

Colour Production Printing & Variable Imaging in Graphic Arts

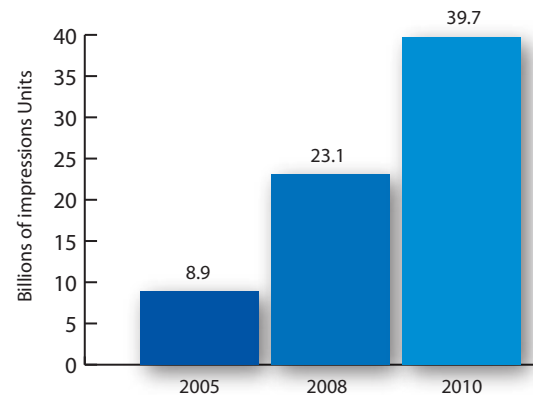
By Gilles Biscos

The market for colour digital production printing continues to grow, both in terms of software and equipment as well as print volume. According to *Color Production Printing & Variable Imaging in Graphic Arts*, a study recently published by INTERQUEST, the volume produced on digital full-colour production systems by graphic arts print providers in North America will increase from about nine billion letter-size impressions in 2005 to close to 40 billion in 2010—a 35% compound annual growth rate (CAGR) over the period

full-colour copier/printers has continued to decline, while high-volume users of digital presses can now achieve a TCO of around \$.03. Another approach equipment vendors are taking is to lower the cost to produce monochrome output on full-colour systems. Users can now produce letter-sized monochrome pages on an HP Indigo press 5000 for \$.004.

Convergence continues to reshape the printing industry. More vendors are climbing onboard the convergence of traditional and digital processes by offering combined workflow solutions

FIGURE 1: FULL-COLOUR DIGITAL PRINT VOLUME PRODUCED BY NORTH AMERICAN GRAPHIC ARTS PRINT PROVIDERS

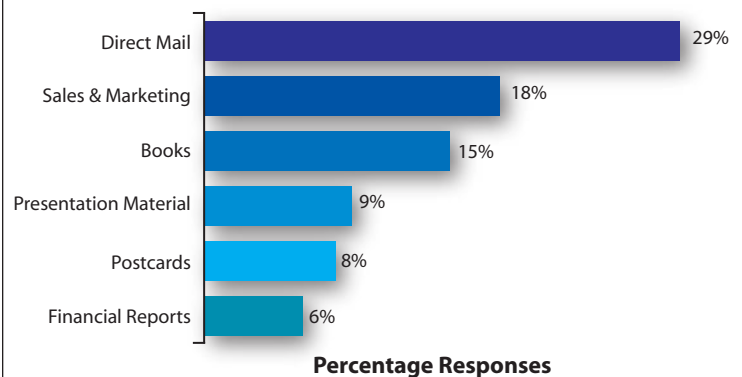


(Source: INTERQUEST)

Inkjet technology is making inroads into the production market on multiple fronts. Riso is trying to gain a foothold at the lower end of the spectrum, while Dainippon Screen has joined Kodak Versamark in going after higher-volume applications such as direct mail. At Graph Expo held in October in Chicago, IBM presented a technology demonstration of a high-speed ink jet system based on the Dainippon Screen machine that will target transactional, direct mail and book printing applications. Also at Graph Expo, Olympus showed a prototype of a roll-to-roll colour inkjet press that offers speeds of 40 meters per minute and is targeted at the OEM market. It is true that inkjet systems only comprise about three to four percent of the installed base of full-colour production systems, but it's starting to gain momentum and will surely make a bigger impact in years to come.

