Trends and New Applications for Digital Communications

Part 1 of a Two-Part White Paper

by Richard Romano, Senior Analyst, WhatTheyThink

WhatTheyThink?

Abstract

Despite what you may think, digital printing by itself has not changed the face of commercial printing. Rather, it has helped print service providers better cope with a changing market for print. Systems such as the Kodak NexPress Platform allow printers to offer high-value products and applications that are generations removed from the "legacy" print applications they have been used to. This white paper—the first of two parts—looks at the distinction between high-value and legacy applications. Part 2, coming in Q2, will look at how the Kodak NexPress Platform, with its new features and functions, can add value to digital printing, and to printing in general.

Introduction to Digital Printing

A Tale of Two Technology Disruptions

In 1904, an accident at a letterpress printing shop in Nutley, N.J., would engender a new printing technology that would revolutionize the industry. Ira Rubel owned a papermill and print shop. He had been using lithographic stone presses to print bank deposit slips and, as was common at the time, the press's impression cylinder was covered with a rubber blanket. Occasionally, the person feeding the paper into the press missed a sheet, and the litho plate would print directly on the blanket. The next sheet through the press would then pick up the impression from the blanket. Rubel noticed that the blanket-printed image was sharper than the image from the plate itself. Light bulbs went off over his head, and thus was born offset lithographic printing, a technology that, while initially deemed to be inferior to letterpress printing, would by the 1970s completely displace letterpress in the commercial printing industry.

Fast forward to 1993. That year saw two revolutionary new devices: the Indigo E-Print 1000 and the Xeikon DCP-1 (aka the Agfa Chromapress). These were the first commercially viable digital presses, devices that could be used for commercial printing without the need for negatives or plates, imaging instead directly from digital data. Digital printing was a technology that, while initially deemed inferior to offset printing, would by the 2000s to a large extent displace offset in the commercial printing industry.

In other words, we've been here before. The primary difference, however, is that offset was a direct replacement for letterpress, printing the same basic products and materials. Digital, on the other hand, was not necessarily a direct replacement for offset, but allowed for the printing of entirely new product types.

The advent of digital printing did away with the need for makeready. No platemaking, no plate mounting, no getting up to color, etc. This meant that short runs—or even runs of a single impression—were just as economical as long, offset runs.[1]

Digital printing's first half-decade was a rocky one. Although the technology was impressive, quality issues abounded. It required special paper for optimal results, color fidelity was a problem, but most importantly, there was little evidence that there was a market for short-run color printing. Shops that were early adopters of digital printing found it a tough sell.[2]

Enter the Internet

Over the 1990s, there was another technological development you may have heard of: the Internet. As the Internet took off and more businesses—and more content—moved online, by the end of the decade, anything that smacked of "digital" was in high demand. E-mail, the Web, e-commerce, and database marketing had fomented a communications revolution that made *speed* and *relevance* of utmost importance. If you could get content to consumers fast and target it directly to them, marketers found,

[1] Well, that's not *entirely* true. RIP time—especially back in the days of less-than-robust processors—was the digital analogue of makeready, and was a cost often passed on to customers. As a process, though, RIPing was far less substantial than makeready.
[2] Here we need to add the usual caveat that "short-run" printing is a nebulous concept, without any clear consensus on what constitutes a "short run." Less than 10,000 impressions? 5,000? Under 1,000? Even fewer? After all, for a sheetfed offset printer, short run could be anything under 50,000 impressions; for a large publication printer, anything under a million could be "short run"!

response rates and ROI went through the roof, relatively speaking. Suddenly, digital printing, with its fast turnaround and, more importantly, its ability to create targeted prints (thanks to the development of so-called "variable-data printing"), was a hot item. The market for digital printing had appeared. On-demand was in-demand.[3]

The Myth of the Declining Run Length

One common myth in the industry is that, thanks to digital printing, "run lengths are declining," and if only offset presses could economically handle much shorter runs, all would be well. Yes and no.

Back in 2006, I worked on a PRIMIR study called *Current and Future Trends in Printing Processes and Run Lengths*, in which my colleagues and I looked at the changes in run lengths by printing process and by end-use application. What we concluded, in part, was that, contrary to popular belief, run lengths were not declining *per se*. Rather, the *applications* for which digital printing was well-suited were increasing, while those for which offset was well-suited were declining.[4] It's a subtle difference, but an important one. Highly targeted, customized/personalized direct mail and transactional/transpromotional (statements, invoices, financial documents, etc.) were some of the earliest digital printing applications, and on-demand books, photobooks, one-off greeting cards, and other materials have also emerged as hot product categories, all taking advantages of things that offset simply can't do, or do economically or quickly.

