribution strategy keeps the travel agent firmly in the loop, even though consumers may be able to book directly with them.

WORLDSPAN

Over the past ten years or so, Worldspan has developed and grown its own true global network in response to customer demand (see Fig. 4.17 which shows the Worldspan global network). This network can now support most of the common communications protocols, including those used by the Internet. It therefore provides Worldspan with an ideal springboard from which to exploit the Internet as a new distribution channel for its GDS services. This is a significant development because it expands Worldspan's travel agency world into a new dimension – that which is inhabited by that fickle of all users, the travel consumer.

There are really three avenues down which Worldspan drives its services on the Internet: (i) a straightforward subscriber service for travel agency users wishing to access the Internet; (ii) an alternative distribution channel for GDS services, which are provided via travel agents to consumers wishing to access the Worldspan system; and (iii) a third-party service that helps travel agents and other companies set up their own Web sites. Let's explore each of these three Worldspan Internet services in a little more detail.

Worldspan Internet for travel agents

Worldspan can provide full access to the Internet for its travel agency customers. This allows existing users to expand their booking PCs to become Internet browsers without the need for additional communication facilities. This is accomplished: (a) by using special software on the existing population of travel agency PCs, and (b) by using Worldspan's Internet servers with high capacity trunk connections into the Internet.

- **Gateway for travel agents** Travel agents use the Gateway Plus product (see Chapter 4 for more details), to establish a connection into Worldspan's global network by a variety of alternative methods. The two main methods are either by dedicated data lines rented from telecommunications suppliers or via dialled telephone connections on an as-needed basis. In either case, the travel agent may elect to use special Worldspan software on these PCs to access the Internet indirectly. The routing appears to be convoluted but is in fact extremely fast. Messages travel from the users' workstation PCs via their branch Gateway PC, into the Worldspan network and then via dedicated Internet Servers into the Internet itself. This allows travel agents who already have Worldspan PCs for information and booking purposes also to use those same PCs to access the Internet.

But it is the branch Gateway server that provides some very special control functions. These functions have been designed by Worldspan to be of particular interest to the travel agent's head office management. The software running in the branch gateway server provides

a high degree of management control over the services that are provided to end users in branches. For example, the branch gateway can limit the Web sites that are accessible by end users. This is especially relevant when a large multiple travel agent uses the Worldspan network to inter-connect its branches. In such cases, the multiple's headquarters management staff will almost certainly want to restrict the Web sites that staff in the remote branches are allowed to access.

It could be, for example, that supplier and tourism information sites are perfectly allowable, whereas sports results and games sites would be out of bounds. The Worldspan branch gateway server is the means by which this level of access is controlled. In addition to this, the gateway server can also restrict the hours during which the net is accessible by certain travel agency end users. While controlled access during normal office hours could well be OK, access after 6 p.m. or before 8 a.m. could either be disallowed completely or totally open, depending upon the policy set by the travel agency management.

- **Internet servers** Once through the branch Gateway server, the end-user's Internet traffic is routed across the Worldspan network to an available Internet server with spare capacity. This type of server is dedicated to handling Internet traffic and is connected into the Internet by high speed telecommunication lines. Each server is itself a high speed, high capacity computer, dedicated to Internet processing. These powerful computers not only serve as an effective gateway into the Internet for all Worldspan travel agency users but they also provide an adequate level of security: and security is very important to ensure that, for example, payment transactions are secure, viruses are not downloaded and the travel agent's systems may not be accessed by unauthorized users.

The benefits of travel agents using the Worldspan Internet path are: (a) it eliminates users having to dial into their local Internet service provider, (b) it provides the agency's management with a high degree of control over how its staff use the Internet, (c) it provides a high level of security to the travel

agent, and (d) it allows Worldspan customers to leverage their investment in GDS technology for Internet access.

Worldspan Internet for consumers

Worldspan's approach to consumer bookings over the Internet is inextricably linked to the travel agent community. While consumers may browse the Worldspan pages and peruse availability, when it comes to making an actual booking, a travel agent is always brought into play. Worldspan even goes as far as taking a consumer's card account details and then verifying them with the card company's own computer system. However, at this point, it offers the consumer a choice of travel agents from a list of pre-registered Worldspan subscribers. The consumer selects a travel agent that is, for example, either: (a) closest to the consumer's own home or office location, or (b) another agency with whom the consumer wishes to deal, perhaps on a mail-order basis. Once an agent has been chosen by the consumer, Worldspan automatically queues the booking to the agent for processing, ticketing and funds collection from the consumer.

Such an approach enables Worldspan to continue enjoying the support of a distribution channel that generates around 80 per cent of its bookings, while simultaneously marketing its services to consumers in new and innovative ways via the Internet. To a large extent, this strategy relies upon the travel agent for promoting the awareness of Worldspan's Internet service to consumers. Worldspan itself does not engage in the pro-active marketing of GDS services direct to consumers. This partnership approach works effectively and has so far proved to be mutually beneficial to both parties.

To do this, Worldspan has created its own infrastructure to handle consumer bookings over the Internet. This infrastructure is core to its Internet strategy and is based on an Internet booking engine (IBE). The IBE is a computer that is connected directly to the Worldspan host mainframe in Atlanta. It uses special interface software to front Worldspan's consumer-facing GDS service on the Internet. The IBE comprises two main components: (i) support for a user-friendly GUI browser for direct use by consumers, and (ii) a

standard communications protocol called SMI, which indirectly links consumers to Worldspan via other Web site providers. Let's take each one in turn:

- **Direct – via browser interface** This type of IBE connection is aimed at supporting Worldspan's relationship with consumers, via the Internet. A key element of the software that runs on the IBE computer is the user-friendly browser interface. This supports an easy-to-use dialogue for communicating with the Worldspan host system via any of the commonly available Internet Web browsers, such as Microsoft Explorer or Netscape Navigator. It assumes that the end user will not be specially trained in how to use a GDS and makes extensive use of windows, drop-down lists, menus and check-boxes.

Although the GUI is very user-friendly, it can be a trifle slow for an experienced user. It is for this reason that an alternative browser is planned by Worldspan, which will be offered as an optional product. This will incorporate native Worldspan GDS functions and will consequently be aimed at the more sophisticated user who may initially require some basic training before they can use it effectively. However, it will be significantly faster than the current Internet IBE browser.

- **Indirect – via SMI** This type of IBE interface is available to those companies wishing to connect their own Web site computers into Worldspan's GDS system. The communications protocol used to make this connection to the IBE computer is proprietary to Worldspan and is called SMI. This is a messaging standard that controls Internet-type messages flowing between computers. The two computers in this context are of course: (a) the Worldspan IBE computer; and (b) the Web provider's own computer, which, in turn, is connected to the Internet. In some respects SMI is similar to PADIS (see Chapter 1 – The TTI). It is an extremely successful protocol and is now widely used in the Internet industry. In fact, one of the reasons Microsoft chose Worldspan for Expedia's GDS booking engine was because of the flexibility and technical compatibility

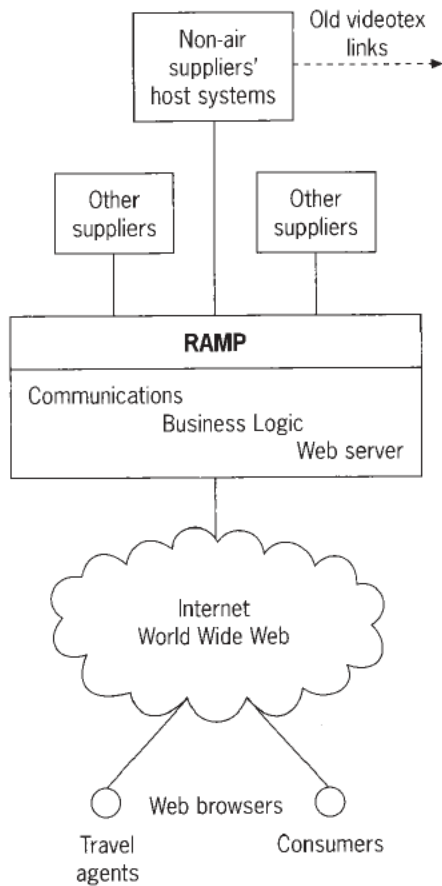


Figure 5.18 Worldspan's RAMP project

of SMI (see page 196 for a fuller description of Expedia).

Worldspan's IBE can therefore be used by companies wishing to act as booking intermediaries. Examples of such companies include Microsoft's Expedia and travel agents themselves. Each customer of Worldspan's IBE service uses this interconnection to provide its own customized Internet booking facility. This allows companies to create proprietary Web sites with embedded links to Worldspan's IBE, just as though the whole site, including the booking service, was provided by the companies themselves. When a site is created especially for a customer like this, it is of course heavily branded for that customer. Once on the Internet, it then appears to a browser, i.e. a consumer, to be the customer's own site and is not branded as a Worldspan site in any way.

Worldspan's IBE handles the booking and ticketing of both airline and hotel products. Car rental functions are to be added soon (almost certainly by the time this book is published!). A great deal of effort is currently being directed towards enhancing Worldspan's Internet services and the project code-named RAMP (Fig. 5.18) will provide the supplier side for much of these developments. RAMP is a strategic system and is based on Internet technology. This, together with Worldspan's global network and GDS booking functions, should enable Worldspan to become a leader in Internet-based information and booking services to consumers.

Worldspan's third party Web service

When a company wishes to establish its own Web site, it faces some considerable challenges in the areas of skills and resources. There are the marketing issues to consider, the graphic design skills needed to create attractive and exciting Internet pages, the technical skills required to write programs in Java, the expertise needed to write hypertext with suitable links to other pages/sites and finally the operational resources needed to keep the site running effectively and the information up-to-date. To this list can often be added the technical complexities of inter-connecting a company's own product inventory system to the Internet. Worldspan is particularly active in two prime areas of this new market:

- **Travel agents** Some large and technically competent companies undertake this work all by themselves, often using in-house experts. Many large multiple travel agents therefore already have their own sites, several with links to Worldspan. However, for the smaller agency that wishes to focus on its core competencies, i.e. travel, Worldspan offers a new consultancy service. Using this service, the smallest of travel agents can set themselves up on the World Wide Web and compete directly, and on almost equal terms, with the largest multiple. The Worldspan service provides customers with specialist consultants in all the disciplines required to establish a successful Web site.
- **Non-air suppliers** There are many non-air suppliers using well established legacy systems to control their inventories of travel products,

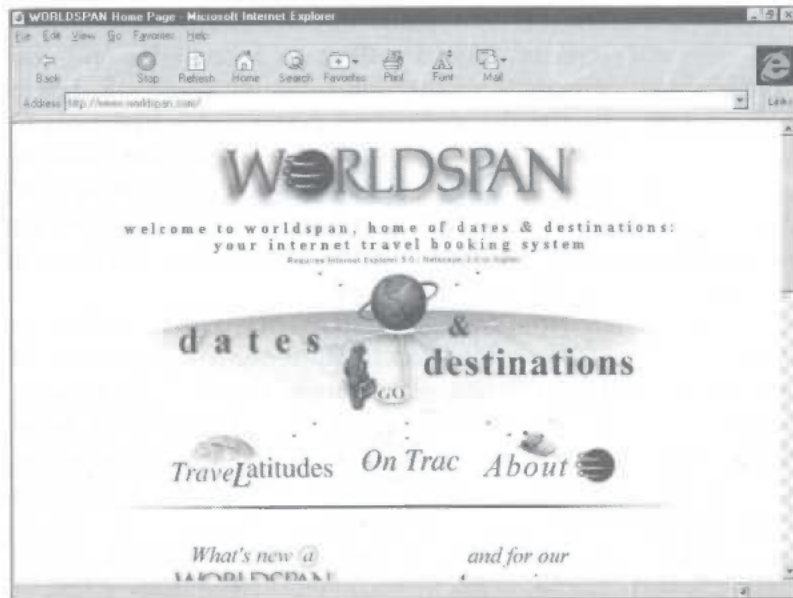


Figure 5.19 The Worldspan home page

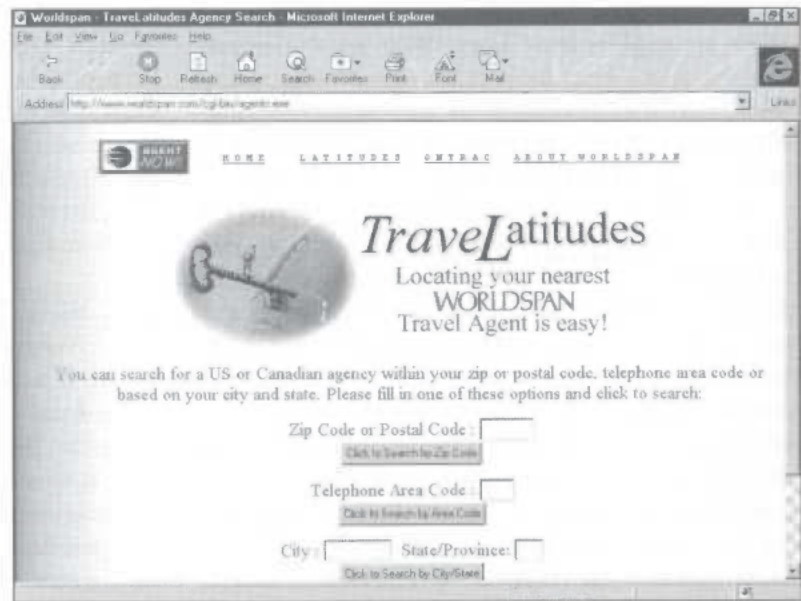


Figure 5.20 Finding a Worldspan travel agent

e.g. tour operators. In many cases these systems are distributed to travel agents via videotex. In such cases, Worldspan is able to offer these suppliers the ability to interface their systems to travel agents and consumers via the RAMP facility (which I first introduced in Chapter 4). A travel supplier wishing to expand its range of distribution options to other channels, such as the Internet, may thus contract-out the development of the required technical interfaces, to Worldspan. Because RAMP was designed

to simplify this task, the supplier may concentrate on the commercial aspects of an expanded distribution channel without being burdened by the IT resource and skill availability issues so often characteristic of these projects.

