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BY JEAN-MARIE HERSHEY

Right Recipe

State-of-the-art in digital flexo platemaking:
This is how technology evolves

In the not-so-distant past, flexographic package printing took a back seat to the high-quality, high-volume capabilities of gravure and offset. That was then. Over the years, as volumes shrank and marketing strategies began to embrace smaller, regional promotions, flexo—with its quicker set-up times and ability to handle limited run lengths economically on a generous variety of substrates—began to be viewed as a viable alternative to both gravure and offset. While these print technologies afforded a high degree of control over color, image, and ink transfer over the long run, flexo struggled with issues related to dot gain, color consistency, registration, resolution, and contrast, among others.

The subsequent introduction of hybrid screening, photopolymer plates, direct-to-plate technology, and sleeve-based, servo-driven presses went a long way toward ameliorating many of these problems and moving flexo closer to the benchmarks previously set by gravure and offset. Most recently, so-called high-definition solutions such as Kodak's Flexcel NX System for digital platemaking, EskoArtwork's

new HD Flexo system, and MacDermid's LUX™ plate processing technology have extended the opportunity for flexographic printers and their prepress service providers to become even more efficient, as well as to improve quality and reduce costs.

Taking it to the pressroom

One such service provider is Autumn Graphics in London, Ontario, Canada, an independent, privately owned company employing a staff of 38 and providing premedia production and graphics management services.

"We've been focused on packaging since day one, and have experienced steady growth over the years," says company President Ben Abray. "We have consumer product, and packaging converter and printer customers, and we have some relationships where we repre-

Using the Kodak Flexcel NX System has allowed Autumn Graphics' customers to run higher ink densities, achieve a larger color gamut, and run lower-volume anilox rolls.

sent both.” In addition to premedia production, “We get involved in press profiling and supplier qualification on behalf of our consumer product customers.”

On the converter side, he adds, “We take it much further, getting into the pressroom with process optimization, helping them take time and material out of their existing workflows. We work hard to push their quality to the highest possible level with the tools they have.”

According to Abray, what distinguishes Autumn Graphics from its competitors is its ability to respond quickly when customers call. “We don’t have a lot of layers in the organization,” he said. “Customers are speaking directly to the people who are getting the work done. We’re the right size. We have all the tools our larger competitors have and more, yet it’s easier for us to be responsive and change direction quickly, if need be. It’s easier to hear what customers are saying when you don’t have so many levels of communication to work through.”

While Autumn does some litho work on the consumer product company (CPC) side and performs some file assembly for gravure, on the flexo side it provides every segment of the industry from narrow-web label and folding cartons, to wide-web flexo.

Finding the right recipe

The company has been a user of the Kodak Flexcel NX System for platemaking since May of 2008, as well as becoming a recent beta user of Kodak’s new Flexcel NX Wide System for larger formats. (The new system reportedly will become commercially available in the U.S. by the end of June.) The Kodak system consists of a specially formulated Kodak Flexcel NX Thermal Imaging Layer exposed on a Kodak Flexcel NX imager using Kodak SQUAREspot imaging. After imaging, the thermal layer is laminated to the Kodak Flexcel NX Digital Flexographic Plate using the Kodak Flexcel NX Laminator, a process that removes the oxygen from between the layer and the plate, resulting in the creation of high-quality, flat-top dots. Autumn Graphics has also been using Kodak Digicap NX Screening technology since it became available, based on its ability to improve ink transfer and color gamut, especially on very smooth substrates.

“We have customers looking for anything we can bring them that is going to yield improvements in productivity, quality, or both. We manufacture all different types of plate materials, but currently 85 percent of the polymer we use is Kodak Flexcel NX. Even customers that are running pretty simple work can derive some advantages from this technology.”

Flexcel NX Plates are said to offer a wider tonal range than their conventional digital counterparts, as well as brighter highlights with less of the ‘flexo break’ effect. They reportedly also can be used to print higher densities with finer and more stable gradients. Kodak reports that folding carton printers using Flexcel NX Plates in daily production can print 20 micron stochastic and higher conventional linescreens. They also report a 20 percent reduction in set-up time and substrate waste compared with previous digital flexo plates.

To make the fullest use of the Kodak Flexcel NX System—to find “the right recipe,” says Abray—customers must commit to a process of pressroom optimization with respect to screening choices, anilox selection, backing tapes, inks, drying rates, and press speed.

“Every time you change something in the flexo process there are other things that have to be optimized to go along with it, and that’s where you have to make sure you do all of your due diligence and make sure everything is going to work along with the plate technology to make sure you get the most out of it.”

Once optimization is accomplished, however, implementation of the Flexcel NX solution “enables our customers to run much higher ink densities, achieve a larger color gamut, and run lower-volume anilox rolls, resulting in higher linescreens and finer highlights,” states Abray. Not only are the tonal range and color gamut being expanded, “but from a manufacturing point of view, we’re seeing two to three times longer plate life, and faster press speeds with less sensitivity to impression. We’re also seeing quicker makereadies, which really cut down on pressroom waste.”

Expanded market for flexo

For Abray, what’s significant about these improvements is the amount and type of work—primarily folding carton and flexible packaging—that has been pulled into the flexo world that wasn’t there before, broadening its applicable market.

“The flexo guys are no longer out there competing with one another for the same pool of business. When label and folding carton printers are able to run the same linescreens and the same densities the litho guys are running, they can actually go out and pursue business that traditionally has been the province of other processes.”

Not surprisingly, Abray also sees jobs migrating from gravure and offset to flexo, noting that Autumn has “a couple of folding carton customers who are running the same jobs in both litho and flexo.” In addition, all of the company’s flexible packaging customers are now actively selling into the gravure marketplace.

“There’s no longer the perception that we can’t hit the densities or get saturation and clean highlights,” Abray says. “And because we now can reproduce a larger color gamut, we’re often able to take one or two PMS colors on a job and build them out of process. If we’re saving one, two, or three plates on a job, we’re saving money up front, as well as on makeready and plate mounting time in the pressroom, and avoiding registration issues because we’re dealing with fewer colors.” Lower costs also result when customers must reorder plates since fewer are being used on the job.

The impact of increased plate life on sustainability can be huge, Abray says, especially when the customer is running, say, an SKU of five million pieces each month. Further upstream, “they’re able to run their press faster and get up to speed quicker without having to mount as many plates or use as much backing tape.” It stands to reason, therefore, “If their latitude for impression variation in the pressroom is larger, they aren’t creating as much waste from roll to roll or shift to shift.”

Work smarter, not harder

Autumn Graphics’ implementation of the Kodak Flexcel NX System has made the company’s job easier by eliminating many of the steps it had to perform in the past to make a job successful. For example, Abray says, “We can give the designer more freedom to work with vignettes, highlight fades, and multiple color mixes and other types of things we really kept an eye on and even tried to limit in the past. Now, we labor under fewer such constraints.”

That’s all to the good, Abray says, “We can’t be just another guy in line offering the same thing as everybody else for one penny less. Instead, we add value in terms not only of the material we provide, but also the service we offer, our responsiveness, optimization in the pressroom, and our ability to make sure we have the tools we need to enable our customers to do the best job they can.” ■