Vendors of full-colour electrophotographic equipment are dealing with a range of issues in their efforts to increase market share and page count. As always, cost is a critical component for success. The cost of consumables and maintenance for high-speed

FIGURE 2: FASTEST-GROWING FULL-COLOUR APPLICATIONS FOR GRAPHIC ARTS PRINT PROVIDERS



(Source: INTERQUEST)

and hybrid product configurations, while end users are reshuffling internal operations to maximize resources. Another survey conducted by INTERQUEST in 2006 shows that more and more transactional service bureaus are moving into graphic arts applications. Many of these organizations specialized in data center output (i.e., bills, statements, invoices, etc.) have acquired colour digital presses and are now producing personalized full-colour marketing collateral material, direct mail and even in some cases books. Another example of the convergence trend relates to the development of “hybrid” systems—combining conventional and digital printing technologies. Müller Martini and Kodak Versamark demonstrated this type of solution at the PRINT 05 tradeshow last year. During an IPEX forum about the future of Print organized by Xerox, Bernard Schreier—Heidelberg’s president—said, “In 2014, I think we will see more consolidation and less suppliers, and more hybrid machines combining different technologies.”

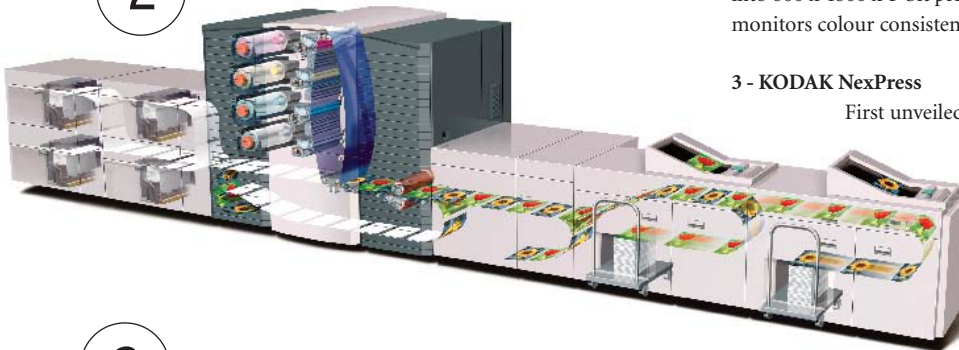
According to the INTERQUEST graphic arts survey cited ear-

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**1 - HP-Indigo 5000**

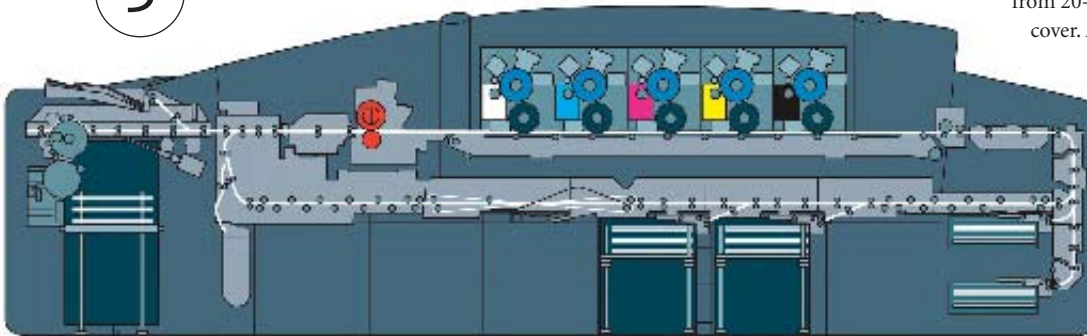
Recognized for its liquid ElectroInk and its conventional offset-like printing, the HP Indigo press 5000 can print 4,000 full-colour letter size pages per hour (two-up). It prints at a resolution of 812 dpi, capable of line screens up to 230 lpi. The machine accepts substrates up to 12.8 x 19 inches and coated stocks from 18-lb. bond – 130-lb. cover. The 5000 offers seven-colour capability and the ability to mix custom colours.

2

**2 - Xerox iGen3**

Now offering the iGen3 110 and the iGen3 90 (up to 6,600 or 5,400 pages per hour respectively), Xerox's solution for high-speed colour handles coated stocks from 60-lb. text to 130-lb. cover, or uncoated from 16-lb. bond to 130-lb. cover. Sheet sizes can run up to 14.3 x 22.5 inches. The four-colour technology prints a resolution of 600 x 600 dpi, 8-bit depth (transformed into 600 x 4800 x 1-bit printing). iGen3's SmartPress Technology monitors colour consistency throughout runs.