As you will no doubt have gathered, RAMP is a key element in these aspects of Worldspan's Internet services to the global travel industry. Figure 5.18 shows an overview of RAMP and illustrates how the system works.

TRAVELWEB

The TravelWeb Internet site is one of the leading participants in a portfolio of new and alternative travel distribution channels marketed by Pegasus Systems. TravelWeb is a separate company wholly owned by Pegasus Systems Inc., the parent company of Thisco (see Chapter 4). Besides offering seamless connectivity to many leading hotel systems, it also has access to an airline booking engine provided by Internet Travel Network (ITN). The primary role of TravelWeb is to provide the technologically sophisticated traveller with a full-scale travel service via the Internet. Hotel bookings are serviced on a one-to-one basis with the consumer using Thisco's Ultraswitch technology to link him/her directly to the hotel system of his/her choice. Airline ticket sales are fulfilled with the participation of a USA based travel agent. But before we explore how TravelWeb is constructed, let's first take a brief look at TravelWeb's company history. A brief review of its background should help explain how it reached its position as one of the leading new Internet-based intermediaries.

TravelWeb first appeared on the Internet in October 1994 when it was positioned as an on-line catalogue of hotel products aimed at the travel industry. In December 1995 a pilot version of the hotel booking engine was Beta tested by a controlled group of Internet users. This was the first time that Thisco's Ultraswitch hotel booking system had been connected to the Internet. The test proved highly successful and so in March 1996 TravelWeb was officially launched with eight hotel chains available for on-line booking. The first live booking was soon received by TravelWeb and to the surprise of management, this originated from South Korea and was for a stay in San Francisco on 24 December at full-rack rate.

TravelWeb became an outstanding success over the first seven months of 1996 with over US\$2.4 million in room sales being processed. By July 1996 a total of 16 hotel chains could be booked on-line via the World Wide Web. In August 1996 airline reservations and ticket purchase functions were added via the Amadeus System One GDS booking engine. This was replaced early in 1997 by a link to ITN, which is a private company operating links to most of the major GDSs. By

October 1996 TravelWeb reached a year-to-date level of US\$3.5 million in room sales and was averaging 15,000 individual visitors each day to its site. By the end of the year this had risen to US\$6.5 million in booked room revenue. Since its launch in 1994, TravelWeb has experienced a 40 per cent average month-on-month growth rate for hotel bookings. Quite an impressive debut onto the World Wide Web.

Before we dive into the detail of TravelWeb, it is important to set it within the overall context of Pegasus' new distribution strategy. At present, there are broadly two classes (Fig. 5.21) of distribution channels that Pegasus' hotel customers can use to reach their consumers: (i) the classic GDS distribution system route; and (ii) a choice of several new alternate distribution systems, the prime one being the Internet. The first of these, GDSs, is covered in more detail in Chapter 4 – Distribution Systems (see Pegasus). I am going to concentrate here on the new alternate distribution systems, most of which are based on Internet technologies. Of these, TravelWeb is one of the leaders. But there are others. For example, besides TravelWeb, UltraDirect also supports the following alternative distribution system providers:

- **Preview Travel** San Francisco based Preview Travel has a customer base of 850,000 registered users, which is derived from two main sources: (i) AOL customers and (ii) the World Wide Web. These customers, most of whom are leisure travellers, are provided with hotel information and booking functions by Preview Travel via their link to Pegasus Systems' Ultraswitch.
- **Internet Travel Network** ITN is a company that provides Internet access to the GDSs via the World Wide Web. It has replaced TravelWeb's original connection to Amadeus System One and provides GDS access for other alternative distribution suppliers.
- **TravelNet** Pegasus provides TravelNet with a hotel booking system for its corporate travel management product. This allows business travellers to book a whole range of travel products themselves from their lap-top PCs, while retaining a travel agency in the loop to take care of ticketing, consultancy and account management.

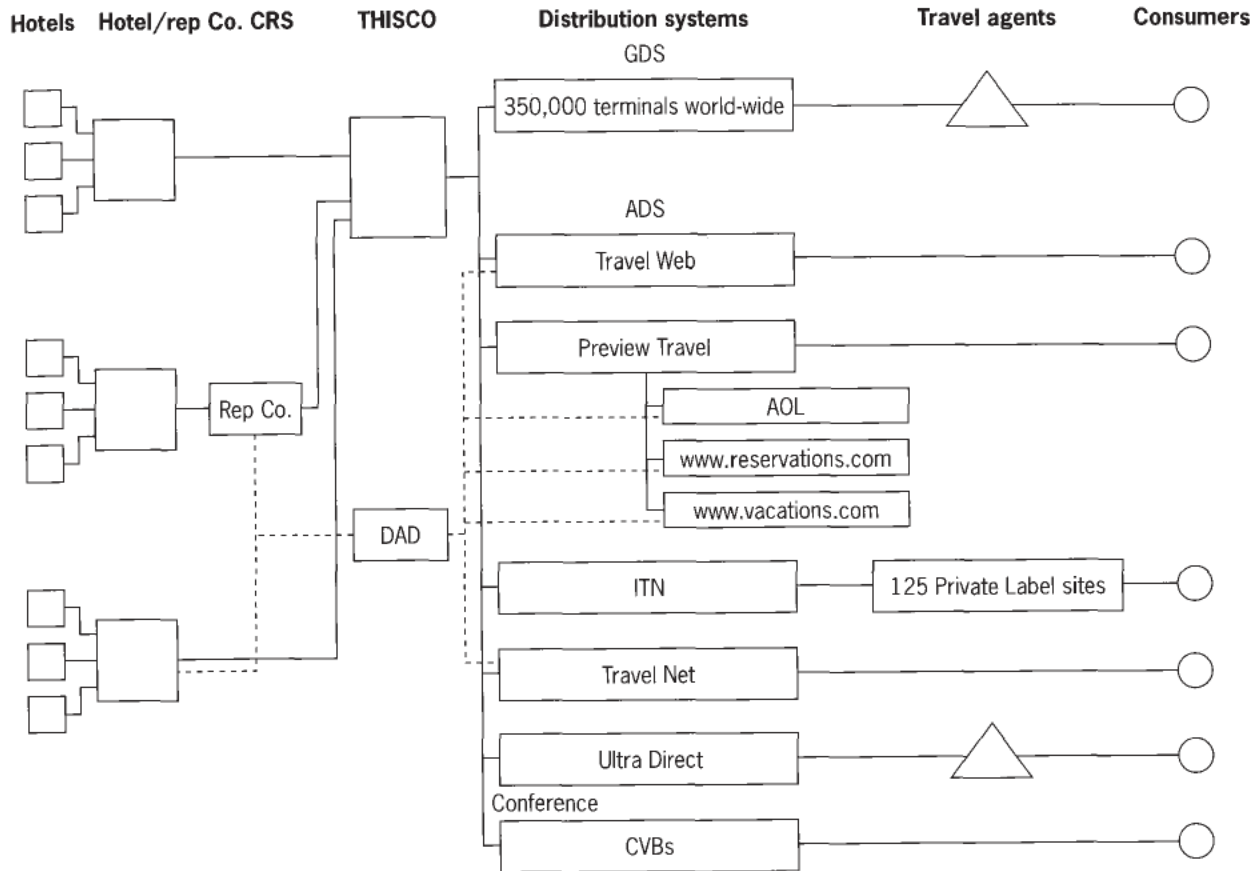


Figure 5.21 Pegasus TravelWeb transaction/processing flow

- UltraDirect for travel agents** Although UltraDirect is the generic name for Pegasus' alternative distribution system product, this sub-product is distributed specifically to travel agents. It therefore provides Thisco's hotel participants with an alternative travel agency route to that offered by the GDSs.

All of the alternate distribution suppliers using UltraDirect have their own market of consumers that they address individually, and all are connected to the Ultraswitch for on-line seamless connectivity to hotel reservation systems. Besides reservations, however, a common requirement of all these alternate distribution systems is access to information on hotels. This common requirement, which is a key feature of UltraDirect, has been addressed by Pegasus through its new distribution access data base (DAD).

DAD is really a separate data base sub-system all of its own, which is connected to the Ultraswitch (see Fig. 5.21). In 1997 DAD stored information on over 15,500 hotels, each with text, photographic images and full graphics. The primary purposes of DAD are: (a) on the supply side, to enable hotels to update their non-dynamic information in a consistent and tightly controlled way with in-built quality control features; and (b) on the demand side, to enable alternative distribution channel end users to access both the non-dynamic information and the dynamic reservations functions supported by Ultraswitch. To provide this infrastructure, a network of four servers is connected to the Internet by a front-end communications router. Three of these servers are dedicated to information management and are connected via Netscape's LiveWire technology and a 100 Mb Ethernet LAN, to the DAD data base.

The fourth is connected directly to the Ultraswitch computer and provides a gateway to the seamless hotel reservations functions of Thisco. This subsystem provides some critical functions on both the supply and demand sides of DAD:

- **DAD supply** A key success factor is the remote authoring techniques supported by DAD. Remote authoring places responsibility for page changes firmly in the hands of the participants. Each hotel chain may use either: (a) a batch interface, which maps the hotel chain's own data base to DAD's; or (b) an HTML on-line editor connected to DAD for information maintenance. This approach minimizes the administrative overheads of TravelWeb and helps ensure that information is up-to-date and accurate. Hotel updates are first captured in DAD's Work In Progress data base and following quality control checks are then migrated to the live DAD environment.
- **DAD demand** Incoming messages from end users are routed to the appropriate DAD server which can then provide either: (a) hotel information services, which are supported by three servers, each with its own link to the DAD data base; or (b) seamless connectivity to 14,000 hotels via the fourth server with its connection to Ultraswitch (1,500 hotels are also bookable but only via e-mail). The information servers use Netscape's LiveWire to create pages on the fly by merging DAD data base accesses with standard HTML templates to form an Internet page that is transmitted to the end user.

The TravelWeb server is also linked to specialized booking engines, the most prominent of which allow consumers to book hotel rooms and airline flights themselves. TravelWeb uses Thisco's Ultraswitch for hotel bookings and ITN for airline bookings (see above). In addition to supporting bookings from straightforward inventory, there are certain special marketing opportunities that make it possible for hotels to sell distressed stock on the Internet. Distressed stock, in the context of the hotel business, comprises rooms that remain un-booked with only a few days to go. Such rooms can be heavily discounted and offered directly to consumers over the TravelWeb site.

One of the other main functions of the TravelWeb server is to act as a translator between: (a) classical text-based computer systems that support TravelWeb's host suppliers; and (b) the Internet's HTML to which all Internet users are connected. This translation function allows TravelWeb's host suppliers to communicate directly with the PCs of home and business consumers around the world. A more detailed description of TravelWeb's main components is as follows:

- **TravelWeb's information pages** TravelWeb stores static information on 60 chains and 15,500 hotels located in more than 125 countries, many of which are SMEs. The information stored about each hotel is rich in breadth and depth – a virtual electronic hotel brochure for each participant. Besides the kind of textual information expected of any computer system including, for example, name, address, room rates and facilities, there is also a rich set of multi-media enhancements. For example, there are colour photographic images of hotel rooms, restaurants, meeting facilities, local recreational activities, maps and much more. A customized search engine allows users to find a hotel by a wide variety of parameters including: geographic location, chain name, rate range, amenities and facilities. The TravelWeb site comprises approximately 65,000 World Wide Web pages of information on hotel- and travel-related subjects.

Besides hotel-related information, TravelWeb also promotes a wide variety of advertisers and sponsors including AT&T, United Parcel Service (UPS), Access One, Aufhauser, Ceres Securities and The Sharper Image. All of this information is available via standard Internet browsers that allow consumers to navigate their way around the site easily.

