

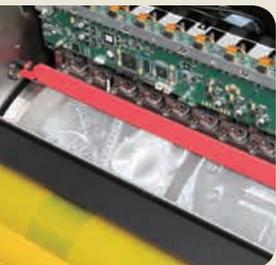
A REPORT PREPARED FOR PRESSTEK, INC.

How to Bridge the Strategic Production Gap Between Offset and Digital Toner Printing

Adjusting the Print Manufacturing Platform to Meet Today's Market Requirements

By Cary Sherburne





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About the Author

Cary Sherburne is a well-known author, journalist and marketing consultant whose practice is focused on marketing communications strategies for the printing and publishing industries. Sherburne has written six books, including *Digital Paths to Profit*, published by NAPL; and most recently, *No-Nonsense Innovation:*



Practical Strategies for Success, written with Bill Lowe, the Father of the IBM PC and scheduled for publication in the spring of 2009. In addition to writing regularly for *Printing Impressions* and *Printing News*, Sherburne is a Senior Editor at WhatTheyThink, the leading news and analysis resource for the printing and publishing industry.

How to Bridge the Strategic Production Gap Between Offset and Digital Toner Printing

Adjusting the Print Manufacturing Platform to Meet Today's Market Requirements



The only constant is change, continuing change, inevitable change, that is the dominant factor in society today. No sensible decision can be made any longer without taking into account not only the world as it is, but the world as it will be.

— Isaac Asimov
Author and Professor of Biochemistry
1920–1992

Why Is There a Gap?

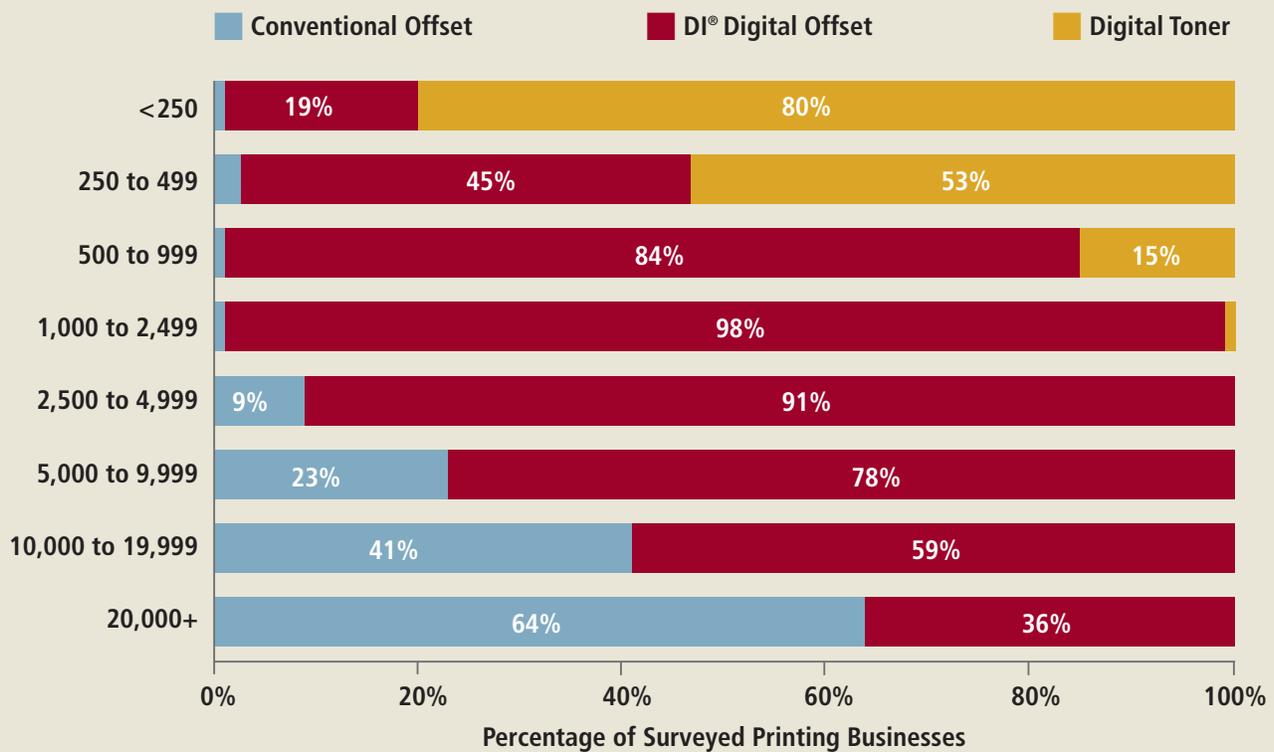
The role of print in the media mix continues to change due, in part, to the increased availability of alternative media, often perceived as less expensive and perhaps more effective than print. Print is by no means dead, and it will continue to play a key role in the communications mix. However, market changes have manifested themselves in a number of ways that have not necessarily been positive for the printing industry.