3

**3 - KODAK NexPress**

First unveiled at DRUPA 2000 in a joint venture with Heidelberg, today's KODAK

NexPress 2500 runs up to 5,000 letter-size sheets per hour at 600 dpi. Handling a variety of substrates, its maximum sheet size is 14 x 20.47 inches, taking uncoated papers from 16-lb. bond up to 130-lb. cover, or coated sheets from 20-lb. bond up to 130-lb.

cover. An optional fifth imaging unit allows for spot-colour reproduction or a coating option. An inline densitometer monitors colour continuously.

lier, direct mail is the most widespread and prolific application for digital full-colour printing (static and variable) among respondent companies. Marketing material as the second leading volume generator behind direct mail, accounts for about 16% of the total colour digital output produced by the survey sample. The survey also strongly suggests that digital book printing will make gains in producing colour (mostly static) pages in the future. Digital colour printing is increasingly being used for user and operator manuals, particularly in the automotive industry. Other popular full-colour digital printing applications include posters, signs, and other point of sales material.

Colour variable data printing continues to grow in the graphic arts market. Currently it is dominated by direct mail—the most common as well as the highest volume-generating application. About 80 percent of the respondent companies with digital colour equipment produce colour variable data printing, and about half

of their colour digital volume contains variable content

Another area showing momentum is Web-based fulfillment. Nearly half of the respondents to the INTERQUEST survey offer Web fulfillment services, and the Internet is involved in over one-third of the variable data jobs produced by respondent companies.

A number of new systems have been introduced in the past six months. At IPEX, Xerox launched a lower speed version of the IGen3—the Model 90, and at ON DEMAND 2006 (May 16-18, Philadelphia) Xerox unveiled the 50 ppm DocuColor 5000 that replaces the DocuColor 5252. Also at IPEX, Canon finally revealed its long due 70-ppm ImagePRESS CP7000VP and 14-ppm C1, while Konica Minolta unveiled the bizhub PRO C6500, a 65-ppm unit. These devices, which were scheduled to be available towards the end of the year/early next year, are likely to have a significant impact on the market in 2007. In addition, at Graph Expo Punch



4 - Canon imagePRESS C1

Targeting the proofing and short-run production colour market, the Canon imagePRESS C1, prints 14 colour and up to 60 black-and-white letter-sized pages per minute. Launched this fall, the C1 is a precursor to the imagePRESS C7000VP, a 70 page per minute engine expected to become available in mid to late 2007. The imagePRESS platform uses new oil-free V Toner, and is capable of printing at resolutions up to 1200 dpi. The C1 handles media sizes up to 13 x 19 inches.

5 - Xeiikon

Introduced at Graph Expo this year was the upgraded Xeiikon 6000, capable of printing 160 letter-sized pages per minute (9,600 pages per hour) at 600 dpi. The roll-fed press now offers a fifth colour option, and handles stocks from 12-lb. text to 130-lb. cover in widths from 12.6 inches to 20 inches with a virtually unlimited image length. The engine uses new polyester-based shape-modified Form Adapted (FA) toner. The toner is Pantone certified and is available in multiple colours plus white and clear.

Graphix showed for the first time in public its new Xeiikon 6000 press, which offers speeds of 160 impressions per minute.

Vendors of full-colour production copier/printers, as well as inkjet and electrophotographic digital presses continue to push the envelope on print quality through enhancements to their systems.

Base engine speed is only one factor in throughput. Vendors are also striving for productivity improvements wherever they can find it, including more efficient controllers and software, faster imaging on heavy stocks, and longer continuous run times and monthly duty cycles.

Paper handling, finishing features and options have also advanced over the past 18 months. Printing systems can now handle a broader selection of sizes, weights and finishes. The HP Indigo press 5000+ can print 12 x 18-inch paper from all trays, and the 110-ppm iGen3 is available with an oversized paper option (up to 44.3 x 22.5 inches). The Kodak NexPress 2100 plus and 2500 feature a 13 percent increase in the size of substrates they can handle and can print up to 130-lb. cover stock. Practically all production copier/printers now offer booklet-making options, and inline perfect binding is emerging. **CP**

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