Color Business Report

Color, Computers, and Reprographics

Consumer Imaging Leads PMA Show

At this year's PMA show (Las Vegas, NV, March 2 - March 5, 2003), a great deal of attention was given to digital cameras and obtaining prints from digital cameras. Performance increases and lower prices will push digital cameras into the top spot this year, when they outsell analog cameras for the first time. With the emergence of the digital camera—a computer peripheral—as a memory-capture device, a new industry structure is being cast. The old industry—the mature film industry—could be classified as concentrated, with high barriers to entry and top market share going only to a handful of very large companies. Conventional film companies—chemical-industry giants—have made strategic moves to maximize their position as consumers figure out how to use their digital cameras. But the challenge is real, and a significant part of consumer "memory spending" is going to go to new industry participants. We begin this month's Color business Report with a series of short articles that demonstrate how digital technology is presenting opportunity and challenge in the photo industry. MZ

Digital Sales to Overtake Film in 2003

In *Photo Industry 2003: Review and Forecast*, the **Photo Marketing Association** (PMA, Jackson, MI) predicts that digital camera sales will overtake conventional film camera sales this year. At the end of 2002, 21% of U.S. households owned digital cameras. The trade association logged a peak for conventional film and camera sales in 2000 (24 million cameras, one billion rolls of film). With a slow economy and changing consumer preferences, PMA does not expect conventional cameras or film to rebound. In fact, film sales should fall by 3% in 2003.

PMA economists observed a strong correlation between film sales and economic activity as expressed in gross domestic product between 1983 and 2002. Those days are past. "As the economy has begun to recover, however, film sales have not," the report says. Although the analog portion of the industry is in decline, digital camera sales appear to be growing faster than analog camera sales are falling. In 2003, PMA predicts, camera sales should reach 24.9 million units. Sales of one-time-use cameras still exhibit strong growth. PMA reports that 9% of households use disposable cameras exclusively for all picture taking, and one-time camera unit sales should increase 8% in 2003. *Photo Industry 2003: Review and Forecast* is available for download at www.pmai.org.◊

Make Better Prints at Home

On March 2, 2003, **Spencer Associates** (Melville, NY) announced research findings that show consumers rate prints from three of HP's current photo printers to

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This month in *Color Business Report* (see page 2 for contents):

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be on par with or better than prints from conventional silver halide processing. HP sponsored the print evaluation study, in which 427 individuals in the US, Europe, and Japan participated. The test involved five photographs, printed on three HP printers and printed via conventional chemistry-based printing. Prints from each of the HP printers logged more preferences than conventional silver halide prints (*See Figure 1, facing page*). The digital prints were made on HP Premium Plus Glossy paper, with the Photosmart 1315, the Photosmart 7550, and the Deskjet 5550. A second test, which compared prints made on HP Premium Plus Glossy paper with prints made on Kodak's Ultima Picture Paper—High Gloss, wasn't even close (*See Figure 2*). "Both products represent their vendor's current best glossy inkjet photo paper, designed to look like professional photographs," the report explained. The report can be downloaded from www.spencerlab.com.◊

Figure 1: Preference: HP Ink jet with HP Premium Gloss Photo Paper, Glossy over Conventionally Processed Prints

HP Photosmart 7550 (6 color)
1123
1010

HP Deskjet 5550 (4 color)
1108
1025

HP Photosmart 1315 (4 color)
1096
1037

0   250   500   750   1000   1250

Participant Decisions

☒ HP Premium Plus Photo Paper, Glossy

☐ Conventional Prints (silver halide)
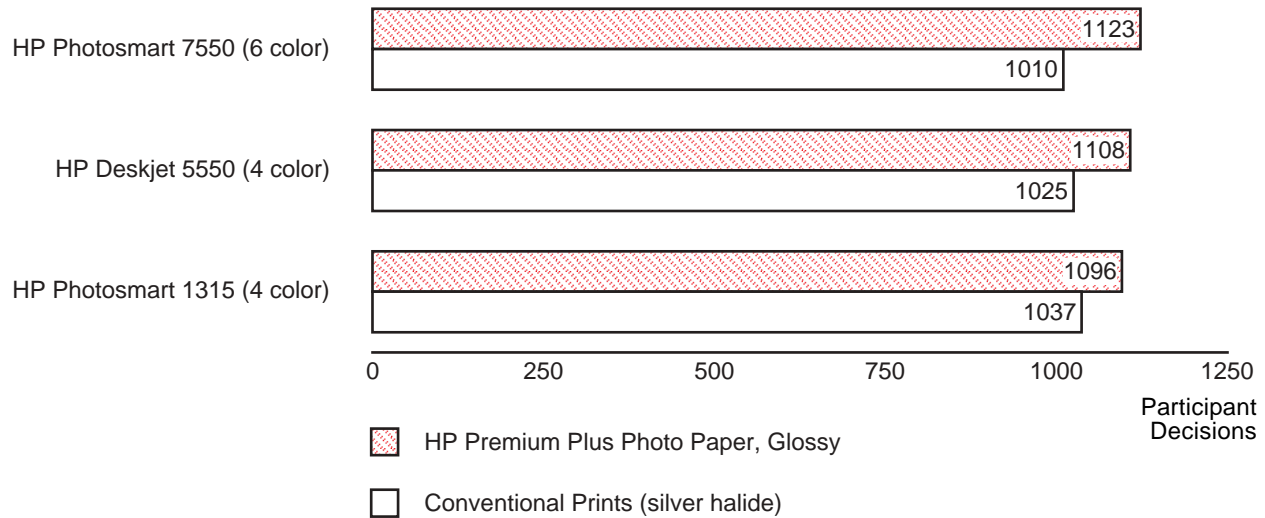
Source: Spencer & Associates

Figure 2: Preference: HP Premium Plus Photo Paper, Glossy over Kodak Ultima Picture Paper-High Gloss Prints

HP Photosmart 7550 (6 color)
1398
735

HP Deskjet 5550 (4 color)
1247
886

0   250   500   750   1000   1250   1500

Participant Decisions

☒ HP Premium Plus Photo Paper, Glossy

☐ Kodak Ultima Picture Paper-High Gloss
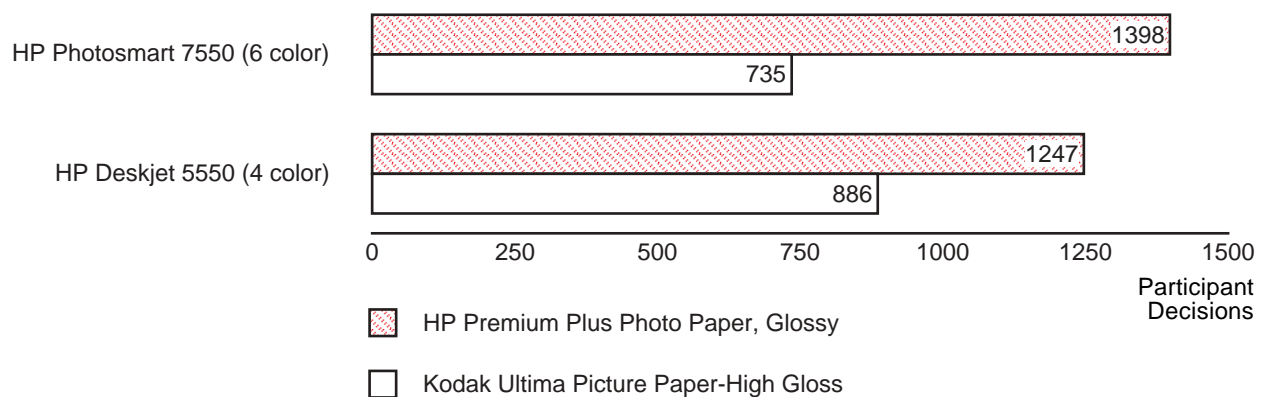
Source: Spencer & Associates

If HP Knows So Much About Paper...

When we read that HP's paper is preferred over Kodak's, we thought of *Phogenix Imaging LLC* (San Diego, CA). Kodak is a brand name that is synonymous with photo print quality. Kodak joined forces with HP to form Phogenix, which is bringing thermal ink jet printing to the in-store mini-lab business. Our understanding is that HP is contributing its thermal imaging capabilities to the partnership, and Kodak is contributing its paper-making expertise. If HP knows enough about paper-making to produce digital printing paper that beats Kodak's own, what does HP need Kodak for?

Well, don't expect Phogenix to re-spec its print-making system, just now undergoing public user trials. In order to develop materials to support the *business* of making prints, the Phogenix team had a few design objectives that designers of home ink jet printers do not. Kevin Shimamoto, Consumables Business Manager for Phogenix, pointed out that Phogenix has developed a system that can produce prints that are profitable to make and sell for $0.29 to $0.49 each. To accomplish that goal, manufacturing savvy is an important asset. Image quality issues aside, Kodak brings manufacturing expertise, economies of scale, and factory pricing to the

partnership. Further, Kodak brings its stature, which helps in two ways. In the film processing business, Kodak's reputation for image quality is unassailable. And Kodak has access to a photo processing industry distribution network. So, even if HP "wins" on the home desktop, the printer-maker would be hard-pressed to bring that imaging capability to the very different in-store-processing market.