Identifying Top Applications

When digital printing first hit the market, it was limited in the types of applications that it could produce. On the black-and-white side, a market for short-run and on-demand books was emerging, and that market has only grown. Today, digital book printing has enabled small and self publishers to inexpensively and efficiently produce their own books, a technology about as enabling as the Internet itself.

On the color side, direct mail—especially the personalized variety—was an early application, and has also grown to be one of the top applications for digital printing. Over the years, digital has gradually subsumed a greater number of print products and applications, many of them only possible with digital printing. Photobooks emerged in the mid-2000s as a top application; customers could upload their own digital photos and sophisticated front ends could assemble them into customized photo albums and gift books to commemorate weddings, birthdays, and other special events.

As the quality of digital presses has increased, they have become capable of what we can refer to as "high-value" applications. Photobooks is one example, but any other print product that places an emphasis on photographic or other types of image quality—calendars, greeting cards, postcards, and the like—is also enabled by advances in digital press imaging.

Transactional printing had long been the purview of offset, or at the very least offset "shells" containing static information which were then re-run through a digital press and imprinted with variable information. High-speed economical digital presses—be they toner or inkjet—are taking the offset component out of the equation. Transactional printers and the related community of vendors and suppliers refers to this as WICO ("white [paper] in, color out"). Transpromotional is a related application that, at least in theory, is the addition of highly personalized and targeted advertising or promotional content included on transactional statements. Although a highly bruited application with some high-profile case studies, "transpromo" has yet to realize its full potential.

Digital printing has also made inroads in the packaging markets, where offset and flexography have been long dominant. Certain trends in consumer goods (and ergo consumer goods packaging) have helped the adoption of digital—more SKUs and thus shorter runs of individual packages—but the real action in packaging has been in prototyping and producing samples of new package designs.

[3] This is a bit beside the point, but a good thought experiment is to consider, if we could "roll back the tape," whether or not digital printing would have taken off if there had been no Internet.

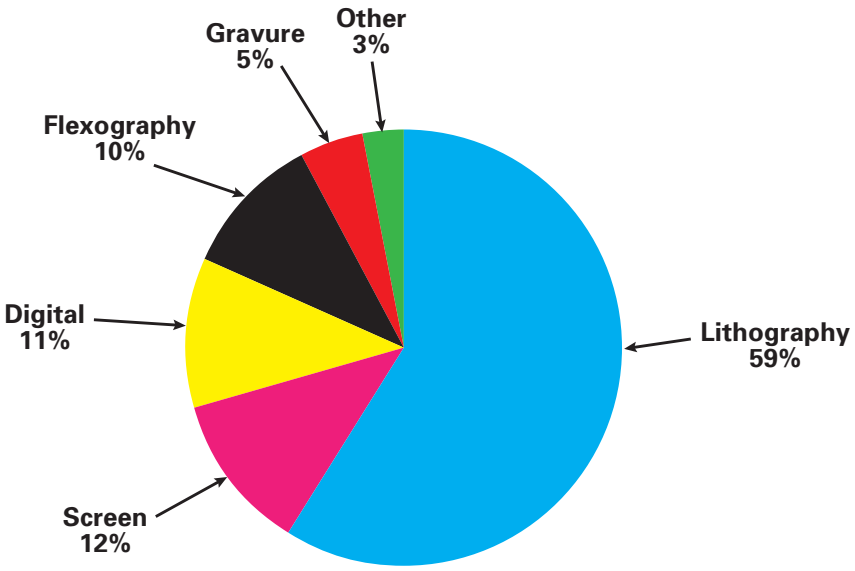
[4] An added wrinkle is, in this age of variable-data printing when literally every impression can be completely different, how do we define run length? If someone prints 5,000 impressions, each of which is different, is that one run of 5,000 impressions, or 5,000 runs of one impression? So you can see that focusing too hard on run length—as many in the industry do—can easily make one's head explode.

Identifying and Sizing the Market

If we look at the commercial printing segment alone, InfoTrends has calculated that in 2012 the total value of shipments for commercial printing was $68.4 billion. Figure 1 below shows the breakdown of the various printing technologies. Digital printing accounts for about 11% of the total value of shipments, or $7.6 billion. Table 1 shows InfoTrends' projections by technology to 2017. They expect a CAGR of +6.7% in digital printing among commercial printers over the next five years, vs. a -2.5% drop in lithographic printing. Not that lithography is going to vanish *per se*—and a bigger threat to lithographic printing applications has been, and will continue to be, the Internet and other electronic media like smartphones/tablets and apps—but as digital becomes more and more suited to those high-value applications at the expense of legacy applications, it will take a larger and larger piece of the overall commercial printing pie.

In many ways, this is an old conversation, but one that I have found still requires having.

