

What is personalized printing?

Personalized printing is an outcome of a powerful new business trend, one-to-one marketing. In a nutshell, one-to-one marketing means treating customers as individuals with unique preferences and needs - and customizing marketing, products, and services to meet those needs. The aim of one-to-one marketing is to build stronger and more profitable relationships with customers, to gain and maintain customer loyalty, to increase "customer share" rather than "market share."

For the commercial printer, one-to-one marketing translates to "personalized printing." Each of the print client's customers receives materials designed expressly for them. One-to-one marketing materials require so-called "mass customization" – a print run where each document is unique. Personalized printing is enabled by convergence of digital printer technology and database software. Combining digital press capabilities with database tools allows documents with areas of static text to be combined with customized text and graphics on the fly, to produce a run where each piece is essentially a "run of one."

For most companies, the most frequent contact they have with their customers is through the printed material they send them: billing statements, catalogs, fulfillments, direct mail, coupons, and so on. While print quality is what entices a potential customer to read a document, it's the content that makes the sale. As companies seek to increase their one-to-one relationship with their customers, all the print materials they generate will become increasingly personalized.

This white paper will identify business trends that are driving changes in the print communication industry, print markets that are ready now for personalized one-to-one marketing, ways that printers can help their customers create successful personalized print materials, and a strategy for integrating full color digital printing into an existing print operation.

From paste-up to full color digital in just 10 years.

To say that the print communication industry is undergoing rapid change is a staggering understatement. Over the last 10 years, commercial printers have had to cope with an avalanche of unstoppable technological change – an avalanche whose volume is increasing exponentially. Remember cut-and-paste? Typesetting? Although these techniques seem like ancient history, they were used routinely until about 10 years ago when they were swept aside by a wave of new technology. This historical thumbnail shows how profoundly commercial printing has changed and how rapidly the changes have come about.

Until the mid-1980s most documents were prepared for printing using the cut-and-paste method. Text was inputted into typesetters, which used laser or photo devices to create galleys - long, vertical strips of typeset sentences. The galleys were then cut apart and pasted onto pre-formatted layout boards, which also contained any graphics or photos that were to be included in the document. When completed, these boards, now called "camera-ready art," were sent to a composing room, where they would go through several more steps to produce the final printed product.

With the introduction of personal computers and laser printers in the early 1980s, led by IBM and Apple, desktop publishing (DTP) emerged, giving computer users the tools to create and view documents on-screen as they would appear when printed.

The combination of a computer and software that allowed users to compose complete documents electronically, and a printer that could produce documents that rivaled phototypesetting in quality, revolutionized the graphics and printing industry almost overnight. It eliminated many of the manual steps previously necessary to prepare materials for printing, and allowed for the easy manipulation of both text and graphics when changes were necessary. Although many in the printing industry were skeptical of the new technology at first, it became clear there were compelling advantages to using DTP systems in many situations.

Today, in commercial printing, even jobs produced on a traditional offset press are prepared by digital prepress processes, and many commercial print shops offer digital, black-and white printing as an

adjunct to traditional offset. Xerox, IBM, Agfa, Xeikon, Indigo have all introduced increasingly powerful, fast, and flexible black-and-white digital printers. IBM's Infoprint 4000, for example, the world's fastest PostScript printer, is capable of producing up to 1002 pages per minute. But printing speeds are only part of the story. Digital printing, direct from disk to paper, eliminates all the "make ready" work in tradition prepress: no film, chemical proofs, or printing plates. Short runs are economical and the source material can be easily revised between runs.

Commercial digital color printers were introduced in the mid 1990s. Early adopters of full color digital printing were, for the most part, either trade service organizations or service bureaus. Very few commercial printers were ready to risk making an investment in this latest technology - particularly when the results were not up to offset standards.

By now, however, commercial color digital installations have been around long enough for the market to gauge their success, both from a quality and business standpoint. At the same time, impressive new digital color press introductions from IBM and others, are providing printers with powerful new tools and the ability to develop and find new markets. Digital color printing is no longer a novelty.

Not worrying about digital color printing up until now has not hurt commercial printers. But overlooking it in the future could spell disaster.

Responding to trends in business.