The development effort at Phogenix has been underway for over three years. Shimamoto reminded us that in imaging systems, ink, paper, and the imaging system itself are developed together. "We were really set upon developing a paper, laminate, and ink combination optimized for this market." Shimamoto suggested that HP's Photosmart line is geared toward the home market, not a minilab market. However, both systems—the home ink jet printer and the ink jet-based minilab—have the same quality objective: to produce a photo print that is comparable to a silver halide print. The two systems also serve the same ultimate customer—consumer picture takers. Printing cost is a major difference, although print cost is not a *quality* difference. Phogenix told us a consumer would not be able to produce a 4" by 6" print at home for the same price as a Phogenix print. Further, the chemistry of the Phogenix system was designed to be quick drying, a requirement that is not as stringent in home applications. With a post-printing laminate applied to all Phogenix prints, the store-bought prints should be more durable, too, a factor not covered in the Spencer Associates test. Shimamoto expects that the Phogenix prints would have a higher level of gloss than home-made prints. "We designed our printers to be as close as possible to the glossiness of silver halide prints." A specific appraisal of glossiness was also not part of the Spencer Associates test.

At this stage, Phogenix has more *lab test* results than *field test* results. However, interviews with users of the units currently being tested in New York City, San Diego, Calgary, Canada show that customers like the process, like the prints, and intend to buy again. We expect to visit a Phogenix location next week, and will have prints made to share with readers.

Phogenix has not conducted tests comparing consumer acceptance of Phogenix prints to home-produced digital prints, and it sounds like the company won't. "We believe there is room in the industry for both solutions as they meet the needs of different application sets," wrote Simran Zilaro, Marcom Program Manager for Phogenix. The package Phogenix has developed—which combines conventional film processing with the broad range of product choices enabled by digital printing—has been well received by those exposed to the concept. In a concept test a year ago, 70% of survey participants said they would use the new concept (with the ability to custom-create a film-processing order) for half of their film rolls, and two-thirds would change photofinishing outlets in order to use the capabilities that Phogenix offers. In a different study, 69% of study participants preferred Phogenix DFX prints over digital prints made on conventional silver halide systems.

Early operators of the Phogenix DFX system seem very happy. In a collection of quotes Phogenix sent us from early users, Bill Price of **Bob Davis Camera** (La Jolla, CA) said, "The picture quality is undeniable and customers are very happy with the ability to customize their prints and fix images to make them perfect."◊

People Print at Home for the Convenience, Low Cost

Digital camera owners who usually print photos on their home printers do so mainly for convenience, according to Fujifilm USA's (Elmsford, NY) *Digital Camera Retail Printing Study—Year 2 Whitepaper*. The study is based on 619 responses to a web-based study conducted between September 13 and September 18, 2002. The study found that only 5% use a retail location for digital prints, while 85% print at home. (Nearly one-fifth—19%—said they do not print digital photos at all!) Aside from convenience, more than one-third (35%) print at home so that they can experiment with the image (*Figure 1*). The same portion (35%) said they customize their prints.

Another frequently mentioned rationale for printing at home is cost savings, mentioned by 34%. We doubt that many digital picture takers conduct rigorous printing cost evaluations. More likely, they know what they pay for ink cartridges and special paper (if they use it), and they know what they pay to have a roll of film developed. If they buy reprints, they will have a feel for what a single conventional reprint costs, too. Based on such factors, one-third say that they save money by printing at home, using what are generally regarded as printers that are expensive to operate. We have examined a few photo printers ourselves, and found per-page print costs ranging from $0.166 to $0.747, for ink and paper (*Color Business Report*, December 2001). Depending on the printer, one can, *indeed*, print for less with many home printers. Prices for conventional minilab or overnight reprints are in the $.30 to $.50 range. Digital print kiosk makers—Phogenix for one—are targeting that very price range. We talked to two operators of Phogenix digital labs in New York City. One is selling Phogenix prints for $0.79 each. Another wants $0.49 for a 4" by 6" print.

But the "task" of dropping a roll of film at the drugstore is not comparable to the task of producing acceptable prints from a digital camera. When one drops

Figure 1: Why do you print most often at a printer at home?

Category	Percentage
Convenience	78%
Less time and effort	41%
Ability to experiment	35%
Ability to customize output	35%
Cost saving	34%
Don't have easy access to other options	17%
Haven't had time to investigate other options	18%
Wasn't aware there were other options	10%
Quality	13%
Not satisfied with other options	4%
Ability to get assistance	2%
Other	1%
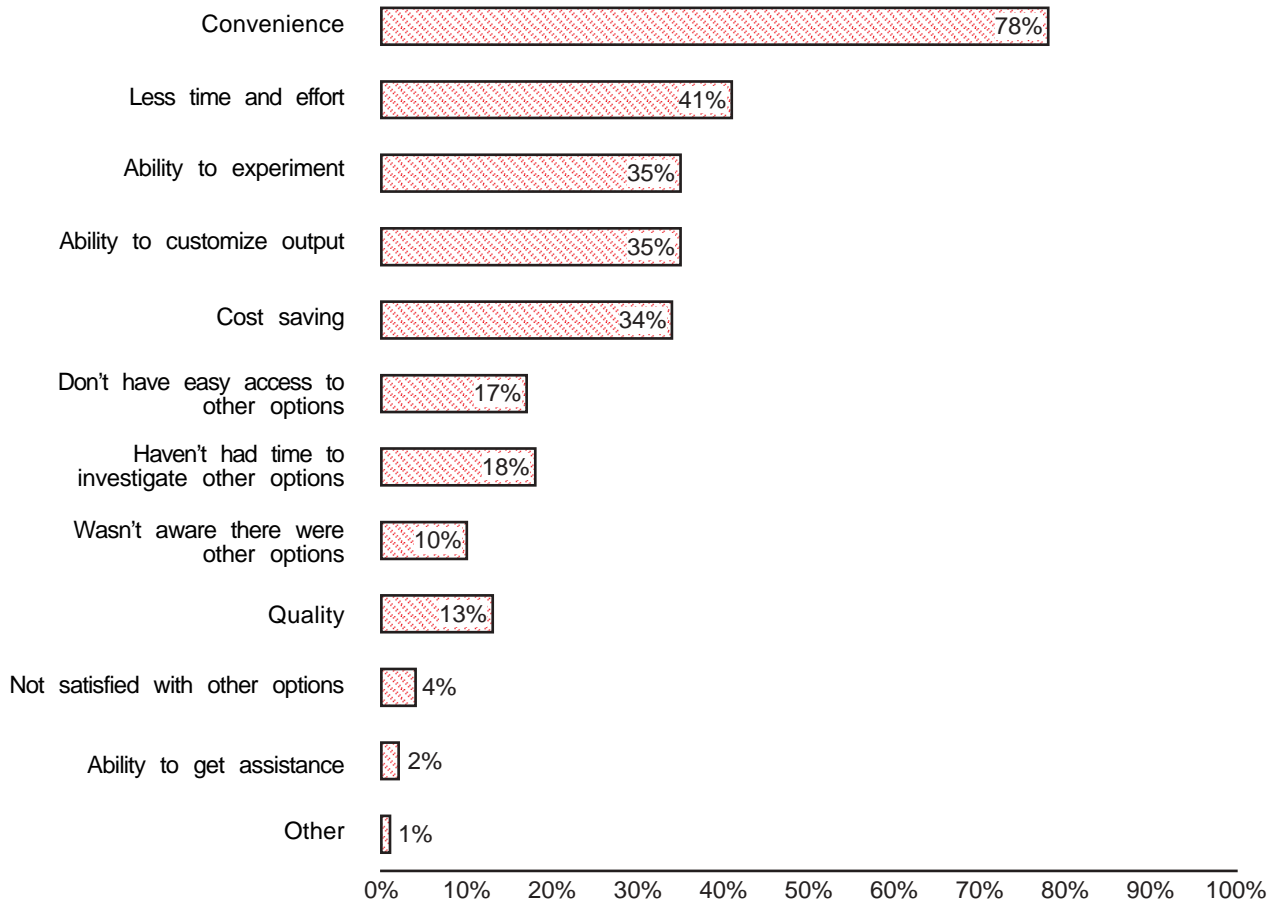
Note: Includes only respondents that print most often at home. Multiple responses permitted.

Source: Fujifilm USA and InfoTrends Research Group, Inc.

Figure 2: Can your local film processing location print photos from digital cameras?

- Yes: 34%
- No: 5%
- Don't Know: 61%
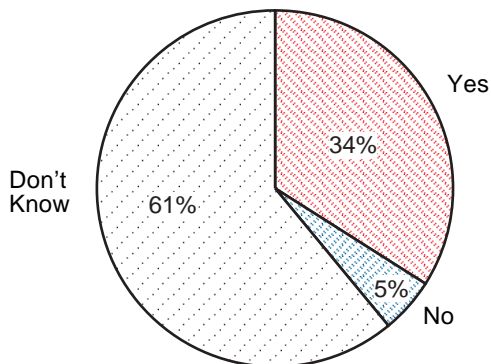
Note: Includes only respondents that own a digital camera or plan to buy within 12 months.

Source: Fujifilm USA and InfoTrends Research Group, Inc.

Figure 3: If you could get snapshot type prints from your digital camera as easily as a film camera, would you use your digital camera more?

- No Answer: 14%
- No: 15%
- Yes: 71%
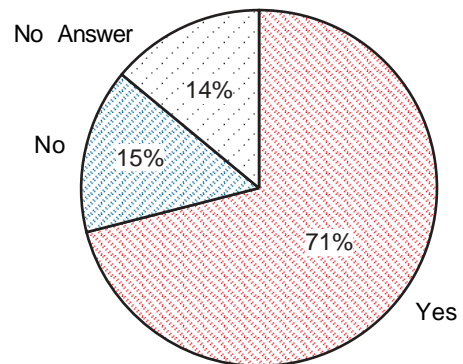
Note: Includes only respondents that own a digital camera.

