



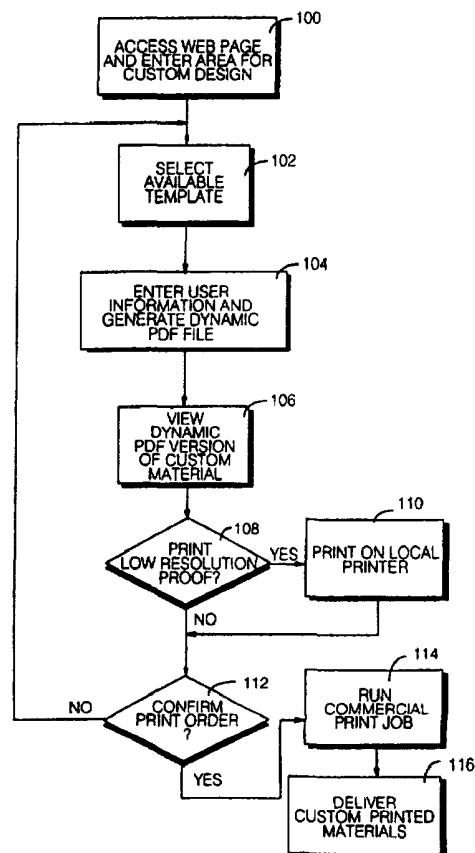
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(54) Title: PROOFING SYSTEM UTILIZING DYNAMIC PDF TECHNOLOGY FOR THE INTERFACE FOR TEMPLATED PRINTING

(57) Abstract

A technique for easily creating and proofing customized printed material before printing on a production printing system. A user may connect with an internet web site provided by a commercial printing service and select from a plurality of available templates for the printed material. The user can then select additional stored information to be included in the customized printed material, or can input variable information through a keyboard or the like. A portable document format (PDF) builder generates a dynamic PDF file from the selected template and the selected or variable data from the user. The dynamic file can then be displayed at the front end to provide an accurate view of how the printed material would look. Additionally, a hard copy proofing version of the printed material may be printed at the front end. Once the layout of the printed material is confirmed, a production printing system is used to print multiple copies of the customized printed material.



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**PROOFING SYSTEM UTILIZING DYNAMIC PDF
TECHNOLOGY FOR THE INTERFACE FOR TEMPLATED PRINTING**

5 **CROSS REFERENCE TO RELATED APPLICATION**

This application claims the benefit of United States provisional patent application No. 60/024,179, filed August 20, 1996, which is hereby incorporated by reference in its entirety.

10 **BACKGROUND OF THE INVENTION**

The present invention relates to a technique for creating customized documents or other printed materials. More particularly, the present invention relates to a
15 technique for creating customized printed materials utilizing template formats, stored reference information and user input data.

It is desirable in modern printing systems to allow a user to readily customize printed materials for a particular need. For example, a user may select stored images and combine them with user specified input text and stored references to produce a
20 point of sale (POS) display or the like. Such a "response on demand" system increases production flexibility and simplifies the design process. With the growing importance and availability of the Internet, the possibilities of such a response on demand system increase greatly.

National or regional retail chains, for example, often require large numbers of
25 point of sale displays for use in their stores. These point of sale displays are typically printed to order by a commercial printing service and distributed to the various stores for use. Other types of businesses or organizations which frequently utilize point of sale displays include soft drink bottlers or major breweries that provide promotional materials to networks of distributors, cellular telephone service providers, trade
30 associations, and others.

The need for customized printed materials, of course, extends beyond point of sale displays. For example, direct mail marketers continually develop advertising flyers

and coupons which are sent through the mail to prospective customers. Event planners and promoters may need printed materials for use in promoting concerts, sporting events, live theatrical performances, etcetera. Similarly, various organizations sometimes utilize custom printed materials to announce seminars, annual meetings, and the like. In other words, the possible applications for customized printed materials are virtually unlimited.

Custom promotional materials often change on a weekly (or even more frequent) basis. Additionally, it is common for a user to need the materials in a short time frame or to desire changes at the last minute. Accordingly, it is desired to provide a system for creating customized documents which permits optimal flexibility in design, and which promotes efficiency by allowing a user to easily create, proof and edit custom printed materials in a single session.

Customized printed materials, particularly when ordered in large quantities, can cost substantial sums of money. As a result, it is especially important to ensure that the design of the customized printed materials is satisfactory before large volume print jobs are run and delivered. If the design is not verified prior to printing, it may be necessary to incur additional expenses associated with redesigning and reprinting the order or, alternatively, a user may be forced to accept a less than optimal finished product. Thus, an accurate and simple technique for proofing customized printed materials prior to confirming print job orders is desired.

Variable printing capabilities utilizing existing XLC printing technology may be demonstrated for response-on-demand applications. In such a system a user can connect to an Internet WEB site and make a request for a publication by providing some variable or selectable data that would be used to create a form based on the layout instructions. The final document would then be assembled for later printing. The available selections may be generated from a database which contains the references, possibly some other object specific data, and, if graphic images are required, the low and high resolution images.

After the data was provided, such a system could then build dynamic HTML (Hypertext Mark-up Language) pages for viewing in the internet browser and proofing. The pages may be built on the references selected by the user on the main HTML page. The low resolution images of the referenced images could be used in building the dynamic HTML page. However, attempts to mimic the real layout of the document to be ultimately printed are difficult because with the HTML standard there is a limit of how closely the HTML pages match the final printed pages in appearance. Moreover, differences in appearance are usually device dependent and may vary from user to user.

If the selections were confirmed, the records with the selections that consisted of the references to the selectable objects (including the images) from the database and the user provided variable data (name, address, etc.) were fed into the XLC system, which uses the template information, high resolution images referenced on the records, and the variable data from the records to do the final printing.

One problem with this system is that the printed pages do not always look the way the users thought they would based on a viewing of the HTML page. As a result, the finished product may prove unsuited for its intended purpose, and the customer would need to redesign the printed materials – costing time, money and effort. Accordingly, a proofing system that would accurately show the users how their selections would look in print before the orders were sent for printing is highly advantageous.

BRIEF SUMMARY

In accordance with one aspect of the present invention, users are provided with a visual representation of a template for customized printed materials before user data is entered so the user can better understand and visualize how the data will ultimately be placed in the final document. The templates may be imaged and then presented on an HTML internet web page in Portable Document Format (PDF). The users could see

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