- **The hotel booking engine** The TravelWeb Internet server is linked by high speed telecommunications lines to Thisco's Ultraswitch computer (see Pegasus in Chapter 4 for more details on this major hotel industry switch). It is through this link that consumers can book a hotel room from 14,000 properties that are part of 16 chains. The actual booking process is carried out between the consumer and the hotel chain's computer system, with no intermediate

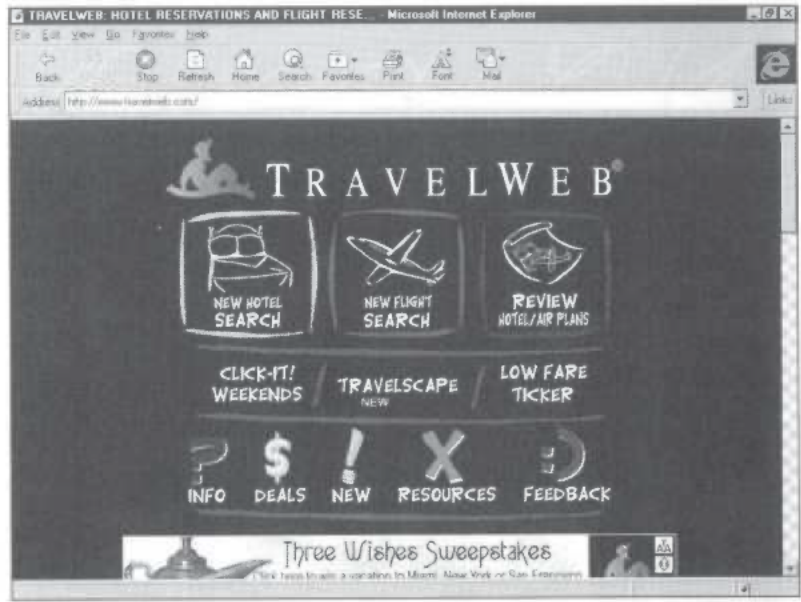


Figure 5.22 The TravelWeb home page

GDS involved at all. This *seamless connectivity* is about as close to a direct point-of-sale relationship with a prospective guest that a hotel could reasonably expect to achieve. Once a booking has been made, consumers may choose to guarantee their rooms by using TravelWeb's on-line plastic card authorization facility. TravelWeb therefore provides its participating hotel customers with a truly on-line confirmed booking service that is available to consumers all around the world.

The TravelWeb site is growing and developing all the time, usually in response to feedback from its site visitors. During Beta testing, for example, TravelWeb found that a great proportion of its site visits came from commercial Internet accounts, with most bookings occurring during business hours. Around 58 per cent originated from business travellers and 24 per cent from retail or leisure consumers. It was also found that 70 per cent of all TravelWeb bookers would have normally used an 0800 toll free telephone number to make their bookings – significantly, they would not normally have used a travel agent. About 15 per cent of users were located outside the USA, primarily in Japan and Canada. During the Beta test period, bookings were received from 29 different countries. Since the end of the Beta test

the rate of cancellations has dropped from 51 to 19 per cent – a factor that reflects the increasingly serious level of use rather than the high level of experimental bookings made by people during the test period. In 1997, the TravelWeb site was averaging 33,000 visitors per day and generating over US\$1 million in net reservations each week.

This feedback prompted TravelWeb to introduce more business travel oriented services. A prime example is The Business Traveller Resource Centre. This is a sub-set of TravelWeb's pages, which is aimed specifically at individual business travellers. It contains tailor-made pages of information on business travel topics and links to other sites on the Internet that offer products and services that may be of interest to business travellers. The 'special offers' category within The Business Traveller Resource Centre, for instance, provides some interesting promotional links. TravelWeb users can link to a merchandising site offering products at a special discount or alternatively to a sweepstake promotion organized by Preferred Hotels and Resorts Worldwide. There are also many other outbound links to services such as financial, computing/software, overnight package delivery, news, catalogue shopping, special fares and other promotions. At the last count, there were over 10,000 other Internet sites that incorporated dynamic inbound links to TravelWeb.

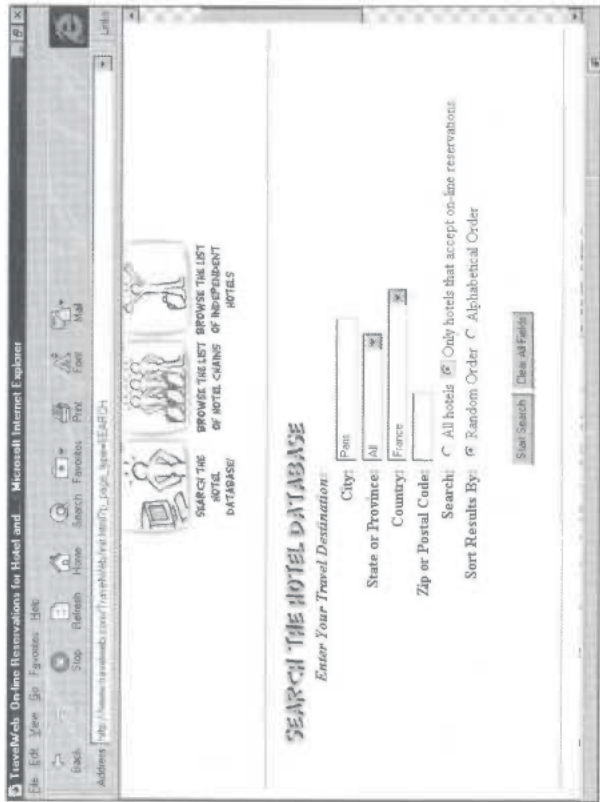


Figure 5.23 Hotel search parameters (above)

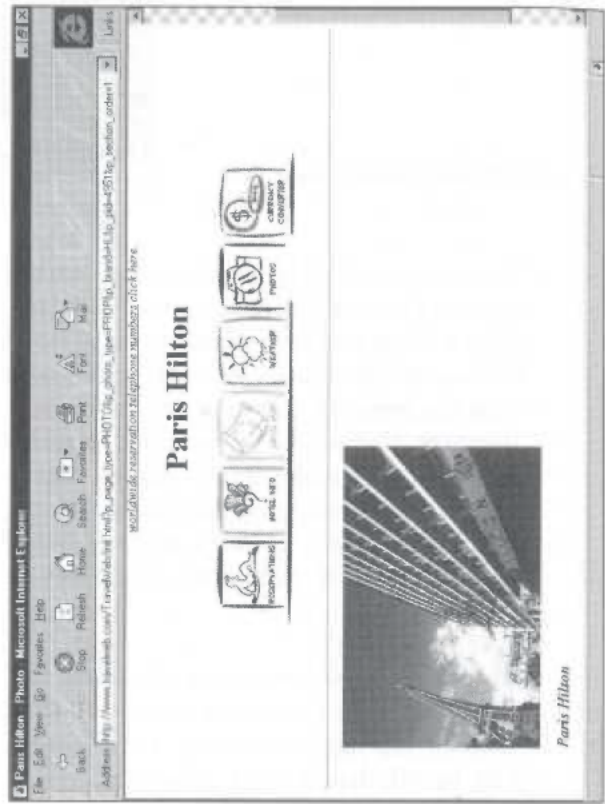


Figure 5.24 Hotel search results (above right)

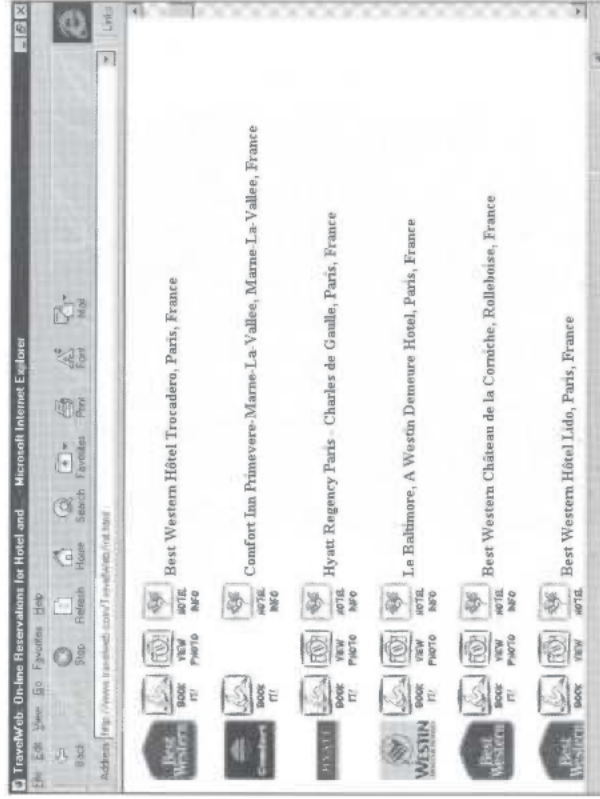


Figure 5.25 Hotel photo

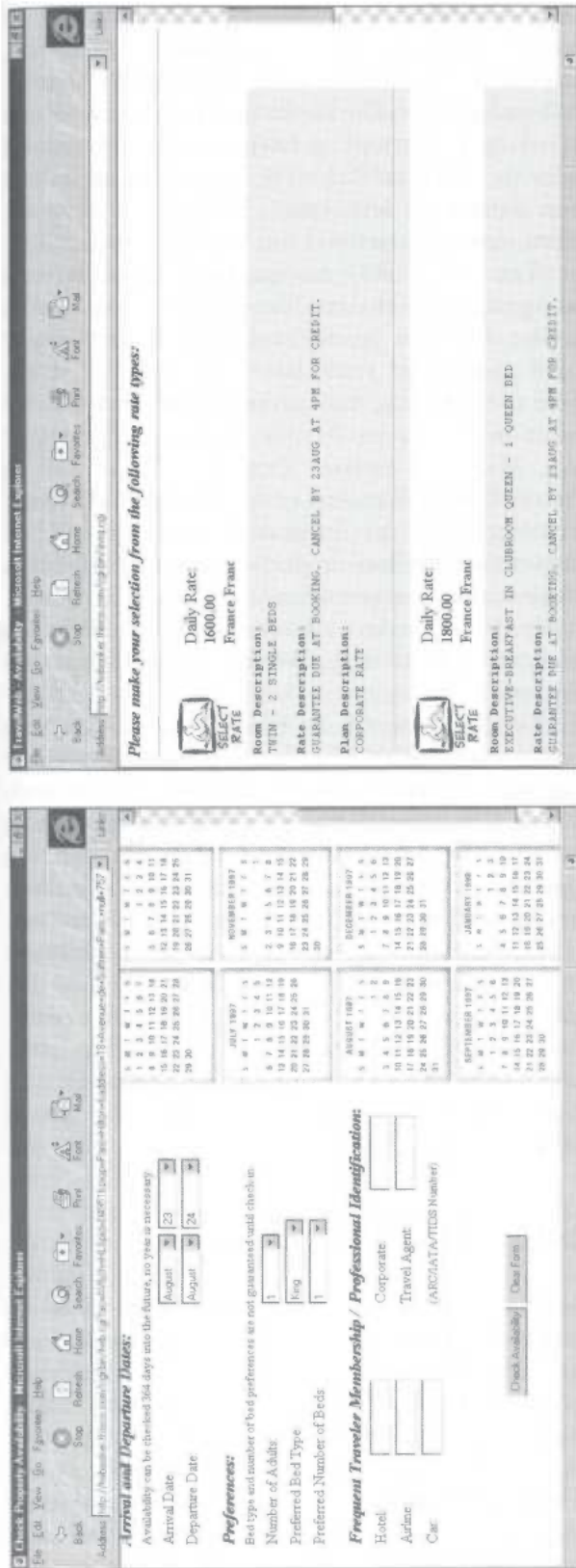


Figure 5.26 Check availability parameters (above)

Figure 5.27 Availability display (above right)

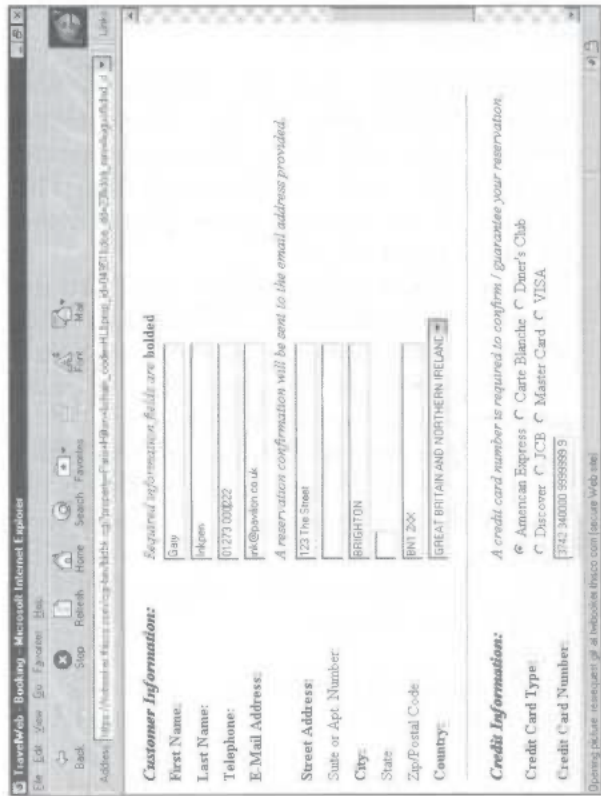


Figure 5.28 Booking screen

TravelWeb does not charge users for searches and reservations. The expenses of this site are funded by Thisco's hotel participants; and the reservation fees charged by TravelWeb to its participating hotels are less than those that are levied by GDSs for providing a broadly comparable service. TravelWeb booking fees are around US\$2.50 plus an Ultraswitch fee of US\$0.50 with no additional GDS fees payable by hotel participants. This also compares favourably with bookings received by hotels via telephone reservation calls, which average between US\$10.00 and 15.00 (and up to US\$30). TravelWeb's participating hotels also benefit from the following:

- **Potential market** Participating in TravelWeb opens up a potential market of 50 million Internet consumers in both the business and leisure markets, to participating hotels. This consumer base is truly world-wide and growing at a substantial rate.
- **Direct customer contact** The TravelWeb site provides participating hotels with the unique ability to hold one-to-one dialogues with their existing and potential customers. No other media provides this key-selling opportunity.
- **Reduced printing and distribution costs** Brochures can now be shown effectively on the TravelWeb Internet pages in full colour with pictures of rooms, locations and amenities. This reduces the need for high volumes of printed material currently used for promotional purposes.
- **Tactical marketing opportunities** Hotels can undertake their own innovative promotional activities on TravelWeb. This has a low overhead because it costs little to create and can be done within a very short period of time. The marketing of distressed inventory, as described above, is one good example.