Source: Fujifilm USA and InfoTrends Research Group, Inc.

the film off for processing, a limited number of choices is offered. (The ability to avoid printing less-than-perfect images may be factor in the high number of respondents who cite cost as a reason for printing at home. Drop-off film services do not offer image screening—one must take the bad with the good.) When one prints photos through a computer, the number of choices can be daunting, although software publishers, printer manufacturers, camera makers, and kiosk manufacturers are working hard to make the process easier.

In response to an open-ended question about why people printed at home most often, 10% said they were not aware that there were other options. Responding to a question specifically addressing awareness of in-store digital printing services, nearly two-thirds (61%) said they did not know whether local film-processing locations handle digital files (*Figure 2, page 5*). Considering that 71% say that they would use their digital cameras more if digital prints were as easy to obtain as prints from their conventional cameras (*Figure 3, page 5*), we would say that in-store services that mimic the "put-it-in the-envelope" simplicity of drop-off film processing should satisfy digital camera owners, especially now that product prices and camera performance are prompting mass-market acceptance. The Fujifilm study underscores the need for both market development and marketing communications.◊

On March 3, 2003, **Phogenix Imaging LLC** (San Diego, CA) announced that its DFX Digital Photofinishing System is undergoing a retail trial at Future Shop, Canada's largest consumer electronics retailer. (Future Shop is a subsidiary of US-based Best Buy.) At the chain's Calgary, Alberta location, the DFX system is connected to an HP kiosk, which customers use to view their images, and to make print orders. The Future Shop test of the DFX is expected to run for 90 days. If the test is successful, the DFX may be installed at other Future Shop locations (the company operates 100 stores in Canada). Pricing for the Phogenix DFX Digital Photofinishing System starts at $39,900.◊

On March 3, 2003, **Applied Science Fiction, Inc.** (Austin, TX) introduced the DigiPIX Image Station, a retail kiosk that allows consumers to scan photos, slides and negatives, and to perform image enhancements before printing. The DigiPIX includes a Microtek 6800 flatbed scanner enabled with ASF's Digital ICE technology, which automatically removes image artifacts such as scratches, dust, creases, and rips from scanned photos. Once scanned, images can be further corrected using other ASF software packages. Digital ROC performs color correction on faded photos and

CD Burner, Dispenser, Labeler

Digital Camera Media Reader

Flatbed Scanner

35mm Film Scanner

4" by 6" printer (2nd optional)

8" by 10" printer

The DigiPIX allows retail customers to enhance their images before printing.

Source: Applied Science Fiction, Inc.

slides. Digital SHO automatically adjusts exposure and contrast, while Digital GEM reduces graininess and image noise. Once satisfied, users can save their images to a CD, or have them printed on site. The DigiPIX Image Station will begin shipping to photo retailers during the second quarter of 2003. Applied Science Fiction, which originally planned to offer its kiosks through Gretag Imaging, will handle marketing, offering the DigiPIX directly to retailers. (Gretag, as part of a recent restructuring, has exited the photo kiosk business.) Two configurations will be available. A floor kiosk, which will include a 4" by 6" Mitsubishi dye sub printer, will cost between $20,000 and $25,000, while the countertop model, which does not include a printer, will be available for about $8,000.◊

Printers

On February 27, 2003, **Canon USA, Inc.** (Lake Success, NY) introduced the i450 Color BubbleJet and i470D Photo Printer ink jet photo printers. The i450 is a general-purpose ink jet, while the i470D can make prints from digital camera removable media cards. Designed for home users, the i450 and i470D both

produce up to 12 ppm in color and 18 ppm in black when printing documents. Maximum resolution on the i450 and i470D is 4800 by 1200 dpi, and the machines can fire ink droplets as small as five- and two-picoliters. Both printers allow users to make direct prints from Canon digital cameras and camcorders, and support the Exif Print standard, which uses information stored with a JPEG file (camera settings, shooting information) to control color reproduction when printing. The i470D accepts digital camera media, and has a built-in operating panel that allows users to select and print their digital camera images, which are automatically displayed on the computer screen before printing. The i450 is available for $99 at retail, while the i470D costs $149. The software bundle shipped with each printer includes Canon's Easy-PhotoPrint software; PhotoRecord software, which allows users to create albums from digital camera images; PhotoStitch, a panoramic image creation software; and ZoomBrowser EX.

Also on February 27, 2003, Canon introduced the i9100 Photo Printer, designed for use by professional photographers. The i9100 will replace the S9000 in Canon's ink jet printer line. It prints photos up to 13" by 19." The six-color i9100 makes photo prints at resolutions up to 4800- by 1200 dpi, and can print a 4" by 6" photo in 37 seconds and an 8" by 10" in one minute. According to Canon, the i9100 can also serve as a graphic arts proofer, when used with a PostScript driver available from iPROOF systems. The i9100, which ships in April 2003, will be available for a retail price of $499.◊

On March 3, 2003, **Hewlett-Packard Company** (Palo Alto, CA) introduced the PSC 1210, a multifunction ink jet that scans, copies, and prints. The PSC 1210 uses a similar print mechanism to the Deskjet 3420, introduced in June 2002, but uses the same ink cartridges as the Deskjet 5550 (#56 black and #57 tri-color). The PSC 1210 prints up to 10 ppm in color and 12 ppm in monochrome (draft mode). When printing photos on photo paper, the PSC 1210 can achieve "4800-dpi optimized" print resolution. Scan resolution on the PSC 1210 is 600 by 2400 dpi. The machine supports PC-free color copying, albeit with some limitations. Without a PC, users can make up to 9 copies of a single original at 100% size. When connected to a PC, users can make up to 50 copies, and enlarge or reduce documents from 50% to 400%. Input paper capacity is 100 sheets; output capacity is 50 sheets. The PSC 1210 is available for a retail price of $149.

Also on March 3, 2003, HP introduced the Officejet 7100 series of ink jet MFPs. The machines, which are based on the Color Inkjet Printer cp1160, introduced in October 2001, are capable of "4800-dpi-optimized" resolution. The Officejet 7100 prints up to 22 ppm in black and 18 ppm in color. It can scan at 1200 by 4800 dpi, and make copies at 1200 by 600 dpi. When copying, users can make up to 99 copies of a single original, and enlarge or reduce from 25% to 400%. Users can also send color faxes with the machine's 33.6 Kbps modem. Fax functions include fax broadcasting, fax forwarding, automatic redial, and a fax "junk mail barrier." The Officejet 7100 series includes three models:

- The Officejet 7110 base model ships with a 150-sheet paper tray, a 50-page automatic document feeder, and 16 MB of memory. It is available for a retail price of $399.

- The Officejet 7130 includes an automatic duplex unit, and ships with 32 MB of memory. The unit can also make prints from digital camera removable media cards; the front slots on the Officejet 7130 are compatible with CompactFlash cards, SmartMedia cards, Sony Memory Sticks, Secure Digital cards, and MultiMedia cards. The Officejet 7130 is available for $499.

- The top-of-the-line Officejet 7140xi ships with an additional 250-sheet paper tray. The machine also includes an HP Jetdirect 200m print server, allowing the Officejet 7140xi to be shared over a network. The Officejet 7140xi costs $699.◊

On February 20, 2003, **Epson America, Inc.** (Long Beach, CA) announced that its Stylus C62 color ink jet

printer is supported by Microsoft's MSN TV service, which allows home users to browse the web via their television sets. To view and print web content from their TVs, all users need is a set-top box with a parallel printer port, connected to the Epson printer. Other Epson models that the MSN TV service supports include the Stylus Color 440, 640, 740, 777, Stylus C60, and Stylus Photo 750.◊

In last month's issue, we covered Konica's introduction of the 8020/8030 and 7820/7831 color copier/printers. After the February issue was printed, we received pricing information for accessories and supplies for the new Konica machines. *(see chart)*.◊

On January 8, 2003 **Sony Electronics** (New York, NY) introduced the Clié PEG NZ90, a handheld computer that integrates a digital camera and can send print jobs to Epson ink jet printers via its USB port. The two-megapixel camera in the NZ90 has a fixed focus lens, automatic flash, and special shooting modes, allowing users to compensate for different lighting conditions, such as a cloudy day or fluorescent lighting. Still images and movies captured by the camera are stored on Sony's MemoryStick removable media. In addition to image capture, users can browse the web or check e-mail, and print, via the device's USB port. Compatible printers include the Epson Stylus C60, C62

and Stylus Photo 820. The Clié PEG NZ90 is available for $799.◊

On March 2, 2003, **Eastman Kodak Company** (Rochester, NY) introduced the EasyShare printer dock 6000, a digital camera docking station with a built-in thermal transfer printer. To print photos, users "dock" their Kodak EasyShare digital cameras, select the image

The EasyShare printer dock 6000 makes prints of digital camera images.   Source: Eastman Kodak Company