As if staying competitive and keeping pace with continual technical innovation weren't enough, commercial printers have had to respond to a complete transformation in the way their customers do business. Downsizing, outsourcing, delayering, total quality management, just in time, reengineering, partnering, and other associated initiatives have completely changed the meaning of "business as usual." Printers are now expected to be value-added service providers, offering turnkey solutions from graphic design and digital prepress, to printing, finishing, mailing, fulfillment, database management, and CD-ROM authoring. Savvy printers need to position themselves as marketing partners for their business clients – helping them create successful, results-oriented print materials.

One-to-one marketing means personalized printing.

Across every industry segment - financial, retail, health care, insurance, hospitality - from small business to Fortune 500 companies, businesses are adopting one-to-one marketing. The re-engineering initiatives mentioned above have led to a major paradigm shift in marketing strategy from mass marketing to "marketing to the one." As competition has become keener, companies have come to realize that keeping the customers they already have is a less costly proposition than creating new customers.

At the same time, technology has provided companies with powerful automated data collecting, database management, and data mining tools. Even large corporations now have software tools that allow them to respond to their customers as individuals. Databases routinely warehouse information such as gender, age, ethnicity, language, income, education level, place of residence, previous buying patterns, and other demographic attributes. Data mining, the process of analyzing databases to uncover new and valuable information, usually in the form of previously unknown relationships between variables, is used to maximize marketing effectiveness. By analyzing relevant customer data, companies can predict or even influence customer behavior.

The convergence of digital printing and database technology now makes possible the cost-effective merging of static and variable data and graphics to create customized documents. Digital printing enables effective one-to-one marketing by automatically producing personalized and customized documents for each recipient. Blind mass mailings, with typical response rates of two percent or less, are quickly becoming a thing of the past as business strive to individualize their messages. Case studies have shown repeatedly that when qualified buyers, identified by data mining, receive personalized mailings, response rates have been as high as 20%, a dramatic improvement.

The value of one-to-one marketing using full color digital printing and database technology is illustrated through the work that Chicago-based ColorStream Technologies produces for a pharmaceutical company. ColorStream customizes marketing pieces designed to inform physicians, and HMOs about medications that may be appropriate for their patients. The mailings are personalized with the physician's detail information such as name, address, and specialty, and the healthcare facility's logo. These customized, high quality, color mailings not only attract attention, they generated record-breaking response rates. ColorStream's pharmaceutical customer can then turn that initial interest into increased sales.

Just-in-time means short run, on-demand printing.

Along with personalized printing, short run, on-demand printing is another trend that has resulted from business re-engineering. Just-in-time practices have prompted businesses to reduce inventory, thereby reducing the costs associated with warehousing and inventory management. According to Charles A. Pesko Ventures, a market research and consulting firm that specializes in on-demand printing, the highest growth rate in the printing market in 1997 was short-run printing (defined as under 5000 copies).

Digital, rather than traditional offset printing, perfectly facilitates this trend. Today, for example, if a print client needs a total of 12,000 offset copies, but only in increments of 1000 per month, they will still order and pay for all 12,000 at one time in order to have the best possible unit cost. Most purchasing managers still think predominantly in terms of unit costs when they choose printing solutions. However, when they print uniform documents in large volumes, they also assume the hidden costs of warehousing and managing them. Furthermore, companies end up throwing out a vast percentage of those documents as they, inevitably, become obsolete.

But things are starting to change as companies become more sophisticated at assessing the overall costs and benefits of the decisions they make. Short run, on-demand printing could deliver the 1000 copies per month, precisely when and where needed. Because digital printing permits unlimited flexibility to edit and revise, the documents would always be as current as possible, and without the need for film, plates, and proofs, this can typically be accomplished in turn around times of 24 to 72 hours.

One commercial printing company that is successfully applying a "total system" approach to meet the printing and fulfillment needs of its clients is the St. Louis-based Jerome Group. When appropriate, it encourages its customers to adopt on-demand printing solutions that enable them to avoid storing documents. Using its full color, digital press for short run, on-demand print jobs, the Jerome Group has been able to offer its clients cost-effective ways of improving their workflow, eliminating print inventories, and the waste of obsolete documents.

Five ready markets for full color digital printing.

Four categories of print work are ideal candidates for the personalized printing, short run, on-demand capabilities of full color digital printers:

- Information that requires frequent updates: menus, presentations, show newsletters, price lists, spec sheets.
- Messages tailored to a selected group or audience such as targeted catalogs, insurance programs, real estate-type campaigns, and corporate newsletters.
- Existing color work that is currently being printed on offset, for example, reprints, short run annual reports, magazine and ad comps, scientific publications, textbooks, and user manuals.
- Black and white, one and two color work that is starting to move to color such as newsletters, sell sheets, conference programs, and technical documents.

