



# Converters Finesse the Finish with the Best Solutions for Digital Packaging

Package printers embrace the latest finishing solutions that complement the efficiency of digital presses.



By Patrick Henry,  
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Digital packaging is looking better all the time as a revenue opportunity — and not just for companies that specialize in packaging. When NAPCO Research recently put the question to a group of about 300 printing businesses, most of which are not packaging printers or converters, 83% of respondents said they were producing tags, labels, and various types of packaging on digital printing equipment.

With the exception of labels, which printers found they could readily shift to narrow-web digital presses, digital printing was slow to take off in the packaging space. Today, the industry's faith in digital technology for package printing is solidly grounded. Printers are also learning how to deliver the final finished product with the same kind of confidence, using systems that

mirror the high efficiency of their digital presses.

This is what Dan Niblo and Jeff Searson had in mind when they launched The Packaging Lab as a source of short-run, quick-turnaround flexible packaging in Brooklyn Park, Minn., in 2019. As packaging distributors, they had grown frustrated with the high minimum order requirements, and the eight-to-12-week turnarounds typical of conventional pouch production.

### 'Let's See if We Can Fix It'

They believed they could do better. Niblo, the company's CEO, says new patterns of demand were starting to emerge, with customers "begging" their suppliers for small quantities of pouches they could get right away. "But, nothing was changing on the flexible

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converters are rewriting the norms and the rules of packaging.

pouch designs for a total of 65,000 units in a single shift. The company operates a pair of the devices, one for gloss films, and one for matte. “The only easier machine in our plant to run is a tape dispenser,” Niblo says.

### Nearing 50 Million Pouches per Year

At Rootree in Burlington, Ontario, the pairing of machinery is reversed. There, one Pack Ready Lamination system — the first to be installed in North America — supports two HP Indigo 20000 presses (a platform the company was also the first in Canada to adopt). With this setup, Rootree has the capacity to produce nearly 50 million preformed pouches per year, according to Philippe St-Cyr, president and CEO.

He says that the things Rootree wanted in a lamination system, and got with the kind of thermal lamination that Pack Ready and other processes provide, were a unified print-and-finish workflow; “fast, repeatable quality, without a lot of waste”; the ability to handle a variety of flexible substrates and finishes; and “zero cure time” that would make it possible, in theory, to deliver finished product by the end of the day.

The idea is to assure “the

immediate availability of pouches” with quality that meets customers’ expectations and delivery that is consistent with their speed-to-market objectives. St-Cyr adds that low-waste, solvent-free thermal lamination is in line with the company’s plan to make 90% of its products sustainable, recyclable, and compostable — a goal Rootree also works toward by developing and manufacturing its own lines of compostable film.

Also relying on an HP Indigo 20000 flexible packaging press — and owning the first certified for special effects using the Color-Logic metallic color system — is AccuFlex Packaging in Greenville, N.C. Tom O’Brien started the company last year after a long career as a copy-shop operator and a trade printer.

“After you print, you’ve got to protect the ink,” he says, noting that in conventional flexography, the usual way to do this is to reverse-print the film and laminate it. AccuFlex uses an alternative technology that not only shields the printing but simplifies the packaging structure — with important advantages for sustainability.

### A Beam of Electrons

AccuFlex is one of only a small

packaging side. We said, ‘Let’s see if we can fix it.’ What if we could do this in 24 hours? What if we could change the entire dynamic to a 24-hour lead time?”

They claim to have done it at The Packaging Lab with the help of an HP Indigo 20000, a 30” digital web press designed specifically for flexible packaging materials. The next step — thermally laminating the printed film; heat-sealing and slitting it; and forming it into adhesive-free, recyclable pouches in one continuous process — takes place on the Karlville Pack Ready Lamination system, a solution that gives Niblo and Searson the nimbleness and speed they insist on for finishing digital packaging.

The Karlville system, co-developed with HP for the HP Indigo 20000, changes over from job to job so rapidly that once, according to Niblo, The Packaging Lab was able to turn out 28 orders with 42 unique



At Rootree in Burlington, Ontario, a Pack Ready Lamination system — the first installed in North America — supports two HP Indigo 20000 presses (a platform Rootree was the first in Canada to adopt). From left, Soek Awalia, VP of packaging operations; Pia Simran, VP of sales and business development; and Philippe St-Cyr, president & CEO. Courtesy of Rootree.

# FEATURE

handful of sites to support an HP Indigo 20000 with a CatPak eBeam Finishing System, a curing line that prepares film for converting on separate slitting and pouching equipment. The process, O'Brien explains, permits printing on the surface of the substrate and, in lieu of laminating, laying down an e-beam-curable coating that does what the lamination does without the need for an additional overlay of film.

Instant curing with beams of accelerated electrons resembles UV curing in that it works by rearranging chains of polymers in the material being exposed. One advantage for e-beam-curable inks and coatings is that unlike UV fluids, they don't contain photoinitiators: compounds that could migrate undesirably out of UV-printed packaging substrates, raising concern in pharmaceutical and food packaging applications.

AccuFlex's CatPak system was developed in a partnership among S-One Labels & Packaging, a graphic

systems integrator; Custom Design Applications, a flexo engineering company that supplied the device's frame, web guides, and unwind/rewind sections; and PCT Ebeam and Integration, which provided the e-beam exposure unit, power supply, and operator stations.