Konica 8020/8031 Supplies and Accessories

Black toner	$34
Color toner (cyan, magenta, or yellow)	$57
Black image unit (80,000 pages)	$230
Color image unit (cyan, magenta, or yellow, 50,000 pages)	$535
Staples (FS-135) (three packs of 3,000)	$40
Staples (FS-231) (three packs of 5,000)	$52
Scanner Rack (DK-232)	$275
Platen Cover (CV-131)	$84
RADF (DF-232)	$1,880
ADU (AD-231)	$525
PFU (PF-232) (500 sheets)	$525
Drawer Base w/LCT (DB-432) (2,500 sheets)	$1,260
Stapler Finisher (FS-135)	$1,890
Additional Exit Tray for FS-135 (FT-331)	$220
Booklet Finisher (FS-231)	$3,000
Punch Unit for FS-231 (PK-131)	$550
Copy Desk for Main Body (DK-133)	$164
Copy Table for PF-232 (DK-134)	$130
Hard Disk Drive 10 GB (HD-131)	$530
Mechanical Counter (black&white)	$31
IP-711 Print Controller	$3,600
Fiery X3e+ Print Controller	$4,200
Fiery X3e I/F Kit (VI-635)	$290
Memory 128 MB (X3e)	$210
DocBuilder Pro Software w/Dongle Kit (X3e)	$2,500
ED-100 Densitometer (X3e)	$1,000
Color Profile Kit (X3e)	$2,000

Konica 7820/7830 Supplies and Accessories

Konica 7820

Black toner	$108
Color toner (cyan, magenta, or yellow)	$185
Black drum (30,000 pages)	$144
Color drum (cyan, magenta, or yellow, 30,000 pages)	$155
Fuser unit (60,000 pages)	$224
Transfer belt (60,000 pages)	$273
Hard drive (10 GB)	$595
Paper tray (550-sheets)	$495
Duplex unit	$395

Konica 7830

Black toner	$119
Color toner (cyan, magenta, or yellow)	$299
Black drum (39,000 pages)	$169
Color drum (cyan, magenta, or yellow, 39,000 pages)	$199
Fuser unit (80,000 pages)	$204
Transfer belt (80,000 pages)	$249
Paper tray (550 sheets)	$495
Duplex unit	$425
High-capacity feeder (1,650 sheets)	$1,299
Finisher	$2,899

Source: Konica Business Technologies

they want to print, and press the "print" button. The printer, developed by Kodak, makes a single continuous tone 4" by 6" print in 120 seconds (90 seconds for each additional copy). The EasyShare printer dock 6000 is available for $199.◊

Software

On March 10, 2003, **Toshiba America Business Solutions** (Irvine, CA) announced the InfinityDesk suite of collaboration, workflow, and peripheral management software. An extensive list of functions cover four principal areas: Collaboration, communication, information management, and resource management. The software was developed by NEOJAPAN, Inc., and is being sold by Toshiba exclusively in the U.S. (In Japan, the product is knows as Desk Net. In Europe, the product is sold as iOffice. NEOJAPAN, Inc. reports that 10,000 organizations and 800,000 workers use its software.)

Document imaging is a area of great end user interest. The "Cabinet" program in the Collaboration suite stores scanned files and other files for workgroup access. The software works with Toshiba's own e-

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Functions Supported by InfinityDesk

Collaboration	Communication	Information Management	Resource Management
Schedule	WebMail	To Do	Time Card
Discussion	Whereabouts	Expense	Facility
Cabinet	Workflow	Notepad	Store
Project	Circulation		Inventory
Address book	Report		
User list	Information		

Utilities and Applications Delivered with InfinityDesk

In addition to InfinityDesk, Toshiba offers other software to help MFP users distribute, manage, and organize their information.

Distribute

Package	Publisher	Description
PrintConsole Pro	Prism Software Corporation Lake Forest, CA	Intercepts host-generated print streams from a file directory, network queue or LPR command. File is then archived, translated, and sent to its final destination. View, convert, archive.
DocForm	Prism Software Corporation Lake Forest, CA	Designs forms to be filled with host data. Forms design and creations, variable data, conditional processing, document distribution.
FormScape	AFP Group, Fleet Hampshire, UK, Morrisville,NC	Processes host print data streams and distributes to officeprinters, copiers, document archives, network servers. Can be integrated with SAP, Lawson, or JH Edwards ERP systems.
RPM Remote Print Manager	Brooks Internet Software, Inc. Idaho Falls, ID	Window-based print server that allows users to format and otherwise customize print jobs received over the network from mainframes, UNIX, LINUX, and Windows systems.

Manage

Package	Publisher	Description
Print Log Professional	Equitrac Corporation Coral Gables, FL	Application that tracks the use of printers and network copiers.
Vista Plus Output Manager	Quest Software, Irvine, CA	Print and distribute output. Documents are stored as printer streams, meaning that subsequent access is application-independent.

Organize

Package	Publisher	Description
Questys	Decision Management Co. Mission Viejo, CA	Document management system covering input, processing, storage, and retrieval.
ABBYY FineReader	ABBY Software House Moscow, Russia	Optical Character Recognition software
VistaPlus Professional	Quest Software, Irvine, CA	Store, retrieve, and view documents.

Source: Toshiba America Business Solutions

STUDIO scan-to-file and scan-to-e-mail functions, and also works with other MFP brands that have scan-to-network or scan-to-e-mail capabilities and a mapped drive for InfinityDesk to find.

A five-user license sells for $450. Two hundred users can be connected for $9,000, and an unlimited user license costs $12,000.

Software like InfinityDesk is important as organizations make the move from operating fleets of analog copiers, dedicated fax machines, and stand-alone direct-connect printers to using a smaller number of digital multifunction devices. InfintyDesk offers a "Swiss-Army-Knife" approach, with a suite of 19 integrated tools. We believe that operating highly functional shared peripherals eventually will become common business practice. However, end users (office workers) demonstrate a high degree of comfort with the status quo. It's not as if a dearth of collaborative software is holding them back, either. Most office workers *like* the present infrastructure. The current inventory of office equipment has evolved over time and usually fits the operation like a pair of comfortable shoes. Further, those who associate the concept of shared office peripherals with the loss of their favorite printer have a good reason to resist. Nonetheless, printer manufactures have added scanners to their printers, and copier manufacturers have added controller boards and page description languages to their copiers. When copier leases are up for renewal, office equipment decision makers have to choose how much of the MFP/shared peripheral architecture they want to embrace. Unless they decide to keep their old equipment, the company is likely to *install* MFPs. Software like InfintyDesk increases the chances that they will *use* MFPs.◊

On January 23, 2003, **Lexmark International, Inc.** (Lexington, KY) introduced the Lexmark Document Solutions Suite, a trio of document management software packages designed to help office users streamline document workflows by facilitating the production, distribution, and retrieval of documents over the network. Document Distributor software, designed for use with Lexmark MFPs, automates the distribution of documents by e-mail or fax. Document Producer software allows users to generate custom forms. Document Portal software allows users to access and print documents stored on a central server via the control panel on their Lexmark X620e, X750e, or X820e MFPs. Lexmark would not disclose pricing for the Document Solutions Suite, which will be offered by Lexmark's Services Group.◊

On February 11, 2003, **Creo Inc.** (Billerica, MA) introduced enhanced versions of its prepress workflow systems. Version 2.1 of Creo's Prinergy PDF workflow package supports the PDF/X-1a format, and accepts JDF imposition data, such as folding and cutting specs, from Preps, a page imposition software package popular with commercial printers. Creo has made the user interface for the trapping function more user-friendly. Prinergy, which had been available in English and German languages, will now be offered in French, Spanish, and Japanese versions.

Industry Notes

	Date	Comments
Global Graphics establishes presence in Japan	3/10/2003	Global Graphics to open an office in Japan, to provide support for its Japanese OEM partners, and to pursue new business in Asia.
GretagMacbeth to acquire Sequel Imaging	3/3/2003	GretagMacbeth to acquire Sequel Imaging, a manufacturer of color measurement devices for displays.
National Semiconductor licenses Foveon Technology	3/10/2003	National Semiconductor to manufacture, market, and distribute Foveon's X3 image sensor.
P.A. Hutchison to use Océ gear	3/13/2003	P.A. Hutchison to use Océ DemandStream printers and PRISMA workflow software in its short-run book-printing operations.
Printable to offer Extensis's PrintReady technology	3/3/2003	Printable to offer Extensis's PrintReady, a software utility that checks print jobs for errors (such as missing fonts or images) before printing, to its customers.
Printable to offer RealTimeImage's RealTimeProof	2/26/2003	Printable, a provider of online print management services, to offer RealTimeImage's RealTimeProof online proofing system to its customers.
Trident orders LEP displays from CDT	3/13/2003	Cambridge Display Technology to begin filling orders for its light-emitting polymer displays for Trident Display, a U.K. distributor of color displays for the transportation market.

Creo also released Version 4.1 of the Brisque workflow. This new version supports all Creo computer-to-plate and computer-to-print devices, along with Creo's Veris and Integris ink jet proofers. Enhanced features include PDF transparency flattening, ICC profiles for digital halftone proofers, and improved color matching and imposition functions.