Media competition, a faster pace of business, and increasingly functional and cost-effective digital production technologies have converged to form an environment that is creating growing demand for shorter run lengths and faster turnaround times.

In addition, there is an entirely new competitive playing field enabled by the Internet—the ability to order, track, proof and otherwise do business online is breaking down the geographic barriers that had previously kept print a local business.

Moreover, many items that were automatically printed in the past have been supplanted by digital distribution, with these documents perhaps printed locally on a desktop or workgroup printer, or not printed at all. Consider the purchase of a new computer, as an example. Chunky manuals have been replaced with small flyers directing the purchaser to visit the web for more information. As a result of these and other dynamics, there has been an overall decline in printing shipments, largely due to the decimation of long-run print applications such as manuals; reduction in page count for magazines, directories and catalogs;

Figure 1: Technology Choice Based on Run Length



Source: InfoTrends, *Presstek DI Printing Study: Bridging the Gap Between Digital Toner and Conventional Offset*

and migration to print on demand—or no print at all—for product support materials, brochures and other marketing collateral.

To be successful, printers must learn to manage their businesses in a manner that addresses these new market conditions. One of the challenges this presents is a reconfiguration of the print production platform to efficiently and cost effectively produce the full gamut of short run (less than 250 sheets), mid-range (250 to 20,000 sheets) and long run applications (20,000+ sheets) to meet the demands of today’s buyers. While longer runs are easily handled with conventional offset presses, and ultra-short-run or personalized printing is ideal for toner-based digital print engines, it is the midrange run lengths of 250 to 20,000 that can be challenging to profitably produce. Research firm InfoTrends pegs this volume band as the highest growth volume band, yet it represents a strategic production gap between offset and digital technologies that many printing firms are struggling to profitably bridge.¹ Figure 1 (above) illustrates that print shops

that employ a toner device, a DI® press and conventional offset are using Presstek DI as the bridge between toner and offset.

Dr. Joe Webb, Director of WhatTheyThink’s Economics & Research Center, summed up the situation by saying²:

“Price pressures on commercial print have been created by media competition and austere discretionary corporate budgets. Other cost pressures are internal to printing companies themselves; there is a structural incompatibility of the industry’s installed base that resulted in limited profits, desires to consolidate, and efforts to streamline operations. Profitable printers have realized that streamlining is not enough, and a grander re-thinking of the nature of the printing business is needed.”

¹ *Presstek DI Printing Study: Bridging the Gap Between Digital Toner and Conventional Offset*, InfoTrends, September 2008

² *Major Trends and Rethinking the Nature of the Print Business*, Joseph W. Webb, Ph.D., September 2006

The World As It Is

Most print service providers will agree that in addition to shorter cycle times, today's buyers of print are seeking more high-quality color and shorter run lengths than in the past. As highlighted above, this growth opportunity—in the 250 to 20,000 impression range—lies squarely within a strategic production gap for many print service providers.