Plastic cards accepted for TravelWeb bookings include American Express, Carte Blanche, Diners Card, Discover, Japan's JCB, MasterCard and Visa. Security is therefore a critical success factor. TravelWeb is controlled by Netscape's Commerce Server software, which has advanced Internet security features based on secure socket layer (SSL) encryption technology. Additional levels of security are provided by transaction authentication,

data encryption, firewalls, a transaction history of activity between customers and hotels and, finally, trip-wires by hotels and TravelWeb to identify unusual activity. The hardware has changed several times in an attempt to keep up with the rate of growth of TravelWeb. The server is currently a Sun Enterprise Ultrasparc 3000 and this is the third upgrade since the site was first launched.

TravelWeb may be accessed by consumers using virtually any modern browser, although a secure browser is required to complete credit card guaranteed reservations. Browsers that enable users to take full advantage of TravelWeb's multi-media pages include Netscape Navigator 2.0, Microsoft Internet Explorer 2.0, as well as Macromedia's Shockwave for Director. All these browsers have an integrated e-mail facility for response and follow-up purposes. TravelWeb takes the e-mails it receives from consumers very seriously. In fact over 300 e-mails are received each day and each one is answered by TravelWeb within 24 hours.

Finally, a word or two on costs. Running a successful Web site is not cheap. Especially one that is dynamic, up-to-date and transactional. TravelWeb started life as an operation costing around US\$110,000 to run in 1994. By 1995 this operating expense had grown to US\$1.6 million and for 1996 the cost was over US\$3.8 million. If TravelWeb continues to grow at the historic levels experienced to-date, we may not have yet seen the levelling of the operating cost curve. Future growth will always demand higher levels of investment in IT in order to keep pace with consumer demands as the Internet itself grows over the next few years.

Suppliers' Web sites

Suppliers are finding the World Wide Web an increasingly attractive directing marketing channel. While most suppliers would not consider it practical to distribute their entire product ranges directly to consumers, there are certain niche areas where direct selling is the ultimate route. The Internet offers suppliers an ideal opportunity to go one step further than advertising and sales promotion via the Web and use it for bookings.

This is, however, a significant extra step because it involves payment processing and an extra level of security. However, these functions are increasingly being provided by standard software like Microsoft Merchant Server. So, suppliers are experimenting with the Internet for the direct sales of niche products to both leisure consumers and business travellers. The following section contains several examples of suppliers' Web sites, some of which have been very successful in attracting and processing a significant number of on-line direct bookings.

BRITISH MIDLAND

British Midland launched an Internet Web site in December 1995 branded CyberSeat (Fig. 5.29), which is available at URL <http://www.iflybritishmidland.com>. It is interesting to explore the rationale that British Midland used to create this innovative new site, which incorporates full booking and payment functions. The starting point for our exploration is the business environment in which British Midland found itself during 1995. This was an environment in which the cost of sales was rising rapidly against an average of only £70 revenue generated from each ticket sale. When this was set against the company's associated internal processing the profitability of certain sectors of the business began to look marginal. British Midland also experienced a distancing of its sales and servicing staff from their customers. In fact, many pre-sales interactions with customers had virtually been lost in some cases. There was therefore a danger that British Midland would lose all opportunities to differentiate itself from its competitors.

Consequently, a review of British Midland's distribution strategy was undertaken. A fundamental objective, which was identified early in the project, was to reduce the cost of sales in order to improve yields and increase the underlying profitability of the business. One of the main distribution costs incurred by British Midland is GDS booking fees. At present these amount to a fixed fee of £4 per booking that, bearing in mind an average domestic ticket value, generates only a relatively low amount of revenue. But there are also some related concerns, the two main ones

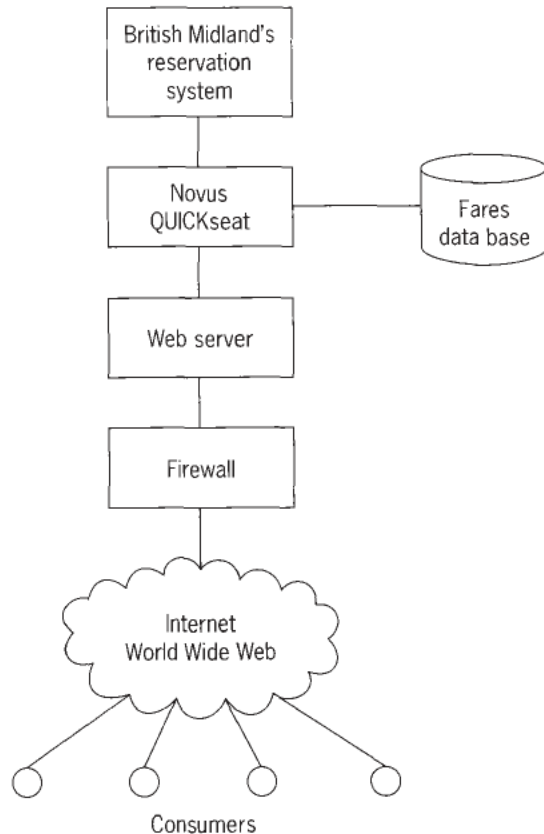


Figure 5.29 British Midland's CyberSeat

being: (a) the trend towards higher booking fees in the future, and (b) the fact that booking fees are fixed and not related to ticket value. While a fixed booking fee may be more acceptable to airlines with long haul routes involving higher ticket values and therefore higher revenues, British Midland exclusively fly short haul routes in the UK and Europe that generate low average ticket values. This makes a fixed GDS booking fee of £4 a very significant proportion of each ticket's overhead costs and was the primary reason why British Midland wanted to introduce an alternative to GDS distribution. On top of this, other distribution costs that are inherent in the GDS and travel agent channel, are also significant. These include communication network costs, travel agents' commissions and travel agents' override payments.

Along with this fundamental objective was a need to increase the effectiveness of the sales process and to increase the revenue generated per

passenger carried. A closer relationship with the customer was also an important objective. The problem that British Midland faced in trying to pursue these objectives was that it was severely constrained by its participation in the major GDSs. Although GDSs are now virtually all neutral in terms of bias, they are nevertheless owned by airlines that are competitors of British Midland. It seemed to British Midland management that the GDSs offered limited opportunities for them to differentiate their airline from competitors. As a direct result of the large stake-holdings that major carriers have in the GDSs, their owner airlines are free to introduce GDS functions that suit their products and differentiate them from their competitors. These airlines can therefore use their GDSs as a means to steal a march on smaller niche competitors by introducing highly customized and specific new functionality; and not all of these new functions deliver differentiators that suit British Midland. So, in this environment, carriers like British Midland could only play a 'catch up' game and this was deemed unsatisfactory within the company. A new distribution channel like the Internet offered British Midland the opportunity to set standards for others to follow and thereby achieve a leadership position.

A number of associated business challenges were faced by British Midland management, not least of which was increased competition. Low cost start-up airlines, such as EBA and Easyjet, were getting established sooner than had been expected. These posed a threat to British Midland's core business – the domestic UK market. Also, in terms of competition, the Eurostar service to Paris and Brussels was beginning to threaten important parts of the company's European business. Other operating issues arising from the complexity of processing airline tickets and the ensuing congestion occurring in airport terminals with insufficient check-in counters, also needed to be addressed. Facilities such as this are expensive because of the high ground rents charged by airport authorities and the need for tight security. But as far as these two issues are concerned, there appears to be light at the end of the tunnel in the form of electronic ticketing (see Chapter 3). With electronic ticketing, the physical security and delivery problems associated with ticket issue could

well disappear and airport check-in could be largely automated with self-service machines. So, with the dual pressures of increased competition and rising operating costs, the time seemed right for British Midland to consider a fundamental change in the way its product was distributed.

The main thrust of any new distribution method was not to take business away from travel agents but rather to relieve the pressure on in-house telesales units by giving customers an alternative to the telephone as a means of making bookings. In other words to go after independent travellers who would normally have telephoned British Midland and enable them to use a more efficient channel that could be serviced by electronic means. After all, travel agents cannot derive an enormous commission from low-value tickets without reducing their cost of sales. So, channelling these ticket sales via an automated route would not adversely affect the travel agency business. Nevertheless, it was recognized that CyberSeat could erode some of the value-added services offered by travel agents. The impact was, however, considered to be relatively small, especially in the early days of any new system.

In considering alternative distribution channels, the Internet appeared an attractive medium. Despite its relatively low numbers of users, its rate of growth was phenomenal and its potential for travel services was considerable. It embodied a comprehensive set of technological standards that reduced the risk of developing redundant applications. Also, there were a range of packaged software tools that could short-cut the development and implementation process. British Midland decided to experiment with the Internet route, but first of all set some important ground rules. The amount of investment in the preliminary system would be minimal and it would have to be up and running very quickly. The business to be targeted by this new channel was the high volume sales of straightforward airline tickets rather those with a higher price tag. This prompted management to start addressing the complexities associated with using the Internet as a commercial distribution channel. Complexities such as: (i) the geographical product distribution issue, and (ii) the potential security risks of taking payment over the Internet without being able to capture either a

customer's signature or a card imprint. These two issues are worthy of some further analysis:

- **Geographical issue** Because the Internet is a global channel, it means that ticket prices must be set on a global basis. Instead of tickets for a flight being priced for the specific economic dynamics of each origin market, they needed to be set globally for all markets. This in turn means that foreign currency exchange rates need to be factored into the equation. It also means that, in the absence of electronic ticketing, physical ticket delivery to overseas customers must be available. For example, a customer traveling to the UK from a foreign destination, such as the USA, with a stop-over in France, would need to be able to collect their ticket to the UK from an airport in Paris. This resulted in a new set of procedures being developed by British Midland to support CyberSeat.
- **Security issue** The next issue was: 'How should payment for air tickets be processed over the public Internet infrastructure?' This issue was carefully considered and it was decided to: (a) only support secure Internet browsers, which incorporate SSL encryption technologies; and (b) to send critical payment fields, e.g. credit card numbers, expiry date and cardholder's name, across the Internet in separate encrypted messages. In this way, even if one of the messages were to be intercepted, not only would it be encrypted but it would only represent a part of the information needed to record a financial transaction. Finally, besides these Internet security devices, British Midland's CRS system is protected by a further three levels of security.

After much deliberation, investigation and research, all of the issues and obstacles were successfully overcome and the Internet route was finally decided upon. British Midland decided to use a multi-media reservations server using Netscape's Commerce Server as the back-bone for the new service. This would be the world's first airline booking system for the Internet with full on-line payment functions. Management decided that this would need to be compatible with future technologies such as interactive television and would of course have to support electronic ticketing and

self-service check-in at airport terminals. An important requirement was that the system should be capable of building and maintaining a customer data base for marketing purposes. As previously mentioned in the above section on marketing on the Internet, this is a fundamental success factor in maximizing *pull marketing* opportunities. Before proceeding with the development, British Midland tested the market by undertaking a survey of their 'High Flyer' club members. This produced encouraging results. They found that around 21 per cent of their customers used the Internet regularly and that 72 per cent used electronic mail.

Following a review of the technical options available, British Midland management decided to develop an interface from its CRS to the World Wide Web. This would provide last seat availability and access to the latest fares, as they are introduced. Several years ago, British Midland decided to outsource its CRS operation to British Airways and use the RTB main-frame computer facility located at Heathrow. It is from the co-hosted RTB CRS computer that British Midland connects into GDSs like Galileo and Sabre (see Chapter 4). British Midland chose Novus, a Guildford-based international group of companies specializing in airline and other travel technologies, to help it develop its Internet channel. Novus developed CyberSeat to run on an IBM RS/6000 server that also uses DEC Alpha hardware, in a UNIX operating system environment. This is integrated with several Internet software products including:

- **QUICKseat** A seat booking application originally designed for the leisure market and developed by Novus. It is a tried and proven software product that has been used by several major carriers to distribute their air reservations products via videotex.
- **Novus Managed Internet Transaction Server** A software product that supports the development of commercial distribution products over the Internet. It makes the development process simpler and faster by the widespread use of proven sub-systems.
- **Netscape's Commerce Server** A software product that provides a secure environment for supporting commercial transactions with functionality to communicate with remote Internet

- browsers. It also provides the core data base platform for new future Internet applications.
- **Novus Reservations Server** This is a key product that enables the user to interact with British Midland's CRS without having to understand the complexities of codes, transaction entries and travel industry jargon fully, all of which are an inherent part of airline main-frame booking systems. It provides: (i) easy to use format conversion routines for the translation of EDI and Internet-based protocols; (ii) rapid response times, using techniques such as the simultaneous processing of outbound and return flight segments; and (iii) provides resilient fall-back support in the event of RTB host line failure.