Also on February 11, 2003, Creo released version 3.5 of its Synapse web-based print workflow system. Synapse allows print buyers to upload their print files to their printer's system, where the files are processed and posted for online proofing. The new version supports review by multiple collaborators, allowing them to make notations and corrections that can be viewed by prepress personnel. Creo would not disclose pricing for the Prinergy, Brisque, or Synapse software.◊

On March 3, 2003, **Applied Science Fiction, Inc.** (Austin, TX) introduced Digital GEM, a software plug-in for Adobe Photoshop that automatically reduces noise and graininess in photographic images. The software cleans image artifacts caused by the coarser grain of high-speed film and image noise sometimes generated by CCD sensors used in digital cameras and scanners. With Digital GEM, users can let the software automatically reduce noise, or control noise reduction themselves using sliders. A trial version of the Digital GEM plug-in is available for free on Applied Science Fiction's web site at www.asf.com. If satisfied with the trial version, customers can purchase the full version through ASF for $79.95.◊

On March 2, 2003, **Preclick Corporation** (Atlantic Highlands, NJ) introduced Lifetime Photo Organizer, a software package that allows users to find and organize the digital images stored on their computers. With the software's "filmstrip" interface, users can scroll through their images, eight frames at a time. With Preclick's "Photoback" function, users can attach searchable metadata tags to their photos, to make them easier to find later, or to add captions to photos. Simple image-editing functions allow users to adjust brightness and contrast, rotate and crop photos, and remove red-eye. Customers can also use Lifetime Photo Organizer to upload their photos for printing; Preclick has partnered with online photofinishers Adorama and dotPhoto for print fulfillment. Adorama offers 4" by 6" prints for $0.29 each, and 5" by 7" prints for $0.69. Preclick Lifetime Photo Organizer software is available on the Preclick web site (www.preclick.com) for $9.95, which includes free upgrades for one year.

Along with OpenGraphics, Preclick is offering Lifetime Photo Organizer software on an OEM basis to retailers and photofinishers, to pass along to their customers as a vehicle for ordering prints of their photos

Preclick Lifetime Photo Organizer allows users to collect and organize their digital images.

Source: Preclick Corporation

over the web. (OpenGraphics provides the Internet portal for the system.) Adorama, a New York City photo retailer and Preclick partner, includes a free copy of the software with every camera it sells, and on every PhotoCD it creates for photofinishing customers. Adorama and Preclick credit the software for a three-fold increase in Adorama's photofinishing sales since beginning the program in November 2002. Adorama will increase its capacity, buying more Noritsu photo printers to keep up with demand.◊

Supplies

On February 20, 2003, **Roland DGA Corporation** (Irvine, CA) introduced SolJet Clear Adhesive-backed Vinyl. Designed for use with Roland's SolJet large-format ink jet printers, the new media is a 3-mil clear vinyl with a semi-permanent adhesive. It is designed for printing decals, window signs, and point-of-purchase displays. Roland cautions that the material is not appropriate for vehicle graphics, as it does not conform to surface irregularities such as rivets or curves without wrinkling. Roland also recommends that users protect their printed graphics with an overlaminate. SolJet Clear Adhesive-backed Vinyl is shipped on 50" by 66' rolls, available for a list price of $269.95 each.◊

On March 2, 2003, **Ilford Imaging USA Inc.** (Paramus, NJ) introduced two large-format vinyl banner media. MPI Ultra Smooth Vinyl Banner is a 13 oz. vinyl material with a smooth surface. Ilford expects that print longevity will be one year for banners installed indoors and six months when posted outdoors. MPI Heavy Duty Vinyl Banner, at 15 oz., is slightly heavier,

and prints will last longer—up to two years indoors or out, according to Ilford. The new materials, compatible with solvent-based inks, were developed by Avery Dennison. The MPI Vinyl Banner media is available in three roll widths *(see chart)*.

Also on March 2, 2003, Ilford added Instant Dry RC photographic paper to its IlfoJet large-format media line. The new paper is nine mils thick, and is coated with a nanoporous ceramic matrix that promotes fast dry times—Ilford claims that users can handle prints as they come out of the printer. Instant Dry RC photo paper is available in gloss and satin finishes, and it is compatible with large-format printers from Encad, Epson, HP, Mimaki, Mutoh, and Roland. The new papers are available in several roll widths, ranging from 24" to 60" *(see chart)*.

Ilford Imaging Large-Format Media	
MPI Ultra Smooth Vinyl Banner	
54" by 75'	$124.88
54" by 150'	$249.75
60" by 150'	$277.50
72" by 150'	$333.00
MPI Heavy Duty Vinyl Banner	
54" by 75'	$135.00
54" by 150'	$270.00
60" by 150'	$300.00
72" by 150'	$360.00
Instant Dry RC Photo Paper (glossy and satin finish)	
24" by 72'	$60.39
36" by 72'	$90.49
36" by 100'	$125.45
42" by 100'	$146.45
44" by 100'	$153.45
50" by 100'	$174.31
54" by 72'	$135.83
60" by 72'	$150.48
Source: Ilford Imaging USA, Inc.	

Also on March 2, 2003, Ilford introduced ARCHIVA Extreme Version II inks for its Ilfostar Novajet large-format printers. According to Ilford, the newly formulated inks outperform the original ARCHIVA inks in several key areas: smoother color transition, improved color reproduction, and better detail in shadow areas. ICC profiles for the new inks are available on Ilford's web site at www.ilford.com. The ARCHIVA Extreme inks are available in kits that include an ink cartridge and a 500-ml bottle of pigment-based ink. Ink for the IlfoStar NovaJet 600i, 630i, 700i, 850i, 880i, and NovaJet PROe printers is available for $230 per color (cyan, magenta, yellow, or black), while ink for the NovaJet PRO costs $199 per color.◊

PDLs/Interpreters

On March 12, 2003, **Best Color** (Krefeld, Germany) introduced Best Designer Edition color proofing software designed to drive ink jet printers. The software supports users running Quark Xpress, Adobe InDesign, and Adobe PageMaker on Apple's Mac OS X platform, allowing them to print directly from those applications. Best Designer Edition includes a PostScript RIP, and uses ICC profiles to generate color-accurate proofs. File formats supported by Best Designer Edition include TIFF, PDF 1.4, PS, and EPS. Best Designer Edition is available in two versions: Best Designer Edition M—which supports desktop ink jet proofers such as the Canon BJC 8500, Epson Stylus Pro 5500, and HP DesignJet 50ps—costs €464 ($422); while the XL version, which supports ink jets with carriage widths of 24" (such as the Epson Stylus Pro 7600 and Canon W7250), is available for €928 ($843).◊

Document Management

On February 27, 2003, **Ricoh Corporation** (West Caldwell, NJ) announced that will shift responsibilities for sales and marketing of its eCabinet device from its Ricoh Silicon Valley subsidiary to Ricoh headquarters in New Jersey. The eCabinet collects and stores documents that are printed or scanned over a network, indexing them for easy retrieval. Available for $13,995, the eCabinet can store up to 25 million pages, and can capture documents from scanners, copiers, printers, and fax machines. Until now, sales of the eCabinet were handled by Ricoh Silicon Valley, Ricoh's research and development arm; by shifting marketing responsibilities to its headquarters in New Jersey, Ricoh hopes to add the device to its host of document management software and service offerings.◊

Ink on Paper

On March 3, 2003, **Ricoh Corporation** (West Caldwell, NJ) introduced the Priport JP1235, a desktop digital duplicator designed for use in schools. The JP1235, which replaces the JP1230 in Ricoh's digital duplicator product line, can print up to 130 pages per minute at 300 dpi. The machine supports paper sizes up to 8-1/2" by 14" and can handle a wide range of paper stocks, from 13-lb. bond to 110-lb. index cards. Since a common application for the Priport JP1235 is textbook copying, Ricoh has designed an open-book copying mode, which allows users to lay books flat on the scan glass to copy both pages simultaneously. The JP1235 also has a

shadow erase function, which eliminates edge and spine shadows while copying books. Scanning software included with the JP1235 can automatically distinguish between text, line art, and photo areas on any given page, and optimize print settings to achieve the best results. The Priport JP1235 is available for a retail price of $6,175. Ink for the JP1235 is available for $7.20 per bottle, and master rolls, which hold 260 masters, cost $32. Other accessories include an automatic document feeder ($1,138), color drum ($1,025), and print controller ($1,515).◊

Scanners and Image Capture

On March 11, 2003, Kodak's **Ofoto, Inc.** (Emeryville, CA), an online photofinisher, announced a volume pricing discount structure for its photo prints. To encourage use of its services, Ofoto is offering reduced prices on prints to customers who buy 51 prints or more. The discounts are somewhat modest, however. Ofoto's regular 4" by 6" price is $0.49, and at 51 prints, customers pay $0.47 per print, a savings of $1.02 on the entire order. To reach the lowest per-print price, $0.43, Ofoto customers will have to order 251 prints. Ofoto's volume discount also applies to 5" by 7" prints *(see chart).*◊

Ofoto Volume Discounts

4" by 6" prints

Quantity	Price Each
1 – 50	$0.49
51 – 100	$0.47
101 – 250	$0.45
251 +	$0.43

5" by 7" prints

Quantity	Price Each
1 – 20	$0.99
21 – 50	$0.95
51 – 100	$0.93
101 +	$0.85

Source: Ofoto, Inc.