Mixing Technologies

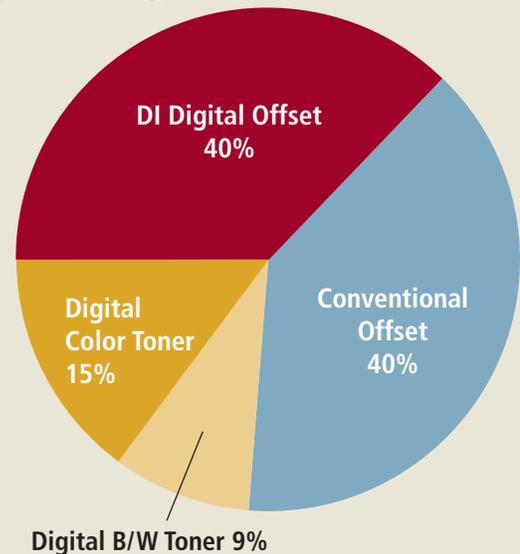
As run lengths have shortened, many commercial printers have added digital toner-based printing to the mix to address these needs. The Hoppman Group of Wauwatosa, Wisconsin, is one company who took this approach, installing a Konica Minolta bizHUB C650 to complement its four-color half-size (20" x 28") press and its small format one- and two-color presses. "We planned to use the Konica Minolta for short runs that were not economical to produce on our half-size press," commented Kyle Tuska, Vice President of Operations.

Once the Konica Minolta was installed, Tuska reports, "We noticed that there was a void between the top end of the Konica Minolta's economic order quantity and the bottom end of our half-size press. A significant amount of work was falling in that gap. We could not be competitive and were missing many opportunities. We needed a solution to fill that gap." Hoppman added a Presstek 34DI® digital offset press to fill this strategic gap, and reported a 40 percent growth in revenue for the first year.

Growth and Profitability

The Hoppman Group is not alone in rethinking its approach to print manufacturing and growing both top line revenues and profits as a result. In its 2008 study referenced on the preceding page, research firm InfoTrends found that there was a strong correlation between the acquisition of a Presstek DI press and the growth and profitability of a print business. The study also indicated that print volume is continuing to increase on these devices, which suggests that print providers like The Hoppman Group are building their businesses around their DI presses. Respondents to the study also indicated that their DI press was responsible for 40 percent of profits, as shown in Figure 2 (above right).

Figure 2: Percentage of Print Profit by Technology



Source: InfoTrends, Presstek DI Printing Study: Bridging the Gap Between Digital Toner and Conventional Offset

Why Presstek DI® Digital Offset?

The Presstek 52DI and 34DI digital offset presses deliver environmentally-friendly, high quality, short-run four-color offset printing, economical in runs as low as 250. On-press imaging of chemistry-free plates ensures precise registration and fast run-up. The DI's ability to go from file to sellable color within 20 sheets provides fast turnaround while greatly reducing paper waste. Its waterless ink technology eliminates water consumption and provides fast drying times. The Presstek 52DI is a 52cm landscape format press operating at speeds of up to 10,000 sheets per hour with a maximum sheet size of 20.47" x 14.76" (520 x 375 mm). The Presstek 34DI is a 34cm portrait format with a maximum sheet size of 13.39" x 18.11" (340 x 460 mm) with a maximum operating speed of 7,000 sheets per hour.

High-Quality Output Made Easy

Speed and efficiency are not the only virtues of Presstek DI presses; they are engineered to produce superior quality offset printing with minimal operator intervention. DI presses are highly automated and designed to deliver precise first-sheet registration.

Investing for the Future

By Dr. Joe Webb

The demand for printed materials is constantly changing because information technology and economic factors constantly interact. Slow economic times can actually intensify the pace of change as print buyers look for ways to reallocate their budgets and try new things. It's essential to have a forward-looking view of formats and uses of the print medium when investing in capital equipment. You can't assume that what clients want today will be what they want or need tomorrow.