The server acts as a front-end processor between the British Midland CRS running on the RTB computer, and the Internet. Although the primary interface technology of the new server was based on TCP/IP, i.e. the Internet communications protocols, it would also be relatively easy for British Midland to also support emerging technologies like interactive television. The base application was kept as simple as possible and, for instance, supported full booking and payment but purposely excluded any booking changes because of the complexity of this function. Instead, customers were requested to cancel incorrect bookings and re-book. Despite obstacles such as a two to three week site registration process and following a two-months' development programme with only limited funds, CyberSeat was launched on the World Wide Web in late 1996.

CyberSeat contains a full range of booking and payment functions as well as a great deal of relevant information. Information that includes British Midland's domestic route network, its international route network, Diamond Service, Diamond Euroclass Service, Diamond Club, High Flyers, Timetables, frequent flyer information, phone reservations and customer feedback facilities. To use the CyberSeat Internet service, users proceed as follows:

1. Consumers first of all access the Internet using their PCs, modems and Internet service provider (ISPs) and open the site at <http://www.iflybritishmidland.com>.
 2. Once the British Midland home page is displayed, the users click on the blue oval CyberSeat logo. This takes them to the CyberSeat front page (Fig. 5.30) via a hypertext link.
 - At this stage the users need to ensure that they are using a suitable browser that must be, for example, Netscape Navigator Version 1.2 or higher. A help button allows users to access more information on what browsers and versions are supported by CyberSeat. This also allows users to download the latest version if desired.
 3. From the CyberSeat front page, first time users or those unfamiliar with the site, may select the Easy Book button. More experienced users have the option of choosing the Quick Book button, which provides more functions.
 - *Easy Book* The user views the map displayed on the ensuing Web page which shows all British Midland's routes (Figs 5.31, 5.32). The users click on the origins and destinations of their intended journeys. Outward and return dates are keyed in.
 - At this point the users may either choose to search all available fares or request the system to find the cheapest fare for the origins and destinations specified. The desired fares may be selected by entering the number of seats required followed by a simple click operation to confirm (Fig. 5.33).
 - *Quick Book* The users enter their places of origin and destination cities, travel dates and number of passengers. This results in CyberSeat displaying a table of flights.
 - The users view the available flights from the table and may investigate each option in more detail. Eventually, a flight is selected for each booking (Figs 5.34 and 5.35).
- At this point CyberSeat asks the users to enter their credit card details and to confirm that they wish to purchase the flight selected.
- The users then select how they wish to receive their tickets. This can be: (a) by post to their home addresses (provided the booking is made at least seven days in advance); (b) by collection at the airport, i.e. ticket on departure; or (c) by collection from the customers' travel agents (in which case booking references are quoted).

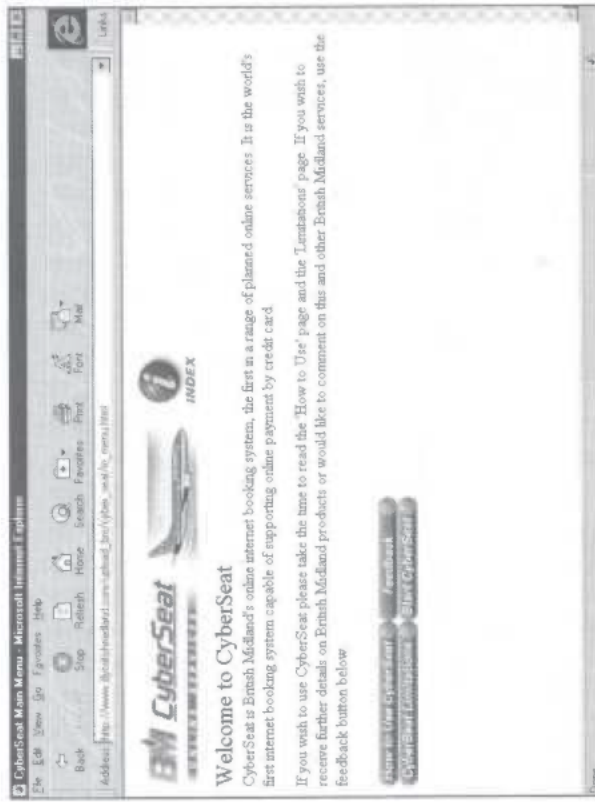


Figure 5.30 The CyberSeal home page (above)

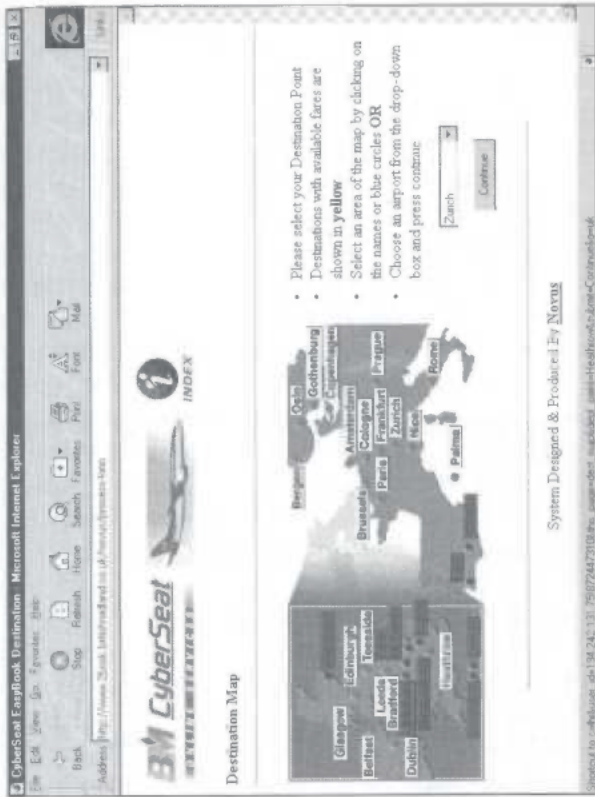


Figure 5.31 Destination map (above right)

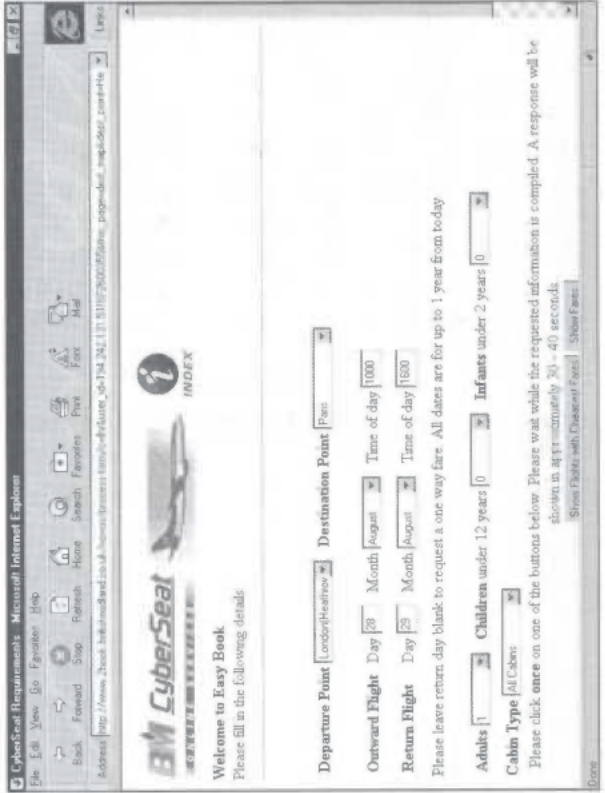


Figure 5.32 Reservations request details

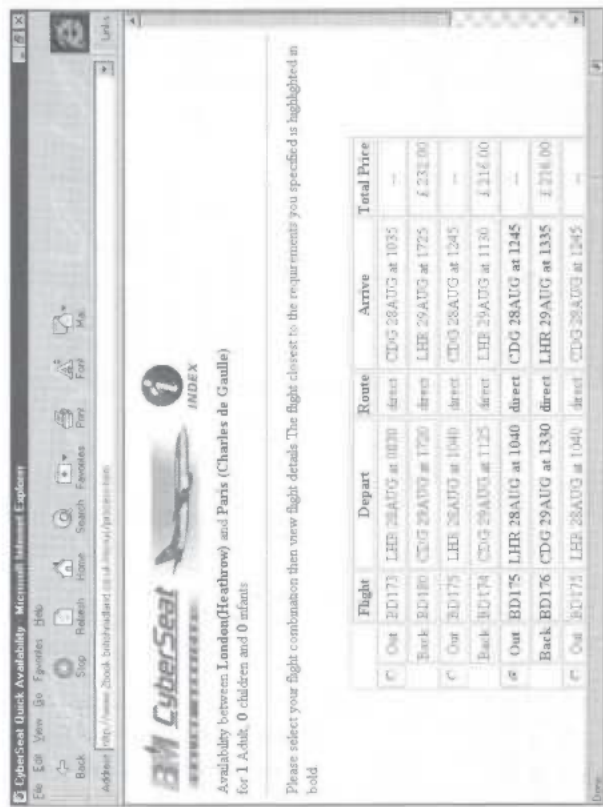


Figure 5.33 Fares (above)
Figure 5.34 Flight details (above right)

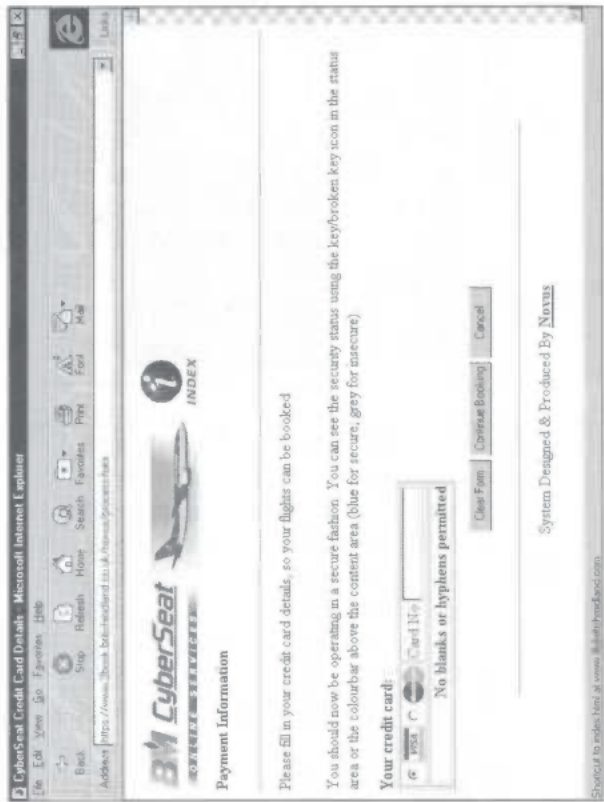
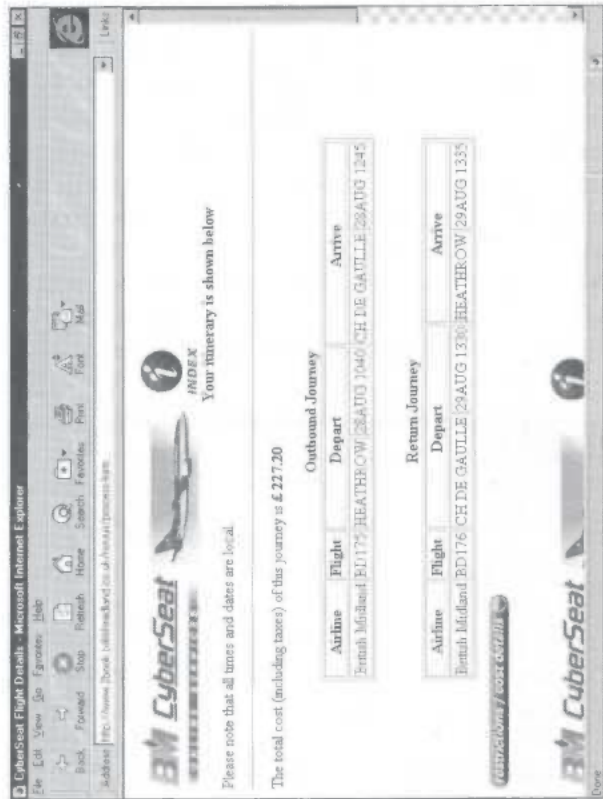


Figure 5.35 Booking screen

CyberSeat proved highly successful and became renowned as the first direct Internet booking system to be developed by an airline. It achieved 5,000 site visits per week and 400 bookings per month against an upper target of 750 bookings per month. This was regarded as particularly successful bearing in mind that electronic ticketing was not available at the time, which meant that ticketing had to be carried out mainly on a 'ticket on departure' basis. Interestingly, it was found that most of these bookings were made by regular frequent British Midland flyers who were making retail bookings. But being an early adopter of the new Internet airline booking technology, British Midland learnt some valuable lessons that could not have been derived from any other sources, such as textbooks, or the prior experience of others:

- First, British Midland underestimated the overwhelming response from customers in the form of e-mail. They received between 250 and 500 e-mail messages each day following the site launch. Most of these were as a direct result of people's interest in CyberSeat. The variety of these e-mail messages was found to be extremely varied. This posed a significant challenge to British Midland whose staff at the time had little experience of dealing with e-mail. It quickly became clear that these e-mail messages had to first of all be categorized and then dealt with by specialists in several areas.
- It was also found that most of the site hits were received over the weekend, mostly on Sunday. This was only natural bearing in mind the cheaper BT rates for local calls outside normal business hours. However, it meant that British Midland had to direct Novus to provide out-of-hours Web site operations coverage in order not to disappoint its customers with the risk of down-time.
- Another finding was the variety of browsers that site visitors were using. For booking and payment functions, British Midland had decided to standardize on browsers that incorporated a high level of security. These were invariably the latest versions of browsers available at the time. Many site visitors were using old versions of browsers that did not support secure encryption and these could not use the

CyberSeat payment functions. In this context, users of Compuserve encountered particular browser incompatibility problems in the area of security. An option was therefore provided to allow users to download the latest version of Netscape's browser (a similar download service is also supported by Microsoft via its own Internet site).