Figure 1: % of Value of Shipments of Selected Printing Technologies



Source: InfoTrends

Table 1: Printing Technology Growth Projections, 2012–2017

	2012 Revenue	2017 Revenue	CAGR 2012-2017
Lithography	$40.3	$35.5	-2.5%
Screen	$8.1	$7.6	-1.3%
Digital	$7.6	$10.5	6.7%
Flexography	$7.1	$8.2	3.0%
Gravure	$3.4	$3.3	-0.9%
Other	$1.9	$1.7	-2.8%

Source: InfoTrends

The Challenges of Digital Printing

One of the top challenges that printers have had with digital printing has been understanding how to sell it. Digital printing requires a different sales approach than traditional offset printing and often involves dealing with different people within client companies, such as IT personnel vs. traditional print buyers. They have also been challenged by how to price it. When each job is unique in some way, it's difficult to

estimate costs and thus develop standard pricing. But perhaps the number one challenge has been to amass enough low-cost short-run jobs to compensate for what would have been a relatively lucrative long-run offset job.

This is related to the legacy vs. high-value application conversation. Printing today has become less about selling a commodity[5] and more about consultative services. We often see the term "marketing services provider" bandied about and while it's become a highly misused, abused, and misunderstood term, the fact remains that printers often have to sell the very *notion* of printing, as well as the physical printing itself. On top of that, print often has to be sold in the context of—or in conjunction with—other types of marketing materials and services, both print and non-print. Content delivered through legacy printing applications like bulk direct mail, brochures, flyers, etc., can be handled faster and less expensively using electronic media; this why your e-mail inbox overflows every morning, but your physical mailbox seldom does anymore. However, the so-called high-value applications offer benefits that can't be replicated electronically.

All Applications Great and Small

In commercial printing today, more so than at any time in the past, we speak of "applications," or the specific products that a press, and therefore a print service provider, is capable of producing. As in any industry, the products that are in demand by the market at any given time change, and for commercial printers that change happens faster than the industry has been accustomed to. One challenge that has emerged for commercial printers has been how to respond to those changes with the equipment they have. My colleague Dr. Joe Webb and I have written often about the difference between a piece of equipment's "production life" and its "marketing life." An offset press can remain in productive operation for decades, long after the market for what it produces has shifted to something else. This has been one of the chief advantages that digital printing equipment has over offset or other analog equipment: it can be easily swapped out or upgraded to offer new capabilities and thus print new kinds of products, allowing print service providers to more nimbly respond to changes in the market.

"Legacy" Applications

When we think of "legacy" applications, what comes to mind is the type of work that used to comprise printers' bread-and-butter jobs: standard four-color commercial print work. This included things like direct mail, brochures, marketing collateral materials, etc. In an industry as large and vast as commercial printing—and despite the intense shrinkage and consolidation of the past 15 years, it is still a large and vast industry—there will of course be shops that still profitably produce these legacy applications. But the real action these days is in more high-value applications.

High-Value Applications

New substrates, new inks, and new finishing processes—as well as enhancements to the front ends that coordinate all these things—have allowed digital printing systems like the NexPress to handle a growing portfolio of so-called "high-value" applications.

What do we mean by "high-value" applications? The distinction between legacy and high-value applications may seem a little nebulous[6] but essentially the latter are print products that are more creative, more specialized in terms of substrate, have higher quality, integrate some form of personalization or customization, or are something "more" than longer, mass-produced commercial print runs.

Some otheer examples of high-value aplications can include:

- brochures and booklets

[5] This is true for most shops, but some have been doing quite well simply selling commodity printing. Look at Vistaprint, for example.
[6] This is not to say that legacy applications are "low-value," which is what semantics would suggest, just that high-value applications are higher in value.

- calendars
- greeting cards
- magnets
- MICR (magnetic ink character recognition)
- photo books
- plastic ID cards
- yearbooks

And adding personalization to any or all of these items makes them even higher-value applications.

Conclusion

The value of digital printing today lies not in replicating offset work on a smaller scale or at a shorter run length. Instead, it lies in developing unique, high-value products and applications. Not just any high-value products and applications, but those that are in demand in a constantly and rapidly changing marketplace. New substrates, new inks, new finishing options, and new ways of ensuring high-quality imagery are having an impact on what is being demanded by the market. At the same, being able to profitably produce these applications is of paramount importance. The advantage to digital printing—and indeed the advantage to the NexPress—is that it gives print service providers the ability to nimbly handle new and different applications. This allows them to better respond to changes in the market, and thus better serve the needs of customers, be they past, present, or prospective.

In Part 2 of this white paper, we'll look specifically at the Kodak NexPress Platform, at its new features and functions, and how it can enable the commercial print provider to exploit these high-value print applications.

This white paper was sponsored by Kodak. For more information about Kodak's NexPress digital press solutions, please visit the Kodak NexPress site at http://graphics.kodak.com/GB/en/Product/Printers_Presses/Comm_sheet/Digital_Color/default.htm.