Adapting to Market Trends

Among the key market trends that must be considered are shorter run lengths, declining print prices as the print medium competes with electronic media and office technologies, and the flood of digital documents and content that creates an expectation of fast turnaround among clients. It's almost as if they say, "If I can print it out on my desktop, why should I wait for it to be delivered from the printer?" This is especially true of newer print buyers.

Shorter run lengths favor smaller press formats and their innate makeready cost characteristics. Virtually all graphic content is created digitally now, allowing new workflow technologies to streamline production times and costs. Content owners are also looking for ways to create their basic content once and deploy it to many media formats, including print, Internet, computer displays, mobile devices, and others, spreading the content creation investment across them all.

Print businesses must continually adapt their offerings to these changes in the buying community in order to compete in the market, but no two printing businesses are exactly the same. They have different histories, installed equipment, financial capital, and client bases

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Unlike conventional presses where registration is challenged by the tower-to-tower transfer of paper, Presstek DI presses achieve precise registration with Presstek's unique Zero Transfer Printing (ZTP) process—all four colors are laid down onto the sheet without any sheet transfer between grippers. Ink keys are automatically pre-set on both the 52DI and 34DI presses during file ripping. Program inking automatically supplies the correct amount of ink to the ink rollers to match the specific job. Upon job completion, the ink rollers automatically restore to an even state. The 52DI's waterless press design combined with its unique 2:1 roll out ratio provide the benefits of unparalleled ink coverage and the ability to print solids more easily. Both the 52DI and 34DI support 300 lpi and FM screening without incurring additional time or expense.

Bridging the Gap

Today's DI presses from Presstek are the benchmark in the industry and are the de facto bridge for the strategic production gap that exists between conventional offset and digital toner-based presses. According to an InfoTrends' study, *U.S. Print On Demand Market Forecast: 2005-2010*, the Presstek DI delivers a 50 percent cost savings on an average per letter-size page when compared to a high-volume production color digital press, and job profitability is 13 percent higher on a DI press when compared to a conventional offset press.

In fact, on average, according to InfoTrends, 34cm DI presses achieve makeready 23 percent faster than conventional offset, while makeready time savings on 52cm DI presses are even greater, 38 percent faster than conventional offset.

New Applications, New Customers

In addition to improved productivity and profitability for runs of 250 to 20,000 impressions, DI owners also report that the press has opened their businesses to new opportunities in the form of new applications and new customers, especially in combination with their digital toner-based print engines.

25 Percent Growth for Topknotch

Topknotch Prep & Print, Ltd., of Mississauga, Ontario, Canada, recently acquired its second Presstek DI press. Owner Amin Suleman says, "As our business grew,

we were farming out 30 percent to 40 percent of our work. Our customers had grown so used to the high quality of the DI press that they were not happy with the outsourced product, so we acquired a second DI press to accommodate the additional volume.” Suleman is producing take-out menus and refrigerator magnets for one large customer that demands consistent high quality. “The DI press has allowed us to pursue higher margin work, as well specialty printing on plastics and heavy stock. Our business has grown more than 25 percent thanks to our Presstek DI presses.”

Catawba Combines High Quality DI and Variable Data Toner-based Printing

Catawba Print & Mail of Hickory, North Carolina, added a Presstek 52DI press and a toner-based digital press to bring print and mail under one roof. The firm was looking for the offset quality a DI press delivers, without the complexity of a conventional offset press. Director of Print Operations Tim Larson cites an advertising agency client that was getting one-week turnaround from a commercial printer for 20,000 6" x 9" postcards, with more time consumed by transferring them for mailing. Catawba can produce them on its Presstek 52DI press with a toner overprint of variable data in a day and get them right in the mail stream in an end-to-end bundled service, and as a result has a very satisfied new print customer. Owner L.F. Miller reports that the 52DI press has made money for the firm every month since it was installed.