- Originally, CyberSeat asked users to register before being able to browse the site. However, this proved cumbersome and instead, users were only asked to identify themselves as part of the booking and payment processes, using the details of their plastic cards.

Looking to the future, British Midland has been able to build on the success of its CyberSeat experience to plan ahead. It is considering a travel agent product that could be based on a new Intranet approach. In effect this would encourage travel agents to book British Midland via the Intranet instead of using their GDS connections. The Intranet would also have several other important spin-off benefits within the company, such as changing the culture to increase staff empowerment levels, increasing team working, fostering more open communications and sharing corporate information more widely and easily.

MARRIOTT

Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is Marriott's central reservation system, MARSHA (you can find more information on MARSHA and Marriott's interconnection to GDSs in Chapter 3). The latest version of MARSHA, known as MARSHA III, incorporates the functionality necessary to support Marriott's new Web site, which may be found at <http://www.marriott.com>. This is a popular Web site that was launched in 1996 and regularly receives millions of hits each month. These hits generate over US\$1 million per month in hotel revenue and consequently rank Marriott within the world's top 5 per cent of all Web sites. The growth rate is also startlingly high at 100 per cent compound, month on month.

Marriott has been highly successful in using the GDS and HDS networks to distribute its accommodation services to travel agents around the world (see Chapter 4 for more information on GDSs and HDSs). This is illustrated by the fact that one in every five GDS bookings is for a Marriott lodging product. However, things do not stand still for very long and Marriott is faced with a rapidly changing distribution market, just as other travel industry suppliers are. The forces for change that are most relevant here are: (i) industry studies are forecasting that the number of travel agents will decline over the next few years, particularly in the USA; (ii) the Internet clearly has significant and proven potential as a distribution network for direct selling to consumers; and (iii) GDS booking fees cost several USA dollars per confirmed reservation, whereas the equivalent cost to make a booking on the Internet could be considerably less.

Alternative distribution channels other than GDSs therefore became a hot topic at Marriott a couple of years ago. The Internet was found to be especially attractive because it would enable Marriott to convey the details of its properties to the consumer in an interactive graphical way using pictures of properties and rooms, videos and virtual reality models, diagrams of floor layouts and maps of how to get there. Quick time virtual reality (QTVR), developed by Apple computers, makes use of 360° imaging technology, which enables a potential customer to actually look around the room they are considering booking by simply using a computer mouse. Also, the Internet's potential for direct relationship marketing was a powerful reason behind the company's decision to embark upon an Internet experiment. This resulted in Marriott's first World Wide Web site, which cost approximately US\$1 million to develop and implement. By building on the success of this initial site, the development of subsequent versions has increased Marriott's Internet expenditure considerably.

Before its site could be created, Marriott had to overcome a significant technical architectural challenge. Its MARSHA system is based on operating software called transaction processing facility (TPF), which runs on an IBM main-frame. This is totally incompatible with the TCP/IP communica-

tions protocols used by the Internet. Although it was relatively straightforward for Marriott to connect an interface server to MARSHA for text, graphical images and information management, the reservations functions were another matter. To build its own Internet booking engine with an on-line interface to MARSHA could be done from a technical viewpoint, however, it would be quite costly. Marriott decided to postpone this major development until: (a) the demand for access to these functions increased, and (b) Marriott understood more about using the Internet as a marketing and booking channel. So, in the meantime, what was the answer to Marriott's Internet booking problem? Well, the answer was a very pragmatic decision taken by Marriott management, which was to use the Cisco hotel switch as the interface to MARSHA. The Cisco switch (which is explained in more detail in Chapter 4 in the section on distribution systems), was designed with an in-built capability to handle both TPF links to hotel systems and, via its TravelWeb booking engine, TCP/IP for Internet traffic.

So, Marriott's Web site is based on multiple Internet servers, located at its USA headquarters, that connect directly into the World Wide Web via the UUNET/Pipex ISP. (Fig. 5.36). These servers handle all incoming Internet traffic for www.marriott.com and respond directly to all information requests. They are fed with information from two sources: (i) a link to the MARSHA system that supplies information on such items as property descriptions, room rates, hotel addresses, facilities and so on; and (ii) other input supplied by picture scans, graphical images and mapping systems as well as some HTML text maintained by Marriott staff. However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down the direct connection to the TravelWeb Internet booking engine are routed to the Cisco switch, which passes them on to MARSHA. The MARSHA system checks its room inventory data base and formulates a response, just as though it was a regular Cisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the message to the consumer. It may sound

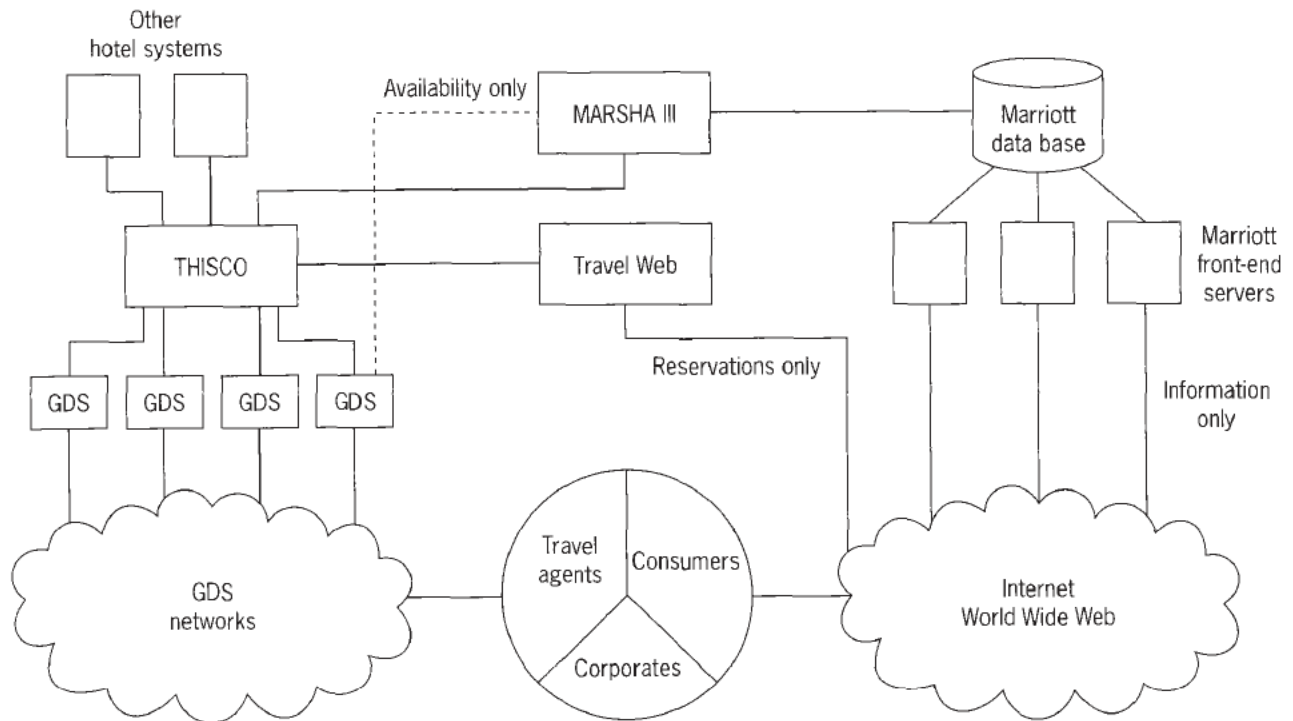


Figure 5.36 Marriott's internet connection

like a rather convoluted route but it still only takes between 2 and 3 seconds for MARSHA to respond to an Internet booking request with a confirmation number.

The beauty of this approach is that it maintains the stand-alone integrity of Thisco and TravelWeb. Neither of these systems need to hold a data base of rates or rooms. All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott's hotel information on other servers. Another benefit is that it saves Marriott from having to develop a complex and costly booking interface to MARSHA. Having said this, if the volume of traffic handled on Marriott's Internet site grows substantially, then it may, at some point in the future, become attractive to develop a direct interface such as this. Only time will tell if this is economically feasible.

Besides being able to handle on-line consumer bookings automatically, there is one other important benefit of Marriott's Web site that I would like to explore in a little more detail. This is the production and distribution of printed brochures

or what people in the industry call 'Collateral'. The kinds of brochures I am talking about here are not just restricted to a property flyers containing pictures and general descriptions. While these standard documents obviously exist, there are many more customized brochures that are printed specifically for corporate clients. These brochures include the usual pictures and descriptions, but they also contain a lot more. They invariably contain a full set of room rates that have been negotiated especially for the corporate company. Taken on a global scale, these brochures cost a small fortune to print and distribute. They also have a short shelf life. In other words because rates change and facilities are updated, the brochures quickly become out of date and must be scrapped. Not only is this a waste of the world's resources but it is also very costly. The Internet offers a solution to this problem.

Marriott views Internet sites as falling into one of three possible categories: (i) Shopping Malls, (ii) Supermarkets and (iii) Boutiques. The Shopping Malls are large sites that provide access to all kinds of suppliers; a particularly good example is Microsoft's Expedia. Supermarkets are sites that

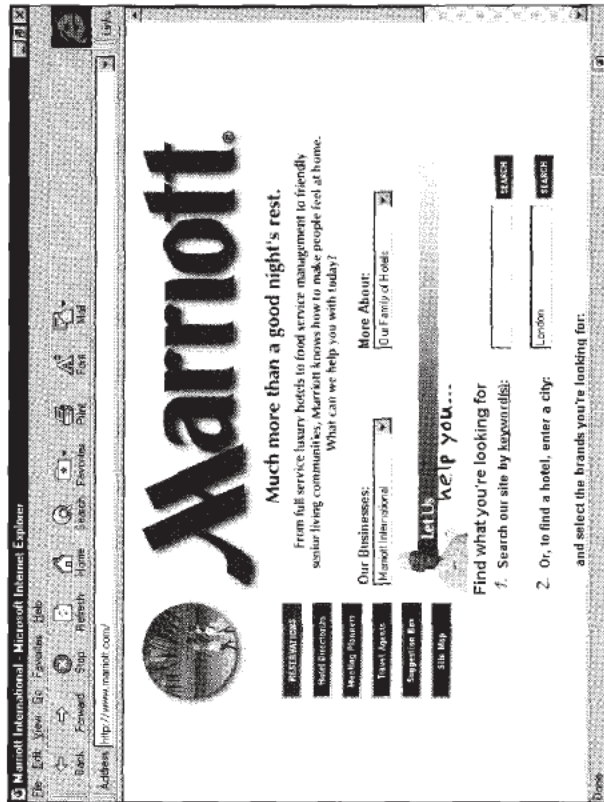


Figure 5.37 Marriott's home page (above)

Figure 5.38 London hotel rates (above right)

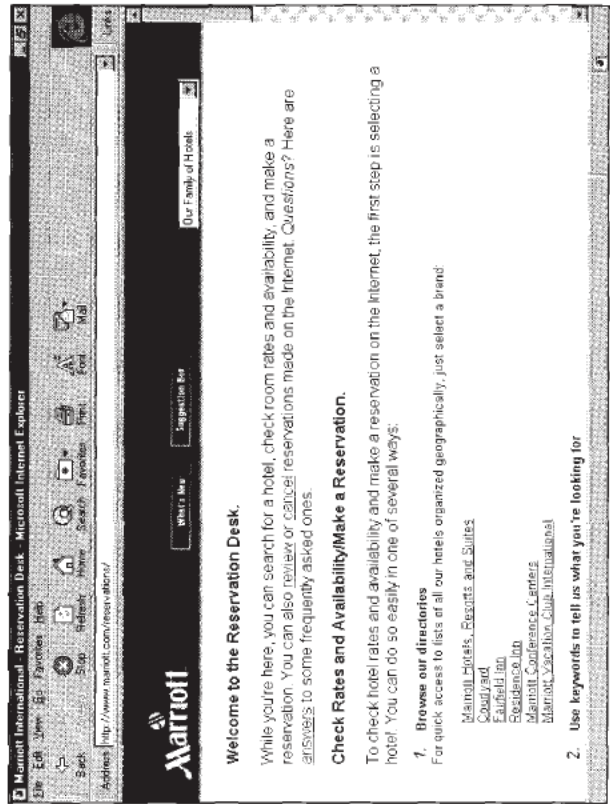
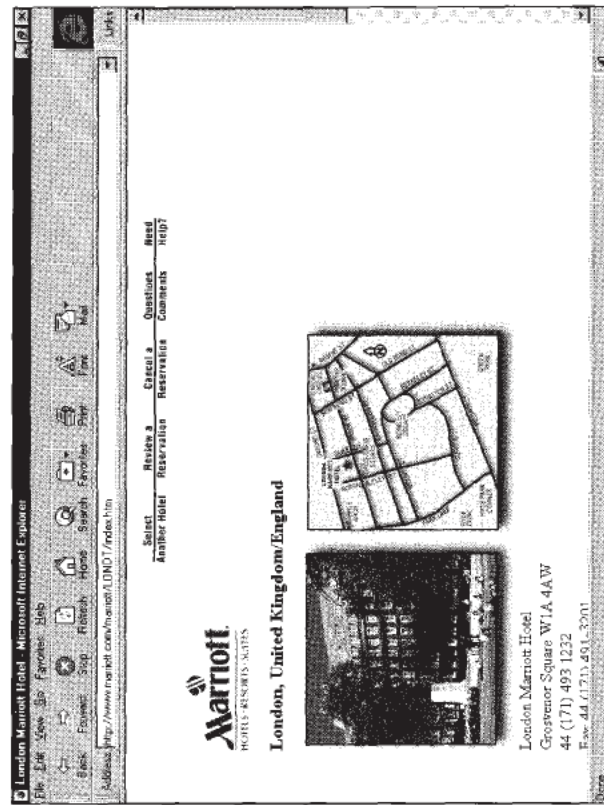


