

The Demands of On Demand: Part One



In *Crossing the Chasm*, Geoffrey Moore described the stark difference in behavior and preferences among technology innovators and early adopters – about 16% of the population – contrasted with those of the remaining majority.* Companies that don't account for these differences often fail, even when the technology itself thrives. Novelty and scarcity appeal strongly to the 16%, but for the remaining 84% of any given market the drivers are based on social proof. Conforming to what others see as a successful path may not be sexy, but it is the way viable technology use gets past the so-called tipping point in the business world.

For the book industry, digital print has reached such a point. Non-offset print reproduction has been embraced by technologists and visionaries (the 16%) and is now being adopted by more pragmatic and even conservative decision makers. Admittedly, one form of digital – electrophotographic or EP (toner) reproduction – is further along the adoption curve than high-speed inkjet. However, as print quality and workflow efficiency improve, both EP and inkjet are becoming mainstream technologies for book publishers and their print providers.

For the majority, then, it is critically important to understand *how* to implement digital, on-demand printing – with all its disruption of adjacent cost and profit centers, like finishing, inventory management, resale channels, fulfillment, and customer relations.

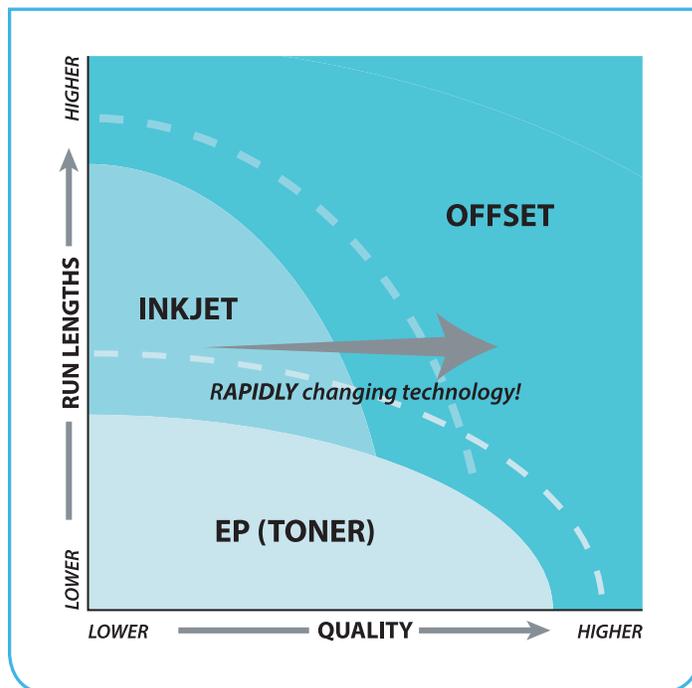
ROOT CAUSES

Digital printing itself – replacing offset inks with charged bits of toner or sprayed droplets of pigment ink – is actually a byproduct of a much larger shift in consumer behavior. The Internet-driven demand for personalized, customized content – or at least content aimed at smaller and smaller interest groups – has changed the expectations of consumers who prefer their media content in book form. “Readers want what they want, when and where and how they want it,” says John Crumbaugh, (Marketing Executive, Ink and Paper) at Canon Solutions America. “This is the beginning of a mass customization focus for publishing. Four years ago, people would have said that’s crazy, but today you can get the same book with a different cover, based on your preferences. That’s only going to increase.”

The growing demand for more narrowly-focused books has led to a quest for affordable “run of one” book printing. The economies of scale in offset production made extremely low press runs impractical – outside the realm of expensive vanity projects. Digital, on the other hand, promises little or no makeready overhead. In theory, digitally printing a book could be as easy as making a photocopy. Of course, a printer’s profitability ultimately depends on volume, so there must also be practical ways to *combine* thousands or millions of very short runs, and produce them at a sufficiently high quality to meet consumer expectations.

The expectations of e-commerce have heavily influenced this trend. Not only can books be ordered online and delivered overnight; they can also – in theory – be highly customized, thanks to innovations like variable data printing (VDP) and custom content aggregation. In higher education, for example, professors may specify custom, bound coursepacks – creating a unique textbook for a class of 20 or 30 students. On the consumer level, photobooks and other highly personalized books are becoming commonplace. While mass customization is still far from universal, at least for now, the expectations of book e-commerce (“I want *my* book, and I want it *now*”) are playing havoc with traditional sales channels.

High-speed inkjet in particular is shaping up to be an even greater disruption than EP, as the optical density and quality of inks – and the number of available substrates – increases dramatically. “With



the quality improvements in inkjet technology, inks, and papers, there are more and more books of the ‘coffee table’ variety that look just as good to consumers when done with inkjet as they did with offset,” says Crumbaugh. “It’s just a different way of doing the same thing. ‘Overcome’ is the wrong word for dealing with this kind of disruptive technology. I think it’s more accurate to say it needs to be *embraced*.”