Catawba Print & Mail's Presstek 52DI has grown its printing business while also driving more business to its mailing services. "We see more companies using post cards and self-mailers," says owner L.F. Miller.



and will make different equipment decisions. But there are three basic categories that provide a basis for considering a change in press technology.

- Accommodation Work: Right Tool, Right Job
- Growth or Change in Business Mix
- Adapting to Market Changes

Accommodation Work: Right Tool, Right Job

As the marketplace and client requirements change over time, the equipment in a print business, especially as it gets older, often fails to match emerging market demands—using 1999 equipment to play in the 2009 market is not particularly effective. Unfortunately, 1999's costs and prices don't match the needs of today's market. And the job mix has changed as well, with shorter, high-quality runs in even greater demand than before. These shorter runs, in the 250 to 20,000 range, are marginally profitable to produce on either conventional offset presses or toner-based digital presses.

Rather than purchase a new large press, the business can often be better served by offloading work that is marginally profitable using conventional offset or digital toner-based technologies to a smaller press with the latest controls and automation. In this way, each press is being used for the work for which it is best suited from a cost, profit, and turnaround perspective.

A digital offset press such as a Presstek DI press can improve the efficiency of both digital toner and conventional offset presses. The digital toner press can be reserved for ultra short run and variable data work, long runs in excess of 20,000 can be placed on a conventional offset press, while the mid-range work can be produced with the DI. A Presstek DI also can be used for versioning and to produce preprinted shells that are then customized or personalized using the toner device, often resulting in a better total cost and quality for the client.

Both of these scenarios allow the printing operation to use the right tool for the right job, bridging the strategic gap left between conventional offset and digital toner-based presses. This also allows the printing operation to accommodate

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Investing for the Future

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a wider range of work from clients, rather than farming it out, or walking away from it, both of which could ultimately result in the loss of the account to a competitor with the right production mix.

There are always situations where printers take jobs with specifications that don't properly fit their presses. This "accommodation work" used to be short run jobs or quick turnaround jobs that are actually what the market seems to demand more of today. The idea was that it was worth running the job, or outsourcing it, to hold onto the customer or to break into a new account. Why shoehorn accommodation work onto presses that are not right for the job or lose margin and control by sending it out when you can have a more flexible operation with a newer, smaller, and digital-driven press?

Growth or Change in Business Mix

In this situation, a business is growing and needs to offer quality color work while minimizing its overhead burden. This is often the situation of printer with \$1.5 to \$2.5 million in sales who needs to add new capabilities to increase sales. In order to take full advantage of the trend toward shorter runs, digital media and digital workflows, a business in this position can augment its production portfolio with a fully automated Presstek DI press. Especially for businesses that have previously had digital toner production only, or are migrating from two-color to four-color work, a Presstek DI press can meet these new business requirements without the complexities of conventional offset printing.

Adapt to Market Changes

There are times when a company's client base and client needs have changed to the extent that the capabilities on the existing shop floor no longer meet those needs. Rather than retain equipment with makeready and other costs that impair profitability, it is often a better choice to divest that aged equipment and reinvent the business with new workflows and new equipment. This can be painful and difficult, but it can be the

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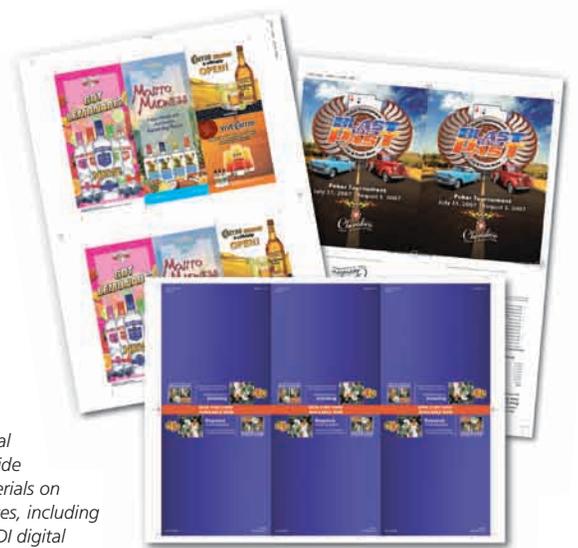


Higher Efficiency and Capability at Odyssey Digital

Odyssey Digital of Tulsa, Oklahoma, is another example of a digital printing firm that is benefitting from implementing Presstek DI printing.

