

# Defining Crossover Points

By Jean-Marie Hershey

**I**N STATIC sheetfed, web offset and digital printing, the term “crossover” denotes the number of impressions at which a per-unit cost advantage can be gained by switching a job from one process to another. Technological advancements continue to enable companies that offer all or most of these processes to be competitive over a wider range of jobs, extending the run length crossover between processes. At the same time, printers that offer most or all of these processes have deliberately coordinated their digital, sheetfed and web printing platforms as closely as possible in terms of capability and quality—revising, even threatening to render irrelevant, the traditional understanding of “crossovers” in the bargain.

PRINTING IMPRESSIONS’ sources for the following report are Jack Emery, vice president of Data Solutions Management for Sandy Alexander (Clifton, NJ); Bob Anderson, president of Prisma Graphic (Phoenix); and Herb Zebrack, president of Lithographix (Hawthorne, CA).

As usual, the devil is in the details. All press manufacturers have their estimates of where crossover can occur on their equipment; however, when printers have jobs that could be run on either their offset or digital equipment, or on their web or sheetfed offset presses, how they decide where the crossover point is located is frequently more nuanced than a “simple” cost-per-piece calculation. Other considerations include:

**Sheet size:** A printer can impose more images up on a half-size offset sheet than on almost any