

initiated by R.R. Donnelley in October, 1989.⁷ Mark Fleming, the manager of that operation, coined the term “Books on Demand,” as a promotional title. That operation printed nearly 60 million pages in its first year.

In mid-1950s, with the introduction of the Xerox Copyflo II machine, which produced hardcopy output from microfilm, true print on-demand technology arrived.

In 1962, the company was purchased by Xerox Corporation, and in 1985 it was acquired by Bell & Howell, and renamed Bell & Howell Information and Learning (800 521-0600, <http://www.umi.com>). Today, it maintains the rights to produce and sell copies of over 150,000 out-of-print titles. These titles, primarily stored on microfilm, with the remainder on paper, are produced manually.

The number of new book titles introduced each year is staggering. It generally exceeds 200,000 titles at the annual Frankfurt Book Fair, which is among the largest, and perhaps, most representative in the world. With such a high number of titles, each represented by a pressrun that reflects the publisher’s confidence in its potential success, there are an incredible number of books printed each year in anticipation of sale. Of course, not every copy will sell. Very few titles do, in fact, sell out. Because of this, over half of the final retail price of a book, can account for inventory, distribution, and associated costs.

The cost of carrying a book inventory is significant, and became more so due to a U.S. Supreme Court ruling in 1979. According to authors Kieso and Weygandt:

In (*Thor Power Tool Company v. Commissioner of Internal Revenue*) . . . the IRS negated Thor’s practice of writing down the value of its spare parts inventory which it held to cover future warranty commitments. Thor contended that, although the sales price on the individual parts did not decline over the years, the probability of all the parts being sold decreased as time passed, and thus so did the net realizable value of the inventory as a whole. The IRS contended that a decline in inventory values for tax purposes must await actual decline in the sales price of the individual parts. The Supreme Court indicated that for tax purposes, the lower of cost or mar-

ket method was to be applied on an individual item basis and that if no decline in sales price occurred, no loss should be permitted.⁸

This ruling, which was applied to power tool spare parts, also applied to other inventories, including books. It was a major blow to publishers. It meant that a pressrun of a title that was not expected to sell out within a given year, and that was overprinted in order to reduce per unit costs, would have to be carried at market value.

In contrast to traditional book manufacturing, print on-demand systems are agile, accepting digital files from a wide variety of sources (Figure 24.1). The facility by which digital files can be sent through networks means that printed materials that utilize digital presses, and publishing systems, can be distributed to the location where the output is needed (*distribute and print*); rather than producing all of the output in one place, and then distributing it (*print and distribute*). The benefits of the *distribute-and-print* workflow model are obvious: Digital files can be sent to any location in the world, quickly and at little or no expense. Once they have been received, they can be output on a digital printing device and distributed locally.

The distributed print on-demand process is similar, in some respects, to flowers by wire.⁹ Orders for flowers, which are highly perishable, are processed by member florists around the world. By sending the order for the flowers, rather than the flowers themselves, the delivery system achieves a high level of efficiency. In the same way, a digital file can be communicated to any output service, or capable company location, that has the necessary print on-demand equipment. Distribute and print is the process by which newspapers, such as *USA Today*, can be printed in several plants across the United States, with each copy appearing virtually identical. (See PrintCast on page 80 in Chapter 6, “Digital Workflow.”)

Printing on-demand materials may consist of the production of a quantity of the same document, such as 500 copies of a set of software documentation—or a quantity of similar documents, such as 500 personal financial profiles, each different, and each highly personalized. The print on-demand process has the potential to generate

7. The first non-digital on-demand book production was in 1938, when Eugene Power started a microfilm archive for the purpose of preserving intellectual property owned by the British Museum. In the mid-1950s, he is credited with the original application of book-on-demand production at University Microfilming International (UMI). UMI offered single or multiple copies of books that were produced, one by one, from microfilm archives.

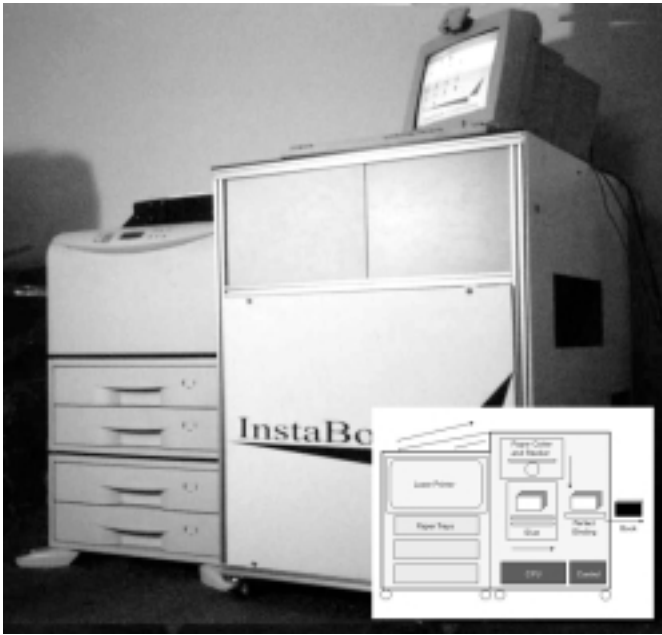
According to Power:

The idea came to me full-blown: If the film in Ted’s [Schellenberg] projector were a positive instead of a negative, it would be projected onto the screen black-on-white, reading exactly like the page of a book. I could photograph a page and print a positive-film copy for the customer, keeping the negative in

my file to be duplicated over and over again in filling future requests. There would be no need, as there was in traditional publishing, to maintain a warehouse inventory of finished copies or to re-photograph the original material. Each copy made would be to fill a specific order. I could keep a vault full of negatives; therefore, no title need ever go out of print. . . . The concept of ‘publication or production on demand’ glowed in me like a snowcapped peak in the moonlight. I knew it would work, and I knew its publishing advantages would far outweigh any time and money it would take to develop it.

8. Kieso, Donald, and Jerry J. Weygandt. *Intermediate Accounting*, 4th ed. New York: Wiley, 1983. 392–93.

9. FTD: Florists’ Transworld Delivery, Inc.



▲ **FIGURE 24.1**

The InstaBook Maker I is “The world’s first system that makes perfect-bound books in one simple step.” The self-contained book production system requires less than ten square feet of floor space, and produces a finished book at the rate of approximately one book per minute. The user simply attaches his or her computer and sends their PostScript or non-PostScript files. Books as thick as 4” can be produced. (Photo courtesy of Instabook Corporation; see Appendix A for contact information.)

highly focused publications that meet the particular needs of their recipients. Rather than publish materials that are “pushed” from the message originator in relatively indiscriminate and scattergun fashion, print on-demand publications can be composed of the related content that a reader is seeking, and may, in this context, be considered a form of “pull” communication. The inclusion of a majority of the information that the customer seeks, and a minority of the information that the customer does not seek, leads to a smaller publication or advertising piece, which is less bulky, and, therefore, less costly to produce and to mail. According to information provided by the Personalized Print Initiative (PPI),¹⁰ postage can be up to 50% of the cost of any advertising mail campaign.

The process of on-demand publishing (whether for print or on-screen viewing) assumes that the publication content exists in a digital form, and, if not already in a final composed form, that it can be paginated quickly, to assume the form required by the information recipient.

This aspect of the process separates print on-demand from most other forms of publishing, which likely require days, weeks, or months of preparation.

Print on-demand systems that incorporate customer database information in the materials they produce are part of a greater operation known as *Customer Relationship Management* (CRM). CRM leverages strategic and proprietary customer information to personalize the content of each advertising piece that is sent to each customer, or potential customer. Response rates from such pieces tend to be significantly higher than those from nonpersonalized advertising forms because they address needs that are unique to the recipient.

The process of tapping into the data that has been collected, analyzed, and incorporated into a marketing strategy is called *data mining*. Data mining is the core part of *one-to-one marketing*, wherein an advertising message, product data sheet, travel book, training guide, or other form of printed information is customized in response to information supplied by its intended recipient. Each copy of each printed item is potentially different, and contains the information that is most appropriate for its reader.

Printing on-demand services range from the production of a single copy of a digitally stored book, wherein no pages are modified from their original design, to the production of a highly focused advertising brochure, in which every page is totally customized on the basis of the needs of a particular recipient. Among the categories of jobs that are appropriate for print on-demand are brochures, flyers, forms, generation of federally mandated document filings (for new drugs, new products, etc.), labels, one-to-one marketing, retail displays, customized newspapers, product documentation and manuals, product prototyping, short-run packaging, and more.

The advantages of printing on-demand are many, and include

- Faster turnaround time (than traditional printing methods).
- Little or no press make-ready.
- No film or plates.
- Little or no waste.
- No standing printed inventory.
- Production of a book, or other printed piece, only when there is a buyer.
- No negative effects to the ecology from overproduction or consignment of unsold copies to scrap.
- Compatibility with digital files, which are the predominant form of information storage.
- Potential for last-minute changes and revisions.
- Production of printed materials that support the just-in-time (JIT) manufacturing process.

10. The Personalized Print Initiative is a non-profit program of the Print On Demand Initiative (PODI). Member companies include Adobe Systems, Barco Graphics, EFI, Indigo, NexPress, PageFlex, Scitex, US Postal Service, Xeikon, and Xerox. See Appendix B for contact information.