Figure 5.39 Reservations information



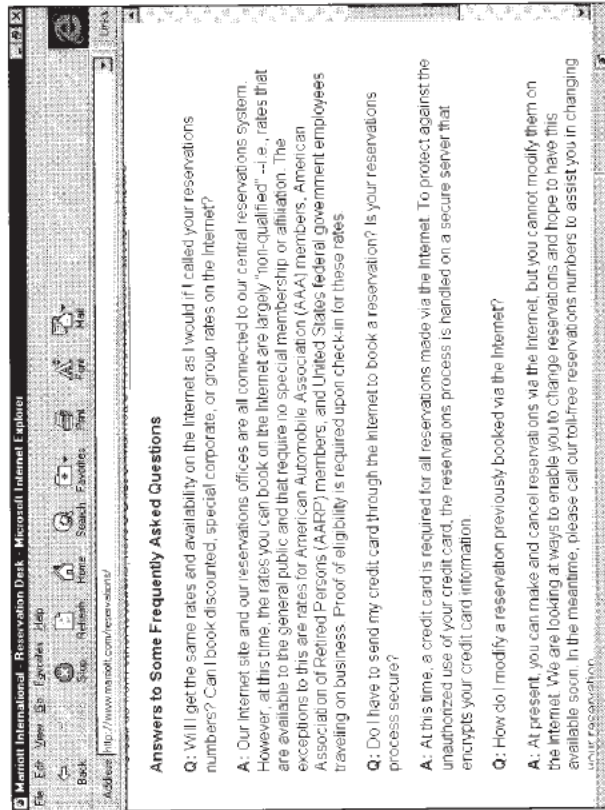


Figure 5.40 Q&A on booking procedure (above)

Figure 5.41 Rates in London hotels (above right)

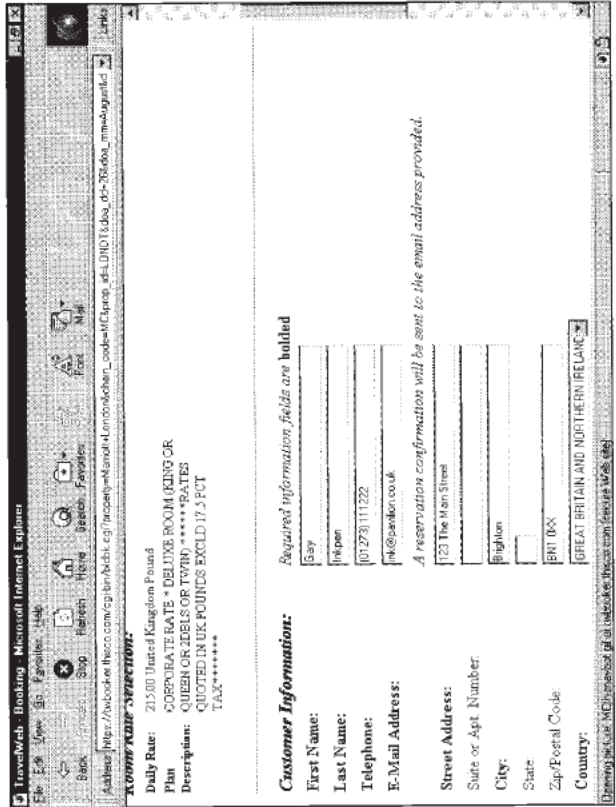
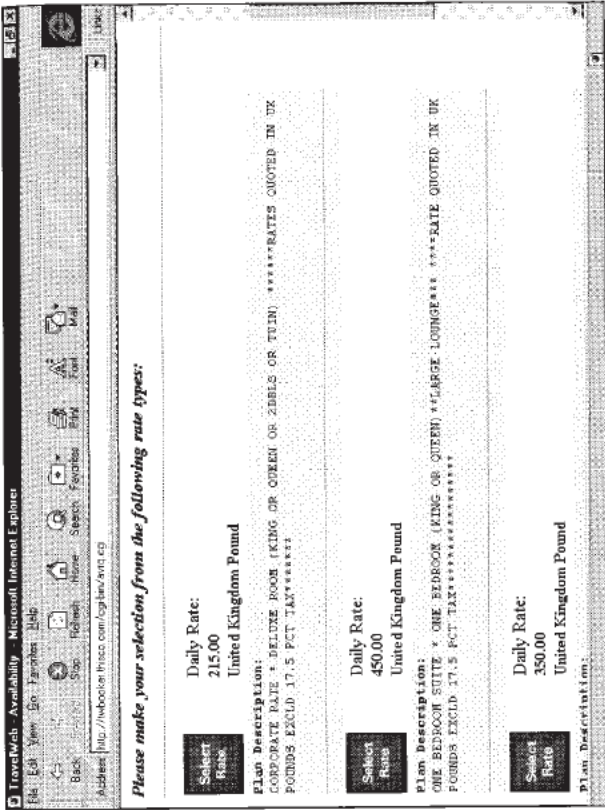


Figure 5.42 Booking screen

allow the consumer to purchase a wide variety of travel products; examples include TravelWeb and Travelocity. Boutiques are the smaller niche sites specializing in a single product only; good examples are Marriott and British Midland. This is a helpful analogy in today's retail Internet environment. Marriott belongs to several of these classifications. It participates within a Supermarket by way of its presence in TravelWeb but because it has its own site, it is also a Boutique. Boutiques can respond more quickly to environmental changes by introducing enhancements to meet the needs of the developing global hospitality market. Evidence of this can be found if we compare Marriott's original Web site with the latest version released in May 1997. The original site was highly customer focused and enabled visitors to carry out a wide range of functions including: (a) check availability, (b) view rates and conditions, and (c) book rooms. In May 1997 these basic functions were enhanced to include:

- **Interactive mapping** This is a USA-based mapping facility that is supported by a data base of 16 million points of interest and major business locations. The user simply enters his/her departure address and the site responds with a route map of how to find the nearest Marriott hotel. This map may be downloaded and printed by the user.
- **Enhanced search capabilities** A search engine has been introduced that enables the user to specify a number of search criteria including, for example; property features, meeting space attributes, nearby airports and geographic location.
- **Simplified reservation process** The number of clicks and keyboard entries required to book, confirm and cancel Marriott reservations has been reduced by enhancing the user/system dialogue.
- **Improved navigation** Some of the pages have been re-structured and re-indexed thus allowing users to find their way around the site more quickly and efficiently.
- **Meeting planning data base** A new section has been added to the site's data base that includes more detailed information for those who need to arrange meetings and conferences for their companies. The new information in-

cludes function room space, room dimensions, capabilities and floor plans.

- **Travel agent area and commissionable bookings** Marriott pay travel agents full commission on reservations made for all published transient rates that are booked via the Internet site.

Other services make use of the Web site infrastructure. For example, the secure payment processing functions have enabled Marriott to introduce the sale of Marriott Gift Certificates in denominations of US\$25, 50 and 100, which may be paid for by credit card. Marriott is now increasing the use of e-mail for marketing purposes and plans to introduce some interesting new initiatives in the next phase of development. This will include a Concierge Service that will remind customers via e-mail of personal gift giving dates, anniversaries, birthdays and other events. No doubt Marriott will continue to develop and grow its site to meet the ongoing demand generated by Internet consumers. It will be interesting to observe how bookings shift between GDSs, travel agents and consumers as time marches on. No doubt Marriott, like many other travel vendors, would like to see a lot more business being done directly with its customers in both the leisure and business areas. If this does happen, the impact on GDSs and travel agents could be significant.

UTELL'S HOTELBOOK

Utell's Web site (Fig. 5.43) branded Hotelbook was launched in November 1996 and may be found at <http://www.hotelbook.com>. Utell intends this to become the world's premier hotel site on the World Wide Web. The number of locations featured will grow from 3,000 to over 6,500, thus embracing the entire portfolio of Utell's international hotel customers. The site is designed for use by all Internet consumers, be they individuals or travel agents. However, because only about 28 per cent of the world's hotel bookings come from travel agents, there is a significant opportunity to attract automated hotel bookings directly from the consumers, which represent the other 72 per cent. The following presents the major highlights of the Hotelbook site:

- **The basic Hotelbook service** Utell's participating hotel customers are allocated three Web pages within the Hotelbook site, free of charge. Each hotel is represented by at least these three free Web pages, which include:

1. *Welcome* A page that shows a full colour 35 mm photographic image of the property together with a full textual description. A menu of further information is provided, along with the hotel's own e-mail address.
2. *Features* Information that describes the hotel, its location, facilities and services using text and a graphical image (Fig. 5.44). Scrollable windows on this page show the hotel's features and services.
3. *Rates* The rates for each hotel, which are shown within a series of pages automatically generated from the information stored within the core Utell system (see Chapter 4 for more information on Utell's systems).

Consumers navigate their way around the site by means of a powerful hotel search engine specifically designed for Hotelbook.

- **Hotelbook's magazine** In addition to the product information, Utell's Hotelbook also includes travel news and information. This is sourced and edited by the Frequent Flyer magazine, which also provide sections on entertainment and current promotions. Hotelbook includes special awareness information on Utell International Summit Hotels, Insignia Resort and Golden Tulip Hotels, all of which are owned by Utell. Each of these pages allows each hotel to promote its own marketing partner, spread awareness of its special promotions, describe its products and distribute press information. The site also has a number of interesting features, two of which are: (i) a weather link that enables guests to review the weather reports for the time of their stay at their chosen hotel, and (ii) a rates conversion facility that enables customers to view rates in their own local currencies.
- **Electronic Brochure product** Participating hotels may elect to expand their coverage by purchasing five additional Web pages of their own. These can be used to promote information that is relevant to their own locations, such as:

- *Meeting facilities* This can show images of meeting rooms, a description of the specialized meeting services available and the various meeting room hire rates.
- *Location* This page can include a map of where the hotel is located, a description of how to get there and a list of nearby attractions.
- *Room facilities* Pictures of the property's rooms can be shown as well as a description of the facilities available in each type of room.
- *Dining facilities* Again, a full colour photographic image of each dining room can be shown along with links to other optional pages.
- *Recreational facilities* Pictures and textual information enable the hotel's full range of recreational facilities for the use of its guests can be shown on this page.

Extended hotel pages are particularly appealing to smaller independent properties that may not wish to invest in developing and running their own sites. Utell International is able to provide consultancy advice and guidance as well as Web page design services to hotels using these extended pages.