O'Brien says film cured on CatPak yields "a less dense, down-gauged package" consisting of fewer layers than conventionally finished flexible packaging. If compostable film is being used, the process adds nothing that might interfere with its ability to break down at the end-of-life stage.

The result is the kind of sustainable packaging that O'Brien wants AccuFlex to become known for. "Our finishing equipment is geared around that," he says.

## Digital for Corrugated

Digital printing came to corrugated packaging with the advent of high-speed, large-format inkjet presses

capable of handling heavy fluted grades. In Kent, Wash., The BoxMaker has added digital to its corrugated services by installing an HP PageWide C500 Press, a direct-to-board platform built to print in the high volumes that the corrugated market requires.

Supplementing the PageWide C500 for smaller runs are a pair of flatbed presses for corrugated board: an HP Scitex 15500 and an HP Scitex 17000. A fleet of automated CAD tables cuts and finishes the printed board without the expense of conventional diemaking.

Justin Stacey, VP of e-commerce solutions at The BoxMaker and Fantastapack.com, its Web-to-pack portal for custom short runs, notes that all it may take to get these computerized finishing systems into production is to "scan a QR code on an order ticket."

This can turn hours of conventional setup into seconds when the finishing workflow, like the printing,

**In Greenville, N.C., AccuFlex uses digital printing and finishing systems to produce short-run, sustainable flexible packaging. From left, Lee Duncan, Toreze Jones, Tim Mages, and Katherine O'Brien.**

Courtesy of AccuFlex.



is digital. Another plus, says Stacey, is the fact that CAD tables don't lose precision registration the way conventional finishing equipment sometimes does in extended production.

The BoxMaker will go to the next level of sophistication in finishing when it completes installation of a Highcon Euclid 5C digital creasing and cutting machine, designed for B1- and B2-format corrugated applications. This device, says Stacey, matches the output of several CAD tables combined, and will be used in tandem with them.

Another Highcon Euclid 5C, along with a second PageWide C500 press, are to be installed at Tango Press in Springdale, Ark., an all-digital corrugated producer The BoxMaker acquired last year.

### Conceptual Wiggle Room

It's clear that finishing systems for packaging have evolved in capability

**With the exception of labels, which printers found they could readily shift to narrow-web digital presses, digital printing was slow to take off in the packaging space.**

along with the digital presses they support. But calling the finishing "digital" just because the printing was done that way can sometimes be a bit ambiguous.

As Stacey points out, it's perfectly acceptable to use conventional finishing equipment in digital applications as long as the volumes are sufficient to cover setup charges. O'Brien similarly notes that the pouching machinery he uses for digitally printed, e-beam-cured film would work equally well with film printed on a flexo press.

In fact, he sees true digital finishing for flexible packaging as

a "holy grail" the industry is still searching for. "We struggle with pouching now," he admits, citing the difficulty of finding trained operators as one of the main reasons. He says his wish list for a pouching machine includes automatic self-adjustment to web widths and product dimensions, eliminating mistakes that can lead to setup waste in short runs.

O'Brien's advice to printers thinking of venturing into digitally printed flexible packaging is to consider partnering with a trade shop for the finishing. Stacey reminds those planning to bring the ▶

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AccuFlex supports an HP Indigo 20000 digital packaging press with a CatPak eBeam Finishing System, a curing line that makes it possible to form pouches with fewer layers than conventionally finished flexible packaging.

Courtesy of AccuFlex.



process in-house that the useful life of the investment will be different from what they are used to in conventional production. Because of the pace of innovation, he says, “your time horizon needs to be smaller on digital finishing equipment.”

By aligning digital printing with the finishing solutions best suited to it, converters are rewriting the norms and the rules of packaging. Niblo recalls being warned that short-run flexible packaging was “an awful segment of the market” to be in because

its small quantities didn’t conform to the economics of mass production. But he and Searson, having no prior direct experience as printers, were undaunted.

“We had no idea of what we couldn’t do,” Niblo says. “All we knew was what customers were asking for.” He believes that The Packaging Lab has succeeded in changing the model from minimum orders customers can’t afford to “one pouch, one impression, not 5,000 copies and a bunch of tooling costs.”

## Only What Clients Want

At Rootree, short-run digital production underpins the strategy for promoting sustainable flexible packaging.

“The shift to sustainability is really driven by the small-to-medium companies, especially in the health and food sectors,” St-Cyr observes. “Making our sustainable offering available to them enables us to give them an incredible number of jobs using material selections that they want, without having to commit to massive quantities of orders.

“We did not want technology to interfere with our ability to create on demand,” he says, adding that as a result of having chosen the right combination of digital printing and finishing solutions, “we don’t have to deter clients away from what they currently want, which is high-quality, sustainable products that can be offered in the immediate sense.” ■

*Patrick Henry is a senior editor for NAPCO Media’s Printing & Packaging Group. He has covered the graphic communications industry since 1984 and is the recipient of multiple awards for industry education and service.*

Justin Stacey, VP of e-commerce solutions at The BoxMaker, monitors corrugated packaging forms being printed by the company’s HP PageWide C500 press. The automated CAD tables that do the finishing are soon to be supplemented by a Highcon Euclid 5C digital creasing and cutting machine.

Courtesy of The BoxMaker.