These categories span five market segments that have emerged as the leading users of full color digital printing. Commercial printers that are able to offer their customers new printing strategies are

developing solutions to enable their customers to improve efficiency and generate new sales while at the same time, creating new business opportunities and increased revenue for themselves.

1. Direct Mail

Since its birth over fifty years ago, direct mail has grown into a valuable and cost-effective marketing channel. In 1997, over \$1 trillion in business was conducted via direct marketing worldwide, and US corporations alone mailed hundreds of billions of direct mail pieces - the vast majority of which were printed on paper with traditional presses.

Today, the direct marketing industry is poised to enter a new phase. New digital technologies – many developed and pioneered by IBM – are driving the convergence of direct mail, database marketing, and data mining. The result is a new paradigm of digital direct marketing where direct mail printers create and distribute interactive media that is more readily available, easily understood, and totally personalized in both content and presentation.

Direct marketers have long known that personalized selling is the most effective way to gain customers. For door-to-door salesmen, telemarketers, and direct mailers, the key to success has always meant identifying potential customers, learning their needs, offering a product or service that meets those needs, and presenting this offer in a creative way that captures attention and moves the customer to act.

Historically, this strategy has been prohibitively expensive. Traditional personalization techniques are labor-intensive and demand simplicity. But using today's digital printing tools and technology, direct mailers can implement a cost-effective one-to-one marketing solution with full-color capability – and consequently achieve dramatic increases in both response rates and return on investment.

Leveraging data to improve response rates

In the last two decades, computer technology has enabled many businesses to amass a wealth of customer data. Properly analyzed, or mined, this data can provide valuable insights into the needs of both current and potential customers. But knowledge is only valuable if it is applied. The ability to combine data mining results with personalized, digital, full color printing - on demand, yields a marketing solution that can dramatically increase response rates and revenues, a faster time to market, and reduced waste.

By combining data mining with variable content presentation, marketers of any size can identify and respond to changing and emerging opportunities with timely, cost-effective, personalized output – through the Internet as well as print – and consequently gain a distinct competitive advantage.

Chicago-based ColorStream Technologies was the first fully digital print shop in the US. ColorStream customizes marketing pieces for a client list that includes a major airline, five-star hotels, top appliance manufacturers, and branded pharmaceuticals. Using a special database management process it is able to pinpoint a target audience and select appropriate messages and graphics from multiple databases. The information is fed to an IBM InfoColor 70 four-color digital printer to generate customized pages on the fly that are electronically collated. ColorStream is able to produce a high volume of targeted direct marketing pieces, each uniquely tailored to its recipient and with proven double-digit response rates.

2. Statements

Statements are one of the most consistent and frequent points of contact that a company can have with its customers. Sharp, easy-to-read statements project a positive corporate image and create competitive advantage. Their potential as a direct marketing tool, however, has been stalled by the limitations of printing technology. Historically, most statements are undistinguished in design and content. They deliver information with little fanfare and seldom, if ever, “make a statement.”

Statements can deliver more than just balance and payment information. They can become dynamic documents that attract attention, are read more thoroughly, and deliver individually targeted marketing

messages leveraging the enormous opportunities of one-to-one marketing that can help increase revenues. Using advanced digital printing capabilities, statements preparation can be automated to dynamically apply personalized text as well as other conditional information and calculations. Personalized statements can transform a routine business activity into an opportunity for increased revenue and profitability while reducing or eliminating the need for preprinted stock paper.

3. Books

Traditional book printing is a numbers game. Balancing the cost of printing with demand for product has always been a statistical puzzle for publishers - with win-or-lose consequences. To justify the cost of an offset press run, a publisher must be able to sell thousands of copies – a challenge for many mature titles as well as untested first-runs.

From full color covers to everything between the covers, this is an ideal application for a digital printers. With the emergence of on-demand printing technology, high-quality, short-run print jobs are a cost-effective reality.

The school textbook market is also an ideal candidate for short run, on-demand digital printing. Publishers that produce school textbooks have to go through a pre-release marketing phase. They have to print small quantities of 200 to 400-page textbooks, and bring them to school districts and state educational authorities for approval. After receiving corrections they then do the final printing.