DIFFERENT THRESHOLDS

Not every book publishing market has reached the digital print tipping point, nor is the switch from offset to digital universal under all conditions. In the trade market, both EP and inkjet have achieved widespread acceptance, but only for certain quantities and total run lengths. “From a financial perspective, printing a large number of trade books is still more cost-effective on offset than it is on inkjet,” says Canon Solutions America’s Marketing Director Kris Albee. “There’s a break-even point; today it’s around 5,000 copies. Above that, offset is still the better choice. For a book you expect will sell well, the tried-and-true offset approach is still best. So, for the first run of, let’s say, 100,000 copies, and probably the second run, you’re better off using offset. However, for the shorter third or fourth runs, inkjet is more cost effective.”

Digital print also mitigates inventory costs and the risk of book returns. “We have a customer who publishes romance novels,” Albee notes. “They used to print around 50,000 books a month on offset,



but they were throwing away between 8,000 and 15,000 books every month. Now, they print 35,000 a month on offset, and as each book starts to sell, they print another 1,000 to 3,000 or more digitally, to meet the fluctuating demand. It's a complementary manufacturing strategy that reduces overall costs."

Other types of book publishing have different thresholds for widespread adoption of digital print. The educational market – both K-12 and Higher Education – has been increasingly using EP for its specialized, shorter-run titles, particularly where the content includes a high percentage of color. With the rapid rate of improvement for both EP and inkjet substrates, inks, and color management tools, education and other nonfiction publishers – with typically shorter runs and high quality expectations – are expected to migrate towards digital.

The rise of ebooks in the trade segment (and of integrated learning systems in the education segment) has also impacted the migration from offset to digital. Wherever ebooks and print have *combined* in some way – as opposed to one replacing the other – the ability to digitally manufacture the printed components has become paramount. Keep in mind that, since the advent of desktop publishing in the 1980s, almost all books are “born digital.” Printing is simply one of several output options.

EFFECTS FOR SMALL PUBLISHERS AND PRINTERS

In Part Two of this series, we will look at the impact of digital print on large publishers and their printing and distribution partners. However, the effects on smaller businesses are remarkable. In some cases, digital print is the primary reason for a company's existence – or at least a major contributing factor in its economic survival.

Academic and nonfiction book publisher Gorgias Press (www.gorgiaspress.com) in Piscataway, New Jersey, would not even exist were it not for digital printing, according to President, Editor-in-Chief (and Rutgers lecturer in Syriac) George Kiraz. The publisher produces about 50 titles per year, including highly specialized academic works as well as rare, out-of-print titles in the public domain. Press runs are typically around 100 copies, occasionally as high as 1,000, and sometimes as low as one. The great majority of the content is black and white, with less than 10% color – mainly in the form of inserts. Books are currently printed on an EP press, although Kiraz is considering moving to inkjet if the quality continues to improve – and the costs continue to decline.

“On demand technology made it possible for us to start this company,” says Kiraz. “Without it, there wouldn't be a Gorgias Press. We would not even have started.” Kiraz, a former technology company executive, founded Gorgias Press in 2001, after the dot-com crash, with an investment of only \$20,000. The for-profit operation has always had to keep costs strictly under control. While each title can sell for as much as \$150, margins are still low. According to Kiraz, the automation made possible by digital print allows the company to have only a five-person staff.

Books On Demand

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Digital has also had a large impact for Gorgias Press' printer, Bridgeport National Bindery (BNB, www.bnbindery.com) in Agawam, MA. The company began as two separate binding companies founded in the late 1800s, and was solely focused on bindery work until 1991, when it acquired its first DocuTech, and 2003, when it acquired a full digital press. Since then, the company's print-on-demand services – primarily sheetfed EP devices – have become a significant part of the company portfolio of services for publishers.

Kent Larson, BNB's Vice President of Print On Demand, described the company's odyssey into digital print – made problematic by its relationship to other printing companies. "Early on, we realized that the traditional print model was in decline," he said. "We knew that press runs were getting much smaller – going as low as a single copy. Digital print was clearly the way to go, but our IT infrastructure had to be prepared for a new way of processing orders." The company had already implemented electronic data interchange (EDI) techniques in its ordering system, and developed its own process for bridging electronic content creation and ultimate physical production. (At the same time, BNB continued to offer its custom binding services for libraries and publishers.)

Larson described the company's on-demand efforts, which include a wide array of customized, case-bound books for special occasions, as well as a growing volume of non-trade books for publishers like Gorgias. Currently, BNB's print operation uses EP devices, although Larson is actively exploring the price and quality issues of inkjet. The production workflow is controlled by in-house-developed systems, supplemented by print production and tracking software. Finishing – which is BNB's specialty – is all near-line.

The value of on-demand digital print to book publishers is clear, Larson maintains. The reduction in warehousing costs, coupled with an efficient IT process for managing production and distribution, are substantial cost center benefits for publishers – particularly as press runs continue to fall.

"Printed books will always have a major role to play," Larson says. "Digital print, and all the systems needed to control their price and quality, and insure an ever-increasing variety, will help keep the medium alive, and bring more people into the book experience."

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