- **Group Display product** This is aimed primarily at larger hotel groups, i.e. those that are part of a group of ten or more properties. It enables them to promote their properties using a common corporate marketing message. This is supported by one of Hotelbook's optional features – the Group Display product, which is a sort of Web site within a Web site. This enables a hotel group to use several Customization features such as:
 - A branded home page of its own design (Fig. 5.45) – this is the first page that the consumers will see when they enter the URL of the hotel group (besides distinctive logos and product branding, this page can show special offers and promotions).
 - A customized colour scheme for all pages in the hotel group's site – this adds consistency and uniqueness of product from a marketing and product design perspective.
 - Supplementary pages to promote products – the hotel group may have special products,



Figure 5.43 The Hotelbook home page (above)

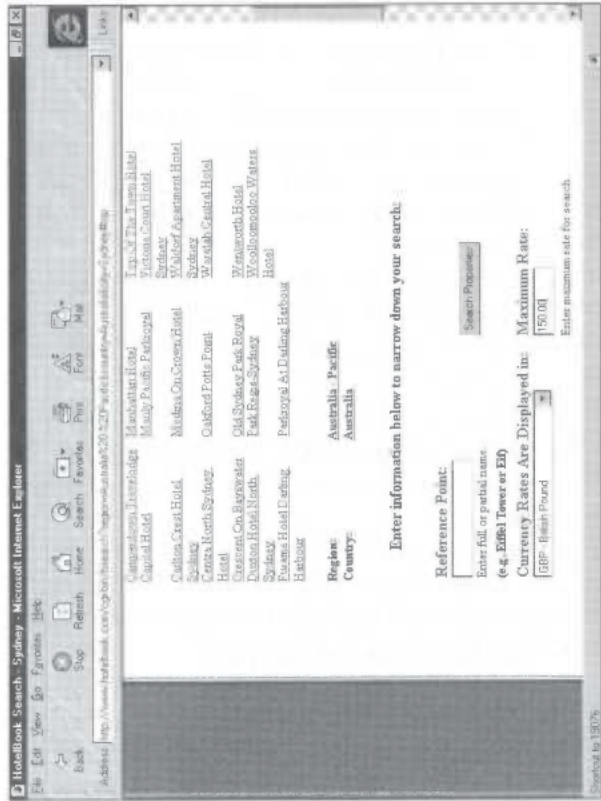


Figure 5.44 Search criteria for hotel (above right)

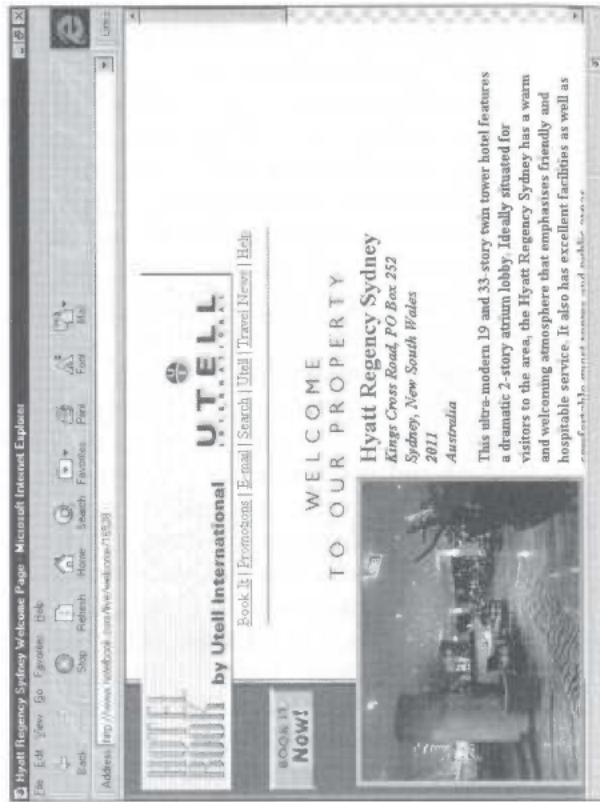


Figure 5.45 Hotel page

unique to them. These may be explained and presented pictorially on special graphical Web pages.

- Partners and promotions – pages may incorporate hypertext links from the hotel group's own page or pages, to strategic partners such as frequent flyer sites.
- The ability to default Hotelbook's search engine to the hotel group's specific brand – this means that when consumers visit the site, their searches of the Utell hotel data base will always default to displays of the group's own properties.

The Group Display product is ideal for small- to medium-sized hotel groups because it allows them to enjoy the benefits of a full presence on the World Wide Web without the overheads of running their own sites.

- **Hotelbook reservations** To make a reservation via Hotelbook, a consumer has three options: (i) they may call any one of Utell's 52 telephone reservations offices around the world, (ii) they can send an encrypted e-mail message to the Utell Web server, or (iii) they can use Hotelbook's on-line booking system. Consumers who are nervous about entering their credit card details into the Internet will probably be attracted to the first option. However, there are many advantages to the second, more convenient method. One advantage is the return of a positive booking confirmation within 30 minutes of the original secure e-mail message being sent. However, because this is rather slow in today's instant 'here and now' business environment, Utell has developed a full on-line booking system. The on-line booking system produces a return confirmation within 7 seconds.

Hotelbook is marketed primarily through strategic business relationships. This means that Hotelbook can provide other Web site providers with a hotel information and booking system as an integral part of their site. This allows Utell International to benefit from the Web site's strong brand name and enables the Web site partner to offer a full hotel product, which may not be possible for them to do alone. For example, a national newspaper may have a site that enjoys

a high hit rate on information that is not solely accommodation based. The newspaper may decide to add a 'places to stay' guide. This can be provided to their site visitors via a hypertext link to Hotelbook. The link would be almost transparent to the consumer who would see Hotelbook pages modified and customized to the newspaper's own particular 'look and feel'. Other examples may be drawn from airlines, car rental companies and tourist board sites.

The development of this site is an example of Utell's belief and commitment to the Internet. The reason I say this is because the site is not expected to generate significant revenues for some years. In fact, in its early years, Hotelbook will be very much a loss-leader product. Revenue streams are primarily expected to be derived by charging hotels a commission for reservations delivered via the Internet channel. However, a secondary source of revenue will come from selling the Group Display and Electronic Brochure products. Some revenue may also flow from offering the hotelier on-line advertising opportunities. All of these revenue streams will no doubt take some time to develop and will not become significant until the critical mass of the Internet is reached.

INTERFACING SUPPLIER SYSTEMS TO THE INTERNET

There are many countries where non-air products are distributed to travel agents and consumers by old technology, like videotex in the UK, or by proprietary national distribution systems, such as START in Germany and Esterel in France. These systems often limit their suppliers in terms of what can be offered to end users and how their services can be extended to other markets. End users frequently compare them to Windows-based systems and the Internet, against which they look decidedly dated. Take Videotex for instance. Many of the current videotex systems that are widely used by UK travel agents to book package holidays have been around for the past 20 years. These systems are cumbersome to use because they are character based, slow to respond to user's requests because they use old telecommunications technologies, subject to data corruption if accessed over dial-up lines and very limited in terms of their

appearance. The new Internet technologies offer suppliers a solution to most of these problems, while at the same time opening up completely new distribution opportunities.

The supplier's problem to date, however, has always been; 'How can these new distribution technologies be used to boost bookings without incurring substantial development costs to replace in-house legacy systems?' One possible solution is to combine various new software technologies with standard Internet tools to produce an interface that supports both Intranets for private or limited access and the Internet for public access by consumers. This means that end users, whether they be travel agents or consumers are then able to access the supplier's core legacy system using standard Internet browser software that runs on virtually any PC. A new company that has recently entered this field is Gradient Solutions (a trading name of NewPage Systems Limited), based in London.

Gradient offer travel suppliers the opportunity to interface their legacy systems to the Internet while also improving the quality and usability of their booking screens. This has the dual benefits of: (a) enabling the supplier to continue using legacy booking systems without the need for any costly systems changes; and (b) allowing end users, whether they be consumers or travel agents, to enjoy the benefits of simple and dynamic Web-based pages of information for booking purposes. Gradient offers these services to suppliers in one of two possible ways, either:

- **Facilities management** The supplier contracts the development and operation entirely to Gradient who runs the interface software on its own computers. The Gradient computers are Sun Netra Web Servers, which use Cisco routers and fibre-optics to link both to the Internet and the supplier's legacy system, by high speed data lines. This computer has an uninterruptable power supply and incorporates firewall software to prevent unauthorized access to other parts of the system, virus detection routines, secure encryption algorithms and tape back-up systems. It runs 24 hours each day, seven days per week and reports on the number of end-user site visits and bookings made, for each supplier.

- **Supplier's Internet server** For suppliers that already have their own Internet or Intranet server computer facility, the Gradient interface software can be added. This software comprises several layers including: data communications, legacy system interconnection, legacy-to-Web middle-ware, added-value business logic and World Wide Web presentation. Once developed and loaded, however, the responsibility for running the network and handling the security issues lies firmly in the hands of the supplier's own IT department.

The interface software does more than simply convert a legacy screen format into an Internet page. It also enables new dialogues to be implemented by combining data from more than one legacy system screen into a brand new Internet page, complete with drop down lists, check boxes and radio buttons. An Internet-based approach also enables suppliers to distribute a great deal of descriptive information about their products to end users. This information can be created and stored using HTML techniques. This can be linked to booking response screens to create new items of information for users. Finally, the new pages can easily be 'e-mail enabled'. This means that when a user wants to receive more information, personalized to their own situation, they can request an e-mail response from the supplier. It is far easier and (perhaps more importantly), far more cost effective, for a supplier to respond to a prospective or current customer in this way, rather than by using the telephone.

But the overriding benefit of this approach is the ability of Internet-based technologies to broaden the reach of travel suppliers. A supplier may, for example, decide that the first step along the road towards a more widespread distribution strategy might be to open their system up to a specified group of travel agents, perhaps in a certain area of their home market. This is characterized as the Intranet approach. It allows the supplier to retain a tight level of control over who can access their system and what functions are provided. Later, when a sound base of experience has been accumulated, the supplier might decide to open the system up to all travel agents in their home domestic market as well as some overseas

agents in other countries. Finally, the supplier has the option of allowing consumers to access the system on a global basis. This final step may involve some tailoring of the system to make the functionality less complex for the occasional, untrained users. The important point is, however, that the basic infrastructure can remain relatively unaltered. The supplier may continue to use their legacy system and is able to control the degree of system roll-out without being hampered by costly changes to their core system. In summary, a Web-based distribution system for travel suppliers offers the following advantages:

- The screens are easier to use than many legacy systems and other national distribution systems like videotex, START and Esterel, which means training is minimized.
- Screens appear more high-tech and can incorporate graphics and images that enhance the image of the supplier company.
- Several legacy system screens can be integrated into a simpler and more comprehensive end-user page with up-front editing that can speed up the booking process and reduce the transaction load on the supplier's central computer system.
- The booking process reflects the current business logic of the legacy system upon which the new Web-based distribution system is based.
- The Web page can be presented in the end user's own local language. Pages can be constructed as and when needed in most languages.
- Tariffs and fares can be displayed in the local currency of the country in which the travel agent or consumer is located.
- Core legacy system booking products can be integrated with fringe products such as travel insurance and foreign travel money to generate new revenue streams.
- The use of HTML techniques enables the supplier's Web site to incorporate an electronic brochure that describes the supplier's products in pictorial as well as textual terms.
- An on-line Web site enables suppliers to offer special promotions such as last minute bargains, late availability and the re-sale of cancelled bookings.

The key economic statistic that suppliers will no doubt use to determine whether or not to interface

their systems to end users via the net, is the relative cost to receive a customer booking via the telephone versus the equivalent cost over the Internet. Because it is estimated that a typical telephone booking costs around US\$10 and an Internet booking costs only US\$0.50, you can see that there is a powerful argument for suppliers to consider this approach. The costs involved are really threefold: (i) there is the cost of developing the interface between the supplier's legacy system and the Web server, (ii) the facilities management charge for running the travel agent Web site, and (iii) a unit charge of around US\$0.50 for each booking made over the network. With Internet-based solutions such as those offered by Gradient, it is possible that the long awaited migration from videotex to PC-based booking systems is about to commence.

Business travel on the Internet

Much of the above has focused on the way suppliers use the Internet to make direct contact with leisure travellers in their homes. But another significant opportunity is to use the Web to support business travellers and the companies for whom they work. Not only are suppliers entering this field but so are GDSs, travel management companies and new suppliers. Using the Internet for business travel functions is particularly attractive because: (a) business travellers are relatively sophisticated and are sufficiently confident to make their own travel arrangements, (b) business travellers often carry their own lap-top PCs with them when they travel, (c) many companies are seeking to use technology to increase the effectiveness of their travel policies, and (d) networking is an excellent way of integrating the complete business travel cycle from trip planning, through ticketing to expense reporting and administration. So, all in all, there are some very compelling factors that make the Internet an excellent platform from which to launch the next generation of business travel support systems.

As a result of advances in the field of technology, there are now a number of new travel oriented Internet sites and associated tools. While

some of these are perceived as posing a threat to travel agents, some maintain the travel agent firmly in the loop between the customer and the suppliers. However, there is no doubt that the use of business travel Internet-related technologies will change the role of the travel agent considerably. One leading site is American Express Interactive (AXI), developed by American Express.

AMERICAN EXPRESS' AXI

American Express is uniquely placed to provide an integrated business travel management service because it operates two components that are critical to the success of a company's travel needs: (a) a global business travel service that is provided by a network of offices in most major countries of the world, and (b) a comprehensive range of card services, many of which are focused on controlling company expenditure. These two critical ingredients have now been combined with the technological capabilities of Microsoft to create the next generation of business travel services delivered over the Internet. It was in July 1996, that American Express and Microsoft announced a strategic alliance jointly to create an intuitive corporate solution for on-line air, hotel and car rental reservations (Fig. 5.46).

Over the course of the next year or so 'project Rome', as AXI was initially called, was developed by staff from both companies. In developing AXI, American Express has used the Microsoft Travel

Technologies (MTT) platform, a suite of software products that specifically support Web-based travel applications. The result of the development programme is an Internet-based system designed initially for the USA corporate travel market called AXI. AXI was launched by American Express in July 1997 at a leading USA business travel conference held in St Louis in the USA. This initial product is designed for USA companies that want to provide their employees with the convenience of end-user travel management tools while at the same time retaining the control necessary to maximize their overall travel budget. American Express plan to launch an international version of AXI in 1998.

The AXI product is an integrated set of travel management services (Fig. 5.47) that uses the Internet as its distribution medium. It takes a holistic approach to business travel. By this I mean that it is built around the business travel life cycle, which comprises: (a) establishing and maintaining the company's travel policy, (b) supporting travellers with their trip planning activities, (c) making reservations and bookings either prior to the trip or modifying arrangements during a trip, (d) ticketing and boarding, (e) processing payment and expense reports (normally the paperwork bane of a traveller's life), and finally (f) providing management information that can be used by the company to negotiate better deals with suppliers and closely monitor internal expenses. Let's take these stages of the business travel life cycle in more detail and explore how AXI supports each one.



Figure 5.46 The AXI home page