The company was an early adopter of DI printing using a Heidelberg QuickMaster DI, having acquired it in 1998, and has built a reputation for fast turnaround times with three-day turnaround being the norm. Owner John Roberds replaced his original QMDI presses with a new Presstek 52DI to supplement his three roll-fed Xeikon digital toner-based presses.

Once the 52DI was installed, Roberds found lots of other advantages to the press. For example, one application Odyssey had been producing on the older DI presses were the cards that Wal-Mart uses in CD/DVD bins to promote a particular artist or movie of the month. With the new larger format landscape press, Roberds is able to produce these six-up on a sheet,



Odyssey Digital produces a wide range of materials on multiple devices, including a Presstek 52DI digital offset press. Presstek worked with Odyssey to create color profiles that ensure color fidelity across the spectrum of output devices and digital print products. The Presstek 52DI's landscape format and 52cm sheet size provide Odyssey Digital with high degrees of versatility and control in imposition and printing.

compared to the four-up production he was limited to in the past, significantly improving throughput and productivity. Odyssey also produces a wide range of brochures, newsletters and other applications for customers, in addition to point-of-purchase (POP) work for companies like Wal-Mart, using the heavier stocks. Presstek DI presses are specified for stocks from 0024" to 0.02" (0.06–0.5 mm) in thickness.

Printing on Heavy Stock Opens Doors for The Hoppmann Group

The DI's ability to print on heavy stocks has also opened new doors for The Hoppmann Group (previously introduced on page 3). Vice President of Operations Kyle Tuska says, "This has gotten us into a very lucrative national menu program. For one customer, we produce 11" x 17" menus on 24-point board, with six to 10 pages. Offline, we die cut rounded corners, laminate and bind with plastic coil, making an 8.5" x 11" menu book." In the past, this project could only be produced on 16-point board, and the low runs of 250 to 500 were expensive. "With the DI press," adds Tuska, "we are able to deliver a better quality product while saving our client 20 percent and improving our margins."

Counter mats for the auto parts industry have also become a good application for Hoppmann. "When the auto parts distributors develop a new program for their merchants and stores, they like to provide counter mats to promote those programs," says Tuska. "They might need anywhere from 3,000 to 20,000 of these mats depending on how they are rolling the program out. We produce them on the DI press on 24-point board, put on a foam back, and laminate the top. They are a big hit."

Hoppmann is also producing more four-color envelopes, as well as products on plastic and low-tack vinyl that can be used in lieu of static cling.



A spiral-bound catalog with slip-case and personalized mailers are examples of how Hoppmann combines the capabilities of its Presstek DI press with those of its toner-based printing and conventional offset equipment.

right choice when it is clear that the market will never be what it once was, and that there's no such thing as "business as usual." This is the kind of situation printers have typically faced when a big "pet" account moves, is acquired, or goes out of business. That is, there is a radical change in the customer base, and the new customers in the market require a new base of equipment that better suits their current and future needs.

Conclusion

Now is the time for print businesses to take a critical look at their production platforms. The market is changing, and the production platform must change as well. The successful printing business of the future will most likely consist of a hybrid production platform—leveraging the individual benefits of conventional offset, digital offset and digital toner-based presses to meet a growing range of customer needs and to bridge the strategic production gap that exists today between offset and digital toner-based technologies. This will ensure a stronger, more profitable business that is well-positioned to retain existing customers and gain new ones. ■

Dr. Joe Webb is one of the graphic arts industry's best-known consultants, forecasters, and commentators. He is the director of WhatTheyThink's Economics and Research Center and author of "Renewing the Printing Industry."



