

# **How Digital Hardcover Bookbinding Can Lead to New Business**



**D**igital printing has come a long way. Though early applications were often crude and expertise sometimes lacking, digital printing took off in some niches where the technology and the market demands aligned, such as in photobooks and on-demand self-publishing. Today, a technology that initially gained a lot of traction among those outside the traditional printing industry has evolved to become another weapon in the commercial printing arsenal. As quality has improved and costs have decreased, digital printing is now finding wider applications, especially in the book-manufacturing sector.

Consulting firm IT Strategies estimates that 5% of all book pages printed in 2014 were digitally printed and that by 2018 that number will double. Meanwhile, the compound annual growth rate (CAGR) for offset market is expected to decrease by 2% over that same period. Offset printing isn't going anywhere soon, but digital printing in the book sector is certainly poised for a growth period.

Driving the growth of digital printing, in part, has been the improvements in quality. Digital printing has evolved to the extent that it is beginning to rival offset applications. Improvement in liquid toner technology has played a big part in this evolution, says John Jacobson, President of On Demand Machinery (ODM). "A traditional printer that has been in the business for 30-40 years says his clients can't tell the difference."

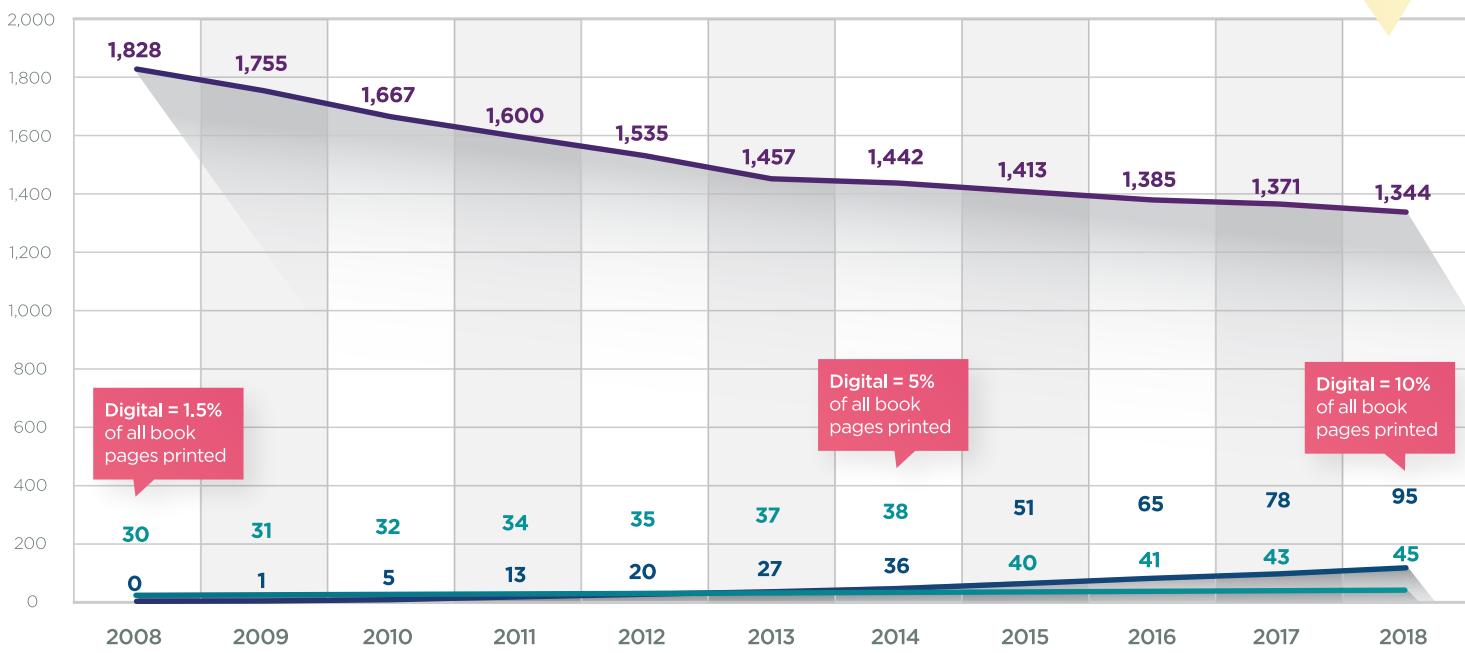
Great strides have also been made in the viability of in-house digital hardcover bookbinding, presenting a new and growing opportunity for digital and offset printers. More efficient equipment and greater automation in production is enabling printers to produce hardcover books more cost effectively and with increasing quality. For example, equipment that removes the human element means that the operator no longer dictates the quality of a run, leading to more efficient workflows and higher yields.