On March 3, 2003, online photofinisher **Shutterfly** (Redwood City, CA) launched Shutterfly Pro Galleries, a web-based service that hosts and sells photographic prints of their images for professional and event photographers . The images are stored on Shutterfly's servers—photographers can post a link on their own web sites, or send e-mails to their customers directing them to the gallery. Visitors to the gallery simply select the images they want, and submit their print order. With the service, photographers can set their own pricing for prints. After Shutterfly takes its share, the photogra-

Shutterfly Pro Galleries host and sell images for professional photographers.　　　　Source: Shutterfly

phers receive a monthly check for the prints they have sold through the gallery. Shutterfly Pro Galleries are available for an annual subscription fee, ranging from $99 to $199, depending on storage capacity. The more space photographers buy, the greater their margins on print sales. For a $99 fee (250 MB of storage), Shutterfly charges $0.39 for each 4" by 6" print, while at $199 (1 GB), Shutterfly's take is $0.29 per print *(see chart).*◊

Shutterfly Pro Galleries Pricing

Annual Maintenance Fee

Account Type	Storage Capacity	Fee
Pro 20	250 MB or 1,250 images	$99
Pro 30	500 MB or 2,500 images	$149
Pro 40	1 GB or 5,000 images	$199

Wholesale Print Prices

Print Size	Pro 20	Pro 30	Pro 40
4" by 6"	$0.39	$0.34	$0.29
5" by 7"	$0.79	$0.69	$0.59
8" by 10"	$3.19	$2.79	$2.39
Wallets	$1.43	$1.25	$1.07

Source: Shutterfly

On January 9, 2003, **World Wide Licenses, Ltd.** (Hong Kong), which has licensed the Polaroid brand name to sell its digital cameras, introduced several models bearing the moniker of that famed, but faded, imaging pioneer. WWL also introduced two waterproof digital cameras from its other brand, Cool-iCam. Descriptions and pricing for the new cameras are in the chart on page 14.◊

World Wide Licenses Digital Cameras

Model	Price	Comments
Cool-iCam AQ 2100	$299	Retail price for 2.1-megapixel digital camera. The Cool-iCam AQ 2100 has a waterproof case that can withstand depths of 98 feet. The camera has an automatic flash, 2X digital zoom, and a 1.5" LCD display.
Cool-iCam AQ 1300	$199	Retail price for 1.3-megapixel digital camera with fixed-focus lens. This waterproof camera can handle depths of 65 feet.
Polaroid PDC 3350	$299	Retail price for 3.3-megapixel digital camera. Features include 3X optical zoom, movie-recording mode, and a 1.6" LCD display. A 2.1-megapixel version, the PDC 2350, is available for $199
Polaroid iON330	$399	Retail price for 3.1-megapixel digital camera with 2X digital zoom and a 1.5" LCD display.
Polaroid iON230	$229	Retail price for 2.3-megapixel digital camera with 2X digital zoom and a 1.5" LCD display.
Polaroid iON130	$149	Retail price for 1.3-megapixel digital camera. The iON130 has a fixed-focus lens and a 1.5" LCD display.
Polaroid iON80	$99	Retail price for digital camera with 640 by 480 resolution.

Scanners & Image Capture

Vendor/Product Model	Date	Price	Comments
Canon introduces CanoScan 3000F scanner	2/27/2003	$129	Retail price for 1200- by 2400-dpi flatbed scanner with built-in 35-mm film adapter. Scans 35-mm negative strips and slides. Software bundle includes ScanGear CS, ArcSoft PhotoStudio, ArcSoft PhotoBase, and ScanSoft OmniPage SE OCR software.
Canon introduces CanoScan 9900F scanner	2/27/2003	$399	Retail price for 3200- by 6400-dpi flatbed scanner. Creates image files with 48-bit depth, and uses Canon's Film Automatic Retouching and Enhancement technology to automatically remove dust and scratches from scanned photos. FireWire and USB 2.0 connectivity have data transfer rates exceeding 400 Mbps, allowing the CanoScan 9900F to deliver preview scans in three seconds.
Canon introduces enhanced DR-2080C scanner	3/5/2003	$1,095	Retail price for 600-dpi workgroup color document scanner. The enhanced version of the DR-2080C has a high-speed USB 2.0 interface, and a "folio" mode, which allows users to scan folded 11" by 17" documents. Scans at 20 ppm in monochrome and 10 ppm in color.
Canon introduces EOS 10D digital camera	2/27/2003	$1,999	List price for 6.3-megapixel digital SLR camera. Features include seven-point autofocus, an ISO range of 100 to 3200, and a three-frame-per-second burst mode.
Canon introduces PowerShot A300 digital camera	2/27/2003	$299	Retail price for 3.2-megapixel digital camera with fixed-focus lens. Also features 5.1X digital zoom, five-point autofocus, and a movie mode, which can capture videos up to three minutes long. Available in April 2003.
Canon introduces PowerShot A60 digital camera	2/27/2003	$349	Retail price for 2-megapixel digital camera with 3X optical zoom lens. The PowerShot A60 also has five-point autofocus, aperture- and shutter-priority exposure modes, and movie mode. A 3.2-megapixel version, the PowerShot A70, is available for $449.
Canon introduces PowerShot S400 Digital Elph	2/27/2003	$599	Retail price for 4-megapixel digital camera. Features include 3X optical zoom, 3.6X digital zoom, nine-point autofocus, and movie mode.

Scanners & Image Capture (cont'd.)

	Date	Price	Comments
Canon introduces PowerShot S50 digital camera	2/27/2003	$699	Retail price for 5-megapixel digital camera. The S50 has a 3X optical zoom lens, a nine-point autofocus system, and user-selectable metering modes.
Casio introduces Exilim EX-S3 digital camera	3/2/2003	$349	Retail price for 3.2-megapixel digital camera. The EX-S3 has a fixed-focus lens and 4X digital zoom. A tiny camera, the EX-S3 measures 3.52" L by 2.24" W by 0.46" D. Supports Epson's PRINT Image Matching technology, and can print directly to some Epson printers via a USB cable. Other features include a movie mode, built-in flash, and a 2" LCD display.
HP introduces Photosmart 935 digital camera	3/3/2003	$449	Street price for 5.3-megapixel digital camera. The Photosmart 935 has a 3X optical zoom lens (from Pentax) and 5X digital zoom. It supports HP's InstantShare technology, which allows users to automatically upload their images to their computer or the web via the Photosmart 8886 camera dock, available for $79. A 3.2-megapixel version of the camera, the Photosmart 735, is available for $299.
Minolta introduces DiMAGE E223 digital camera	3/3/2003	$249	List price for 2-megapixel digital camera, designed for entry-level users. Features include 3X optical zoom, 3X digital zoom, and macro focus, which allows users to shoot objects as close as 3.1".
Pentax previews *ist D digital camera at PMA	3/2/2003	Not available	At PMA, Pentax previewed the *ist D, a 6.1-megapixel digital SLR with interchangeable lenses. The camera will be compatible with many Pentax SLR lenses. The *ist D also features 16-point metering, 11-point autofocus, and shutter speeds up to 1/4000th sec. Available in July 2003.
Visioneer introduces OneTouch 9220 USB scanner	3/13/2003	$149	Retail price for 2400- by 4800-dpi flatbed scanner. Scans reflective photos, slides, and transparencies. The scanner has a USB 2.0 interface, which allows it to scan and process a full-color page in 15 seconds at 300 dpi.

## Calibration/Color Management

Agfa Monotype Software Supports Color Product Development Teams

On March 14, 2003, **Agfa Monotype Corporation** (Wilmington, MA) introduced three ColorTune tool kits for use by OEMs in printer and imaging product development. The company's color tools borrow their family name from the color management packages Agfa developed in the early 1990s. Agfa first used the ColorTune name in 1997, with version 3.0 of its color management software, the first version to run native ICC profiles. The parent company has discontinued offering over-the-counter color management packages, but continues to ship color management software with its hardware. Agfa Monotype has built its new software on the foundation color management system it acquired from the parent company four years ago, adapting the offering to the needs of an OEM customer base. The present tool kits cover two principal functions in the printer development process: the ColorTune Screening Tool Kit aids in the development of color screens, while the ColorTune Profile Tool Kit supports the development of color profiles. In addition, OEMs who need a complete color workflow can license the Agfa Monotype ColorTune CMM Kit.

Agfa's tools offer previews or predictions of print engine performance, allowing developers to use their computers rather than the print engine itself to anticipate the effects of certain image rendering modifications. According to Bob Cutillo, Agfa's Senior OEM Product Manager, the ColorTune tool kits "allow OEM customers to turn screens and profiles around very quickly, which is not always an easy thing to do." Since screening algorithms and color profiles are so integral to delivering quality prints, simplifying and speeding up these vital aspects of product development can have a direct effect on print quality, by allowing development teams more iterations prior to product launch. "You don't have to go to market with sub-standard quality," Cutillo said. "The ColorTune tool kits help customers
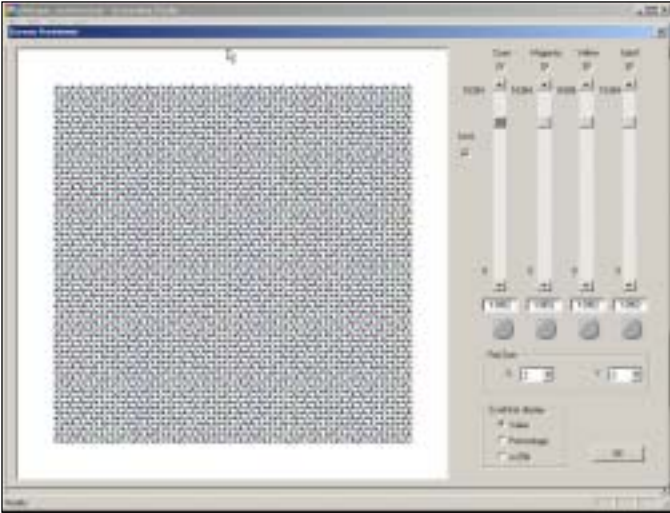
Agfa Monotype's Screening Tool Kit was developed specifically to support screen development. The moiré predictor is shown above. Source: Agfa Monotype

The ColorTune Profile Tool Kit helps product developers set and modify under-color replacement.