Since January 2003, his "Mondays with Dr. Joe" column has become a must-read feature of WhatTheyThink, as have his quarterly economic forecast webinars, where he analyzes trends in the economy, technology, and the industry, interpreting what they mean for executives and their strategic decisions.

He is a Ph.D. graduate of the NYU Center for Graphic Communications Management and Technology (1987) and serves on the Center's Board of Advisors. He holds an MBA in Management Information Systems from Iona College (1981) and was a magna cum laude graduate in Managerial Sciences and Marketing from Manhattan College (1978), and was a member of the economics honor society.



Complementing Large Offset Presses with Short Run DI Digital Offset Printing

Presstek DI presses are delivering results for 40" commercial shops that have chosen not to include toner-based digital printing in the mix. Universal Lithographers of Sheboygan, Wisconsin, leverages its Presstek 52DI press to make its 40" offset presses more productive while eliminating the need to outsource short runs or turn work away.

Many of the company's customers produce long-run catalogs and other projects with counts in the 40 to 60 thousand range updating those pieces once or twice a year. "Quite often," says Vice President Jerry Keller, "they need an additional 100 to 1,000 pieces for trade shows, special events or sales presentations. In the past, our choices have been to run the work and take a financial loss, outsource it, or simply turn it down." With the 52DI press, Universal is now able to profitably produce these short run, fast turn projects, increasing customer retention.

Southwest Precision Adds a Presstek DI Press for Short Run Color and Increases Capacity of Its 40" Presses

Tim Tully, President of Houston-based Southwest Precision Printing, has also seen the benefit of complementing its 40" presses with a Presstek DI press. He says, "By adding the Presstek 52DI to our offset production operation, we will be able to more efficiently produce high quality four-color printing in the 2,000 to 10,000 range. By moving this work from our 40" presses to the DI, we are actually adding 40" capacity by making more room in the production schedule for longer run, larger format projects that are more suited to those presses. At the same time, we see significant opportunity to solicit new work from our customers made possible by the DI press." For

example, Tully plans to utilize the DI press to produce four-color Number 10 envelopes in-house. "This is a growth market," he adds. "We have been outsourcing this product, and with the DI, will now be able to produce them ourselves."

The World As It Will Be

Most industry experts agree that run lengths and turnaround times will continue to compress, and the range of applications demanded by buyers will continue to grow. And so will the need to employ multiple technologies to address these needs profitably. In his "Rethinking the Nature of Print" white paper, Dr. Webb says:

"In the end, it's not an either-or situation. Printers have always had multiple print technologies or formats in their shops. From small printers with duplicators and copiers, all the way up to heatset plants that also have sheetfed presses, digital offset and toner-based digital printing will be common on shop floors, sharing a common workflow system. While adoption of differing technologies is rarely simultaneous, the nature of print demand and market competition will conspire to make it so. In the long run, it is unlikely that successful printing companies can survive by having only one print technology."

Dr. Webb adds:

"Presstek as a company, and print as a medium, are at a fascinating crossroads of technology, market opportunities, and competition. The company's products allow printers to compress their workflow to eliminate costly steps, leveraging the modern content creator's capabilities to make better, richer, and more predictable printable files." ■