However, even the main print run can be segmented into smaller, more targeted printings. Simon & Schuster now offers customized textbook publishing, down to individual orders. Teachers must structure curriculums around available textbooks, but these books have a short shelf life and frequently go out of print. Now, teachers can order books specifically matched to individual course and student needs, and that particular book can be printed for that specific class in the specific quantity needed. The company's Demand Production Center saves end users money while offering speed and convenience. Moreover, it has radically reduced warehousing costs and unsold stock.

Books on-demand in a New York minute

NetPub, an full service commercial printer based in Poughkeepsie, New York, is an experienced on-demand printer. It has been using an IBM InfoPrint 4000 since April 1996 to custom print black-and-white documents and an IBM InfoColor 70 for full color digital printing. Both presses are web-fed and can produce documents of variable sizes on a wide variety of paper stocks.

Before purchasing the digital color printer, the color printing process was less cost-effective and more time-consuming. When customers asked for color covers and images to enhance their black and white documents, NetPub had to use an offset press to print color pages. Along with the additional cost incurred, the color documents took up to 14 days to produce. NetPub wanted to give its customers a better choice. The company decided to offer color digital printing so that customers could afford four-color pages in the true quantity and time frame they needed.

Recently, NetPub was able to turn out 350 customized chemistry textbooks with full-color covers, using information from various sources - in three days. According to NetPub president, Bill Grogg, "We now print jobs that cannot be done cost-effectively using offset printing. We're printing customized textbooks, financial and marketing materials - jobs that, for us, would have previously been unrealistic from a cost or operations standpoint."

The purchase of the two IBM digital printers opened new markets, such as educational institutions, for NetPub. For example, NetPub can print custom textbooks and lab manuals with common charts, incorporating variable images and text chosen by each professor. Additionally, the company can print customized software manuals that include detailed, full-color screen shots.

They also offer leading-edge services to financial companies by printing prospectuses that incorporate pages with four-color images. According to Grogg, the ability to offer digital color printing services will become a prerequisite for success for print shops of all sizes. "Migrating to digital color printing involves educating potential customers and showing them what they can achieve," he said.

“Customers are sending us samples that they have printed on offset, we print them on the InfoColor 70 and we ask the customer to be the judge. What could be more convincing than a side-by-side comparison of their previously printed work and the output from an InfoColor 70?”

4. Fulfillments

At a time when technology is transforming companies in many ways, the document fulfillment process in industries such as insurance, banking, health care, and manufacturing, remains labor-intensive and mired in obsolete procedures. In addition, companies often fail to realize that the fulfillment document represents a critical contact with the customer.

The typical fulfillment process in most industries is “print and store.” For example, many businesses maintain customer call centers where orders for documentation are fulfilled. Preprinted documents must be searched for in a warehouse, assembled with a reply letter, addressed, and mailed. This process has many drawbacks such as: storage costs, high labor costs associated with manual retrieval, assembly, inspecting and matching related documents, and envelope stuffing, document obsolescence, maintenance of the inventory, waste, and replacement costs, revenue lost due to out of stock or delayed document delivery.

Not only is the document fulfillment process expensive, labor intensive, and error prone, it is not designed to enhance one-to-one relationships with customers. If however, response/fulfillment documents were maintained in a digital archive, they could be personalized and printed on demand. This approach to fulfillment provides a host of benefits including: increased customer response rates which translate into increased sales and revenue, reduced overhead and labor costs.

The adoption of one-to-one approaches, and short run on-demand digital printing represents an opportunity to personalize fulfillments while reducing warehouse obsolescence.

5. Promotional materials

Full color promotional materials such as menus, brochures, catalogs, banners, posters, signs, media kits, and special event materials frequently must be produced on tight deadlines and tight budgets – difficult or impossible to accommodate with offset printing. These jobs are ideal candidates for full color digital printing’s ability to accommodate content revisions, short runs and rapid production times.