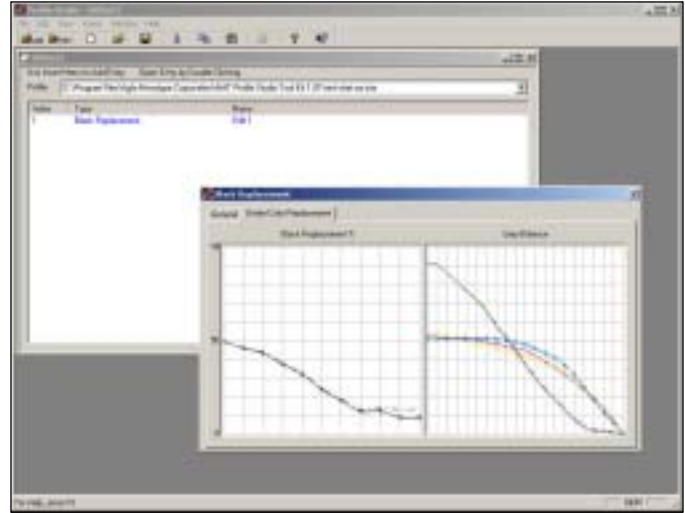Source: Agfa Monotype

achieve quality targets on time."

Agfa Monotype's tool kits are protected by multiple patents. For instance, Agfa's gradation compensation scheme is covered by U.S. Patent 5858604, awarded on October 6, 1998. Said Cutillo, "Since our patents do not infringe on common patents in the marketplace, we offer OEMs peace of mind through patent indemnification."

The *ColorTune Screening Tool Kit* (version 2.10) is a software utility that creates and edits screens for binary, multilevel, AM/FM hybrid, and asymmetrical-resolution screens. If previews or prints exhibit screen-generated tone jumps, a one-step routine can automatically apply interpolation to remove the defect. The Screening Tool Kit includes design tools (for functions such as moiré prediction), targets, test charts, and sample images, as well as sample code.

The *ColorTune Profile Tool Kit* (version 1.25) allows OEM customers to create, view, and edit ICC profiles. The software accommodates tasks such as smoothing color transitions, black generation, and setting white point. Look-up tables as slender as 40K can be built with the ColorTune Profile Tool Kit. The software accommodates "n" colors, so customers are not limited to four-ink (CMYK) systems.

The *ColorTune CMM Kit* (version 1.25) is ANSI C source code that can be embedded in printer ROM or device drivers to perform color transform calculations. The software occupies only 70K of memory, and has been ported to run on Windows, Apple Macintosh, UNIX and LINUX operating systems.

The three ColorTune software packages are available now. Customers usually pay a fee for licensing the software, in addition to a royalty based on a sales volume factor such as units shipped.

Agfa Monotype can trace its lineage back to the 1800s, with Monotype Typography's involvement in the hot-metal line-casting (typesetting) industry At more or less the same time, Agfa, then a separate enterprise, began its involvement in the photographic film, paper, and chemical business. Agfa-Gavaert merged with computer-typesetting-pioneer Compugraphic in 1989, to form Agfa Corporation. Agfa acquired Monotype in 1997, adding the company whose fonts were licensed in the early 1980s by Adobe, Apple, and Linotronic when the foundations of the desktop publishing industry were laid. Agfa Monotype was established as a business unit in January 2000, resulting from the merger of Agfa's Typographic Systems Division with Monotype Typography, Ltd. The company's already-significant stature in the font business was enhanced with the addition of ITC the same year. Agfa Monotype is part of Agfa's Graphic Systems business unit within the $700-million Agfa Corporation. (Annual sales for parent Agfa-Gavaert are $4 billion.) Today, Agfa Monotype employs 140, working out of eight locations in addition to the Wilmington, MA headquarters. Agfa Monotype estimates that its fonts and font technology are used by 90% of installed laser printers.

Agfa Monotype has three principal business lines: *printer imaging and color products* are used in desktop printers, MFPs, wide-format printers, digital presses, and software; *display imaging products* are licensed to non-printer OEMs, for use in products such as computer display drivers, cell phones, and PDAs; and a *consumer business*, licensing fonts directly to end users. Since a high component of Agfa Monotype's customers are involved in product development programs, the company offers integration services as well.◊

On January 9, 2003, the International Color Consortium (administered by **NPES**, Reston, VA) announced several changes to the color profile specification. The ICC has designated a revision to the "recommended" chromatic adaptation transform (CAT). This change acknowledges common user practice of using convenience or chance to make a CAT selection. If there is no explicit reason to use another CAT, the ICC's recommended CAT will be used. Since the recommendation is not a default per se, a chromatic adaptation tag is still required. Other changes to the profile specification include clarification of the rendering intent usage for the preview tag, which is used in soft proofing when one device is used to simulate another.

In addition, the ICC reports that the Graphic Arts Special Interest Group and Workflow Group have defined the most important challenges to implementation of color management in graphic arts work flows (*See Chart*). The groups' listings can serve as a prioritized guide to future changes to the ICC specification. Since the task for the groups was to identify and prioritize, the presence of such problems is not new. Indeed, some of the problems are already being addressed, either by the ICC itself or by other standards groups. Those with comments can reach the ICC by e-mail at icc@npes.org, or visit the ICC web site at www.color.org.◊

On February 27, 2003, **X-Rite, Incorporated** (Grandville, MI) introduced ColorShopX, a color profile analysis software package designed for Mac OS X users. With ColorShopX, users can build, manage, and edit ICC color profiles. ColorShopX interfaces with X-Rite color measurement instrumentation, including the DTP41 spectrophotometer, 500 series, and 938 and 939 spectrodensitometers. The software displays two- and three-dimensional views of color data on screen. ColorShopX also supports the Pantone color libraries, and allows users to create custom targets for calibration purposes. ColorShopX software is available for $495.

On March 2, 2003, X-Rite added the X-RiteColor Ensemble Gold to its X-RiteColor color management package offerings. The Gold package includes an X-Rite DTP41 Series II spectrophotometer, MonacoPROFILER Gold color profile-building software, and a monitor calibration device (users have their choice of a MonacoOPTIX or X-Rite Monitor Optimizer instrument). The X-RiteColor Ensemble Gold package is available for $4,995.◊

On February 25, 2003, Monaco Systems, Inc. (Andover, MA) introduced enhanced versions of its MonacoPROFILER color management software, which allows users to create ICC profiles. MonacoPROFILER Gold edition includes tools that allow users to fine-tune profiles they have created, control neutral and grey

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Problem Areas Identified by ICC's Graphic Arts Special Interest Group and Workflow Group

- Users have no means of determining whether a given profile is suitable for their purpose.
- In the graphic arts workflow (when printing rather than when proofing), it is undesirable to unintentionally perform a CMYK-to-CMYK conversion.
- The way in which applications handle rendering intents is inconsistent.
- When performing CMYK-to-CMYK conversions (for example when proofing), elements that were black (K-only) are converted to a mix of CMYK.
- The perceptual rendering intents from different vendors do not plug-and-play.
- The current set of color-rendering operations is too limited for some applications—in some cases, the required mapping is image or media specific.
- Lack of process control for the color-managed workflow, and the user desire to make ICC profiles compensate for this lack of process control.
- Standards for measurement [ISO 13655] indicate that a black backing should be used when making measurements. In many cases, this is not appropriate when measuring characterization targets to make ICC profiles.
- Some current solutions are not open.
- Some print processes produce bad results when the total ink exceeds the recommended Total Area Coverage limit for a significant area. When solving this problem, a controlled CMYK-to-CMYK conversion is required.

Source: International Color Consortium

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tones and selectively edit colors. MonacoPROFILER Platinum allows users to make profiles for eight-color workflows, and supports digital camera profiling. Both packages support X-Rite's DTP41B Series II spectrophotometer and Monaco's MonacoOPTIX colorimeter, which allows users to profile CRT and LCD monitors. MonacoPROFILER Gold is available for $2,950, and the Platinum version costs $4,250.◊

On March 3, 2003, GretagMacbeth (Regensdorf, Switzerland) introduced four Eye-One color management packages, each designed for specific applications. The packages include an Eye-One color measurement device and Eye-One Match 2.0 color matching software. Shipping begins in April 2003.

- Eye-One Display includes the Eye-One Display color monitor measurement device, and allows users to profile their LCD or CRT monitors. Eye-One Display is available for $249.
- Eye-One Photo, designed for professional photographers, ships with the Eye-One Pro spectrophotometer. The Eye-One Photo

package profiles monitors and RGB printers. The package is available for $1,495.

- Eye-One Publish is designed for ad agencies, graphic designers, and publishers. It includes the Eye-One Pro device, and profiles scanners, monitors, and printers. Available for $2,695.

- Eye-One Beamer, aimed at the audio-visual market, profiles LCD projectors and displays. It ships with the Eye-One Pro device, Eye-One Match 2.0 software, and an Eye-One Beamer holder, which aims the Eye-One Pro at the projector screen. Available for $1,595.◊

Industry

On March 11, 2003, **Hewlett-Packard Company** (Palo Alto, CA) announced its intention to provide services designed to help customers manage printing and imaging. HP says it will offer help in four basic areas:

- Printer management tools;
- Print infrastructure;
- Connectivity;
- Printers and multifunction printers.