"The quality of digital hardcover binding has experienced tremendous improvement over the past five years and that has helped us at Ingram Lightning Source remain consistent to our standard of excellence," says Terry Safer, Director of Operations at Lightning Source, part of the Ingram Content Group. "The speed of digital hardcover binding also has improved, helping us reduce the time between when an order is placed and when the order is delivered to a customer."

## BOOK PAGES PRINTED

Billions of Equivalent 8.5"x11" pages, worldwide

**OFFSET -2%**  
CAGR '14-'18  
**INK JET - 27%**  
CAGR '14-'18  
**TONER 4%**  
CAGR '14-'18

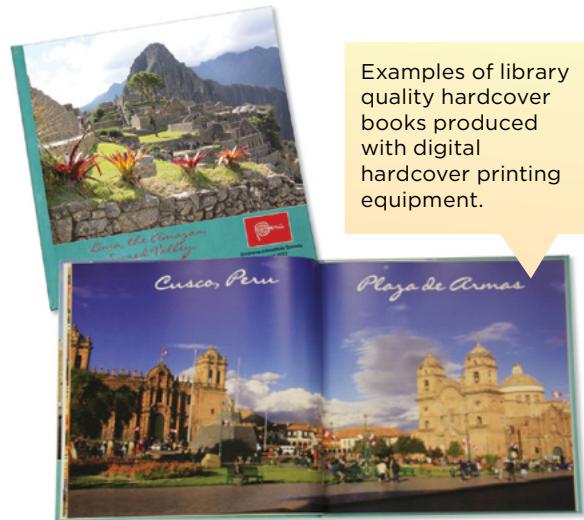


Source: IT Strategies, Inc.

Printers are starting to recognize the value they can offer their book publishing clients by offering digital hardcover bookbinding, and in turn, increase revenue. No longer just an overhead or expense, digital hardcover binding presents an opportunity for printers to win new business by helping their clients to cut costs, go to market quicker, respond to consumer demand, and charge more for their goods.

Improvements in digital hardcover binding equipment has enabled Pennsylvania-based Maple Press to expand its business, says Bill Long, Vice President of Sales and Marketing at Maple Press/Maple Logistics Solutions. "These improvements have enabled Maple to produce high quality books at a reasonable cost for our customers," says Long. "We have also been able to manufacture books with multiple design styles at quality levels that meet or exceed the expectations of our customers and their clients."

Safer says Lightning Source has also been able to find new business in new markets by way of superior digital hardcover binding. "Take the education platform for instance. In the education market digital hardcover binding is growing on all levels, including everything from textbooks to medical journals. The benefits to customers include a more durable product."



## HOW DIGITAL HARDCOVER BOOKBINDING ADDS VALUE

It may require a bit of a mind-shift, given that bindery departments have typically been looked upon as cost centers, but digital hardcover binding can in fact become a potential profit center for commercial printers. An in-house digital hardcover bindery is an opportunity for printers to create value for their clients by helping them cut costs, meet consumer demands quicker, and produce higher-profit products, all of which can lead to new clients and more business with existing customers.

### SAVE CLIENTS TIME & COSTS

There are a number of ways that digital hardcover bookbinding can add value to a printer's business, but perhaps the most important are the time and cost considerations. "Shipping printed stock around gets to be cost prohibitive at times," says Jacobson. "And there's not a lot of trade binderies around, so that distance between printer and trade binder has grown in many cases."

Handling digital hardcover binding internally can save the time burned by moving around materials and shipping printed stock to a bindery. Obviously, publishers are eager to have the turnaround time for their orders be shortened, says Jacobson, especially in an increasingly on-demand economy. "I find a lot of printers say, 'I'm outsourcing to this binder, he's doing a great job, the price is not bad, but I have to wait forever.' That's probably the biggest complaint and one of the biggest tipping points where someone would buy our machines."

Lightning Source's Safer echoes the importance of efficient turnaround: "The biggest benefit is getting a product to market faster. This ultimately satisfies customers, which means more orders and more business."

Printers can also avoid outsourcing markups and entice new customers with lower price points by handling digital hardcover binding in-house. Especially in the emerging digital printing market, this can be a good way to make inroads with new clients or into new market segments.

Combining digital manufacturing capability with offset creates a full-service offering to clients looking to manage supply through a single provider, says Long.

"Our ability to move books between our offset and digital platforms allows our customers to use a single source to provide book manufacturing services over the life cycle of a title. This simplifies the process for our customers and makes us a more valued business partner. Our customers have been especially pleased with the consistency of quality we provide from our digital manufacturing platform."