- The Darden Restaurant Corporation, which operates 1200 Red Lobster and Olive Garden restaurants, uses color digital printing to produce menus as well as marketing and promotional materials. Every month 70,000 menus and full color in-store collateral pieces are produced. Print runs often require several variations including regional differences in menu offerings, varying expiration dates and financial information. According to Warren Lombardy, manager of Darden’s print services division, “Digital printing reduces labor costs, because we eliminate stripping, plate making, and pre-press set up. Material costs are also lower and there’s no drying time. We’ll spend an hour doing a job digitally versus five hours on an offset press. That translates into more time we can spend on other jobs.”
- Novartis, one of the world’s largest seed producers, is now producing individualized four-color brochures that reinforce the customer’s buying decisions and encourage new purchases. Recently, they printed 7000 brochures, no two alike, that were personalized with the customer’s name and personalized art work that reflecting previous purchases, type of farm, and favorite tractor color. The brochure listed products the customer had previously purchased as well as a select number of other products that could be of particular interest. The personalized brochure became a multipurpose tool - cross selling, confirming previous orders, strengthening the customer relationship, and the company’s profit expectations.

Staying competitive

The required combination of technical skills, business knowledge, and marketing savvy required by today's successful commercial printer appear daunting. But the challenges facing commercial printers today are not more difficult than those already mastered during the last decade's digital revolution.

To keep their operations competitive and profitable, print industry executives must have the technical skills to create, receive, process, produce, and transmit digital jobs. They need to develop a marketing strategy that includes a training and education program. Staff, clients, and prospects need to be kept up to date with potential uses for equipment, as well as how to prepare electronic files for on-time efficient production, archiving, and electronic transmittal. Printers need to be able to demonstrate to their customers the cost justification and advantages of personalized and on-demand printing.

Print industry executive also need to know where technology, business, and marketplace changes are leading the print industry. Today's trends: the merging of database software with digital production to create personalized printing and short run, on-demand printing, are powerful forces that will require shops to reengineer conventional processes and purchase new equipment.

Finally, print executives need to keep abreast of industry offerings in order to identify the best combination of hardware and software tools to meet their needs. Developing a strategic partnership with an industry leader who's capable of providing a scalable, integrated, end-to-end solution is essential.

Bringing full color digital printing online

As of 1998, commercial printers have a wide array full color digital printers to chose from offered by IBM, Xerox, Agfa, Indigo, and others, and more are in the pipeline. Features, ease of use, and production quality have never been higher. But a digital printer is not a stand-alone piece of equipment. It has to fit smoothly into an existing network that may already contain a variety of hardware and software components from different vendors such as black and white digital printers, Macintoshes and PCs, scanners, modems, servers, or a mainframe.

The surest strategy for successful implementation of full color digital printing is to partner with an industry leader who is capable of offering scalable, integrated, custom solutions that can increase revenue, improve operating efficiency, and create new business opportunities. Only IBM has the capability to be a *total* solution provider to the commercial printer who's ready to make the transition to personalized, on-demand, full color digital printing.

IBM can provide a completely integrated package of scalable hardware and software components that not only work together seamlessly but also are capable of meshing with existing networked resources. IBM offers a complete family of sheet-fed and web-fed black-and-white digital printers, including the world's fastest PostScript printer, the InfoPrint 4000. They also offer the unrivaled InfoColor 70 full-process color digital printer. Magnetic Ink Character Recognition, post processor color highlighting, and electronic collating options are also available.

IBM provides software solutions the merge with printer capabilities and support direct mail printing management, complex printing and mail operations, and large mail operations, all compatible with the International Data Post Initiative. Advanced Function Presentation software is IBM's solution for personalized printing. It merges intelligent database tools with digital print management to enable 100% variability from page to page across a print run. Xport Services software allows IBM digital printers to talk to other non-IBM digital printers.

Maximize uptime and throughput

Completing the picture, IBM's service and support is unmatched by any other industry provider. Support service begins with free delivery, installation, and training, and continues with day-to-day operating support to avoid costly printer downtime. A worldwide team of IBM service engineers are on call 24 hours a day anywhere in the world.

In Summary

After a decade of unprecedented change in print communication technology, a powerful combination of new technologies and business trends are converging to take print communication in new directions. The one-to-one marketing paradigm, combined with powerful database and data mining software tools, and a new generation of full color digital printers has created a demand for “mass customization,” or personalized printing. This market for targeted documents has in turn converged with just-in-time to create a market for short run, on-demand printing.

To succeed in this dynamic environment, printers must be dedicated to increasing the profitability of their customers. They need to move beyond simple document production to become a single source for their customer’s marketing and communication tools. At the same time, printers need to develop a one-to-one relationship with a solution provider who can help them grow their business by providing them with the right tools to produce the most cost-effective and competitive product: an integrated package of state-of-the-art hardware and software components backed by top-notch support and service.

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