To support the collection of services, HP has developed a new version of the HP Output Server. Another infrastructure element supporting HP's services initiative is the HP Managed Print Portal, a customized, secure Web site to help administrators monitor fleets of printers. HP intends to provide consulting to assess needs, integration services to design, install, and manage infrastructure, a complete range of ongoing management and maintenance services, and financing.

In a way, the announcement formalizes an increase in emphasis in services that has been underway for some time, while it extends HP services in a more formal way to imaging and printing. The *phone briefing* was conducted by Steve Culhane, Vice President of Imaging and Printing Services, and a long-time Compaq employee. The *news release* about the initiative quoted George Mulhern, Senior Vice President of the HP Shared Print-

ing and Imaging Group, long-term HP employee. The juxtaposition of executives from the Compaq side and the HP side of the business is an indication that consulting about printing is one more area where the two businesses are being stitched together. Also, with the formal addition of imaging and printing to the former Compaq's consulting and service responsibilities, HP is in a better position to hobble Xerox's efforts to deliver a set of services that sounds quite similar.◊

Short-Run Printing

On March 11, 2003, **Xerox Corporation** (Stamford, CT) announced that it will stop selling its DocuColor DI line of digital offset presses. The DocuColor 233 DI-4, DocuColor 400 DI-4, and DocuColor 400 DI-5 were manufactured by Adast, and used direct-to-plate imaging systems developed by **Presstek, Inc.** (Hudson, NH). Xerox, which had marketed the presses since early 2001, is dropping the product line to devote its marketing resources to electrophotographic production printers, including the iGen3, which it is offering to the in-plant and commercial print market. Presstek has found a new partner to market its on-press digital imaging technology, however. **Kodak Polychrome Graphics** (Norwalk, CT), no stranger to the commercial print market, will offer the KPG DI to its customers. This four-color, two-up press, built by Ryobi, integrates Presstek's ProFire direct-to-plate imaging technology.◊

Publications

On February 3, 2003, the Printing Industry Center of **Rochester Institute of Technology** (Rochester, NY) announced the availability of a series of staff-written research reports covering pivotal printing industry issues. We read two of the monographs: *Digital Color: Where is the Market* (31 pages) and *Relationship Marketing Strategy* (23 pages). Six reports are available to the public at http://print.rit.edu. (When there, click on

Distribution Notes

	Date	Comments
IKON to sell Ricoh's Aficio 1224C/1232C copiers	3/3/2002	IKON to sell Ricoh's newly-introduced Aficio 1224C and Aficio 1232C color copier/printers.
Ilford to sell the Epson Stylus Pro 10600	3/2/2003	Ilford to offer the Epson Stylus Pro 10600 large-format ink jet printer to its customers in North America.
NRG to sell Atlas PrintShop Mail software	3/1/2003	NRG Group to distribute Atlas's PrintShop Mail variable-data printing software in the European market.
Océ, Docucorp sign marketing pact	2/25/2003	Océ to offer Docucorp's information and document management services to its corporate customers.

"research.") There are 16 reports planned in the series, with ten underway. The research is organized into four disciplines: Industry Definition and Strategic Analysis; Process, Productivity and Profitability; Cross-Media Migration and Integration; and Digital Color Printing.

We had to read *Digital Color: Where is the Market?* first, since that's the kind of question we raise ourselves in our own research. Pellow and co-authors Franziska Frey and Patricia Sorce learned what works and doesn't work by attempting to contact 149 early adopters of short-run color printing technology to hear their appraisal of the business aspects of color short-run printing. Interviews were conducted with 66 of 149 early adopters. From the survivors (41 of the 66 companies interviewed still have digital short-run color equipment installed and said that the equipment is meeting expectations), the research team found important characteristics of successful short-run color printer operators: they have an established customer base, have the financial resources to support the program, employ a staff able to drive program success, and manage to extend color demand printing into a broader set of "cross-media" services.

Those who still have the equipment but are unhappy

with their digital short-run programs cited a range of problems. Several mentioned high cost. A couple complained of low equipment reliability. Other problems include difficulty attracting sufficient volume, and unacceptable (to clients) print quality. Commenting that consumables costs are dropping and that most short-run color printer operators feel that reliability issues are behind them, the authors zero in on variable-data applications—supposed to become the salvation of the industry, according to some. The authors recognize that variable-data applications can be difficult to justify. They bemoan the lack of data to drive the applications. Return-on-investment expectations hinder marketing executives who ultimately foot the bill, and print-service sales personnel are unable to execute the consultative selling process required for variable information programs. Can the picture really be that bleak? We think that the benefits of variable-data applications have been over-sold and their complexity underestimated. This very powerful technique is too often implemented as a simple (and often ham-fisted) mail merge. One can *envision* doing a great deal more, but one must

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R.I.T. Printing Industry Center Publications

Industry Definition and Strategic Analysis	Author(s)
Relationship Marketing Strategy*	Patricia Sorce
Print Media Distribution in a Digital Age*	Frank Romano
Marketing Communications Demand Chain	Barbara Pellow, Patricia Sorce, Franziska Frey
Printing Industry Demographics	Frank Romano

Processes, Productivity and Profitability	Author(s)
Design to Production: The Critical Interface*	Frank Cost
Environmental Management in Lithographic Printing*	Sandra Rothenberg, Rafael Toribio, Monica Becker
Case Study —"Pictorial Offset Corporation: The First Company in the World to Receive Simultaneous ISO 9002 and 14001 Registration"*	Sandra Rothenberg, Monica Becker
Brand Color Specifications, Tolerances, and Printing Industry Performance	Edward Granger, Frank Cost
Evaluating the Effectiveness of Voluntary Initiatives Aimed at Promoting Pollution Prevention in the Printing Industry	Frank Cost, Sandra Rothenberg
The Implementation of Computer Integrated Manufacturing and Lean Production Practices in the Printing Industry	Frank Cost, Sandra Rothenberg
Life Cycle and Life Expectancy of Digitally Printed Materials	Franziska Frey, Frank Cost

Cross-media Migration and Integration	Author(s)
The Generation Beyond Print-on-Paper*	Michael Kleper
An Investigation of the Emerging and Developing Technologies Related to the Generation Beyond Print on Paper	Michael Kleper
A Series of Studies Focused on the Process of Reading	Michael Kleper, David Pankow, Frank Cost

Digital Color Printing	Author(s)
Digital Color—Where is the Market?*	Barbara Pellow, Franziska Frey, Patricia Sorce
Digital Color Printing—Confirming Our Initial Observations	Barbara Pellow, Franziska Frey, Patricia Sorce
Investing in Digital Color...The Bottom Line	Barbara Pellow, Franziska Frey, Heather Banis

*Available now at http://print.rit.edu

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have a reliable source of data and the ability to reflect one's knowledge of the customer in printed pieces in a meaningful way.

We read Patricia Sorce's *Relationship Marketing* report next. Relationship marketing has become a subject for serious study by academics, consultants, and practitioners. The topic is important because enhancing customer relationships provides a motivation for creating personalized printed pieces. The first half of Sorce's report presents a brief review of the academic underpinnings of customer preference, brand loyalty, and relationship marketing. Since brand appraisal and brand loyalty were important lines of pursuit in our recent *Price Wars* research, we read R. L. Oliver's definitions of "degrees of faithfulness to brand" with interest. In the office printer business, everyone but HP is up against what Oliver calls the "Action" level of brand loyalty, which is "...the active desire to overcome situational influences and marketing efforts that may have the potential to cause switching behavior."

Sorce conducted a research study examining consumer attitudes toward marketing communications tactics. Her results indicate that people actually *like* to receive catalogs from stores they patronize and mail promotions from companies with which they do business. For better or worse, one conclusion of her work is that communications that acknowledge our attitudes will be more favorably received. "This research suggests an expanded scope of attitudinal data to gather," Sorce
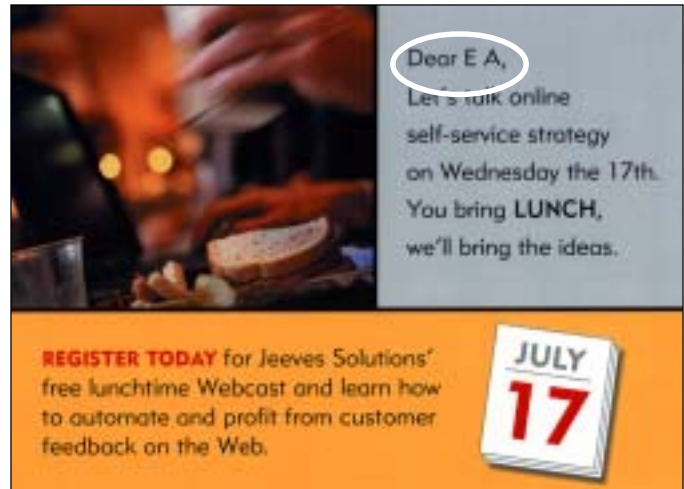
Two of the RIT reports say that the lack suitable customer data is holding back the industry. This example is from Ask Jeeves. With this kind of personalization, you would rather not ask.

writes. Sorce suggests that, in addition to capturing attitudes about products, we should learn customer communication preferences (e-mail vs. postal system). Sorce sees three important barriers to personalized print campaigns: inadequate databases, an ROI that limits the set of applications where one-to-one campaigns have a chance to out-perform small-segment targeting, and lack of awareness within client firms of marketing automation techniques and the capabilities of print technologies.◊

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