### ON DEMAND ECONOMY

Certainly organizations such as Lightning Source, who are often printing, binding, and shipping the same day, require in-house hardcover digital binding to keep their faced-paced model moving. For better or worse, that quick turn-around model is the direction consumer demand is headed, says Jacobson. "The internet has brought us into this on-demand, instant gratification society, and these fast turn times have unfortunately become the norm. On the other hand, if you can turn the product faster, you can charge a premium."

The ability to provide POD services and rapidly deliver books has opened up new profit opportunities for Maple Press. In particular, it has buoyed the company's storage and distribution operations by its Maple Logistics Solutions division, says Long. "This has created a significant number of new business opportunities for us. Our digital hardcover offering gives our distribution customers the opportunity to combine POD orders with shipments of books in inventory going to the same location. Our customers can also establish automatic reorder points and quantities that allow for small replenishments of books as needed to meet ongoing demand. This reduces the hands-on inventory approach and allows our customers to focus their time in other areas while also lowering the risk of inventory obsolescence. Books can be manufactured and shipped directly to customers or major distributors as needed."

The Super Sticker and Super Smasher by On Demand Machinery represent two of the technology advancements in equipment enabling greater automation in digital hardcover bookbinding. Photo taken on location at Morris Publishing.



## INVENTORY CONTROL

Digital printing and binding also enables printers to serve a publishing industry increasingly concerned with inventory control. Publishers are looking to minimize unused print stock, which is often achieved through a mix of offset and digital services applied throughout the varying demand levels of a book from its release to the backlist. "We have been able to turn to the marketplace and offer hardcover capabilities that cover the life cycle of titles from offset quantities to ultra-short run to POD. Digital hardcover capabilities have allowed us to work with publishers printing very small runs and in some cases it allows us to get our foot in the door with publishers that we had not worked with previously." For example, if a publisher has its offset business tied up with another supplier, digital capabilities sometimes offer the opportunity to build foster new relationships.

As publishers' print revenues continue to contract, they will continue to seek ways to cut costs and free up capital tied up in inventory. The ability to print to demand is a valuable proposition for publishers, says Long. "This is a big benefit in a time where demand levels are so difficult to predict. Smaller quantities also help to cut cycle time allowing publishers to respond to unexpected demand very quickly."

## PACKAGING SELLS

Sometimes the old adage that you can't judge a book by its cover doesn't hold up. As in other consumer markets where the packaging affects the perceived value of a product, book publishers can charge more for better packaging. By enabling publishers to put a hard cover on a digitally printed book, printers can help their customers boost revenue, says Jacobson. "How a product is packaged is sometimes more important than the package itself. In the cosmetic industry or the beverage industry, that's what sells. In books, it's kind of the same way. The book is the ultimate packaging to loose printed sheets."

Advancements in binding equipment means printer can now produce case bound "library-quality" hard cover books that will last for generations, says Jacobson.

## FINDING THE RIGHT BINDING EQUIPMENT FIT

Of course printers needs to consider the right equipment for their production requirements and the ROI on any equipment investment. In the case of hardcover digital binding, both considerations will depend on the particular market a printer serves and volume. For example, a printer producing high-end photography books will have a different break-even point on an investment than a high-volume, on-demand printer. That said, a safe estimate is that a printer that is outsourcing 750-1000 books a month, could bring binding in house and do it more cost effectively.

Providers should consider not only current volume levels, but also what volume they project. Are they trying to enter a new market or working on pitching a client that will increase their book business?

Further considerations should be made regarding the run-lengths a printer will be handling with digital hardcover bookbinding, as well and make ready times.

On Demand Machinery's Sticker casing-in machine in the bindery department at Maple Press production facility in York, Pennsylvania.



Different binding equipment is better suited to different output levels. ODM's digital hardcover binding equipment shines in the short (1-750) run and has low make-ready time. Especially when handling short and ultra short runs, make-ready time can be the difference between a cost effective solution and a cost prohibitive one, says Jacobson. "If you have to do make ready for two or three sheets, you have that whole cost allocated over a small number of units, your price obviously balloons."

## POTENTIAL CHALLENGES

### MATERIAL PREPARATION

Proper material preparation is an important component of an effective bindery operation. Printers will need to understand grain directions for cover materials, proper reinforcement to the books, proper trimming, and the right substrates and glue to use. Those not familiar with these procedures and practices should consider seeking consultation to get it right. "Without guidance it'll take months and months to figure out," says Jacobson. "That's something we've offered to clients by taking more of a consultative role. If we just drop equipment on the floor and offer no training and support, it'll take months and months to figure it out and a lot of frustration. So what we can do is come in and really eliminate a lot of headaches."