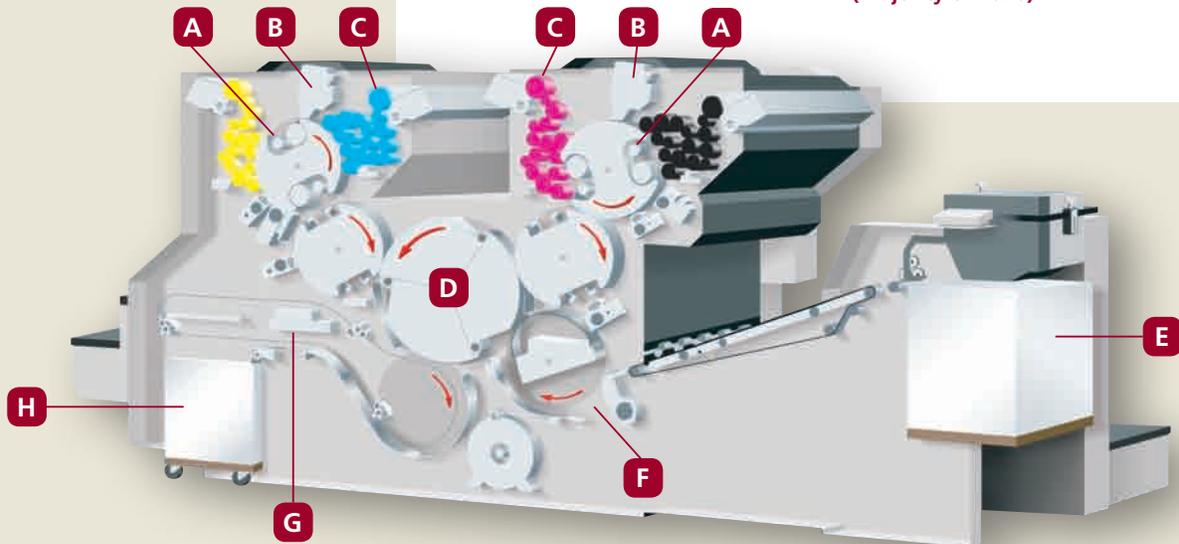


To read complete case studies, visit www.presstek.com.

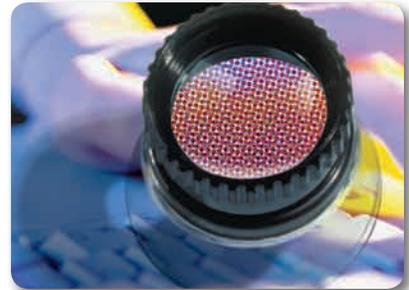
Presstek DI® Bridges the Gap Between Digital Toner Printers and Conventional Offset

Presstek DI presses are the optimum solution for bridging the gap between toner-based and conventional offset printing. The majority of printers surveyed in a 2008 InfoTrends study consider their DI press to be complementary to their conventional offset and toner-based printing capabilities. This is a key finding in the study, indicating that print providers are seeking a range of flexible solutions that meet the increasingly complex requirements of their customers.

Download the complete InfoTrends study at www.presstek.com



- A** ProFire Digital Media inside each double plate cylinder is automatically dispensed and tensioned.
- B** Presstek's ProFire Excel imaging unit simultaneously images all four plates, on press, at 2540 dpi in 4.5 minutes.
- C** DI waterless printing does not require fountain solutions, eliminating the need to constantly monitor and adjust ink/water balance.
- D** The triple-sized common impression cylinder holds two sheets tightly, eliminating gripper changes. A sheet picks up four colors in two revolutions.
- E** Print on a wide range of substrate choices—from heavy card stock to onion skin; 0.0024" to 0.02" (0.06mm to 0.5mm).
- F** Printing speeds up to 10,000 full-size press sheets per hour (20,000 letter-size pages per hour)
- G** Infrared dryer for fast drying of waterless inks—back-up sheets and deliver jobs to the bindery faster
- H** Reduce paper waste by eliminating ink/water balance and sheet transfer. File to sellable color within 20 sheets.



A Sustainable Future

For over 20 years, Presstek has been an innovator in changing the way printing is manufactured. Presstek led the industry with the world's first DI digital offset presses and thermally-imaged chemistry-free printing plates. Today, Presstek's digital offset solutions continue to lead the industry to a more profitable, responsive and sustainable future.

For information about Presstek digital solutions, visit:

www.presstek.com

**or call +44 20 8745 8000 (Europe)
or 1-603-595-7000 (North America)**