### WORKFLOW EFFICIENCY

Workflow is also an important component of an efficient bindery operation. Handling materials too many times can lead to profit drainage. When dealing with short runs (5 to 10 or 20) everything has to be just right, says Jacobson. "If you're running around chasing product, getting cover materials, if there's not an orderly flow throughout the factory, it doesn't run smoothly."

The major challenges to an effective digital printing operation is streamlining workflow and limiting the overhead of processing much smaller orders, says Maple Press' Bill Long. "Maple has invested in systems to automate and simplify the entire process from order entry through invoicing through an interactive web interface. There are also some challenges around material selections that must be made by our customers when transitioning titles from an offset to a digital platform. This seems to be less of an issue as publishers become more familiar with digital book manufacturing."

### EDUCATING PUBLISHERS ON THE NEW CAPABILITIES OF DIGITAL

Printers still need to educate publishers on the advancements in digital printing quality, as some may have mixed feelings about its capabilities based on earlier iterations of the technology. Additionally, explaining the solutions for and benefits of inventory control for publishers will also be an important education point.

"Printers should be focused on defining their digital hardcover capabilities and pricing and showing how the increased unit cost of smaller digital runs is a worthwhile tradeoff versus the risk and capital requirements associated with excess, slow moving inventory," says Bill Long of Maple Press.

## ODM PRODUCT HIGHLIGHTS

On Demand Machinery's XXL Series & Super Line enable quick production of "library-quality" digitally printed hardcover books. The Super Line is a very unique casing-in/building-in machines that not only offers operation simplicity, but a fairly low capital investment, mid range production numbers, and extremely accurate output. The difference between the XXL Series and the Super Sticker/Super Smasher Series is in the size of the case bound book, the quantity to be produced and the speed (number of books per hour).

The Casemaking XXL System will enable printers to produce wallet size (4"×4")



up to oversize tabloid (22.75"×46.75") hard book covers using the four-process Casemaking System: the Spreader, Slider, Stomper and Squeezer. Built in the USA, ODM machines work seamlessly with the Sticker and Smasher XXL Series.

The ODM Super Sewer XXL is ideal for sewing books from wallet (4"×4") to tabloid (18"×18") size, up to 1" thick. Super Sewer XXL is an automatic in-line sewing machine designed for on-demand photo books, yearbooks, journals, children's and textbooks (up to 1" thick). Easy-to-operate with a touch screen control panel. Super Sewer XXL features Back Tack Technology and simply put, the sewing machine does a reverse backstitch on the head and foot of the book block. This ensures a very strong side sew that will not come apart at the head and foot like standard side sewn books. Super Sewer XXL pre-drills holes prior to thread stitching enabling the book block up to 1" thick. Super Sewer XXL can stitch up to 10 books per minute; that's 600 books per hour.



#### **ODM SUPER LINE: SUPER STICKER & SUPER SMASHER**

The ODM Super Line represents our mid range production machines that allow mid range customers to increase production capabilities over our entry level products, an alternative to million dollar book lines and automated solution to become less operator dependent. The XXL line is as it sounds, machinery for making large books (18"×18") for the art and photo book markets. The XXL line permits the production of large books, which is not possible on the million dollar book lines and our competitors' offerings.

For producing higher volume hardcover books, commercial printers will consider ODM's automated machines: the Super Sticker and Super Smasher with an optional transfer station and Book-Trac's barcode technology. These ODM machines are ideal for producing higher volume, one-of-a-kind photo books and larger-print-run yearbooks and children's books (400 to 600 books per hour).

The Super Sticker is an automated casing-in machine is designed for high volume, on demand binding operations. No special skills are required to operate this self-adjusting machine. Easy-to-use control panel allows the operator to format book size.

The Super Smasher is an automated, building-in machine. After the cased-in hard cover book enters the transfer station, it's automatically gripped, lifted and fed into the Super Smasher for the building-in process. The Super Smasher is a self-adjusting, hydraulic building-in machine. It's easy to operate with a touch screen, LCD control panel that allows the operator to easily access machine features such as dwell time, servo homing, manually indexing, or troubleshooting a machine fault. The control panel includes a counter as well.

Cased-in books are automatically fed into one smashing station that houses three nipping stations where 1500 pounds of hydraulic pressure are applied to the joint area of each book, thus producing 'library-quality' hard cover books. The three nippers provide dwell time in the joint area enabling the machine to run at speeds up to 18 books per minute (1080 books per hour). The rear in-line chute delivery can conveniently tie into most conveyors for increased workflow.



Super Sewer XXL and close up view of a one-inch thick backstitch (Back Tack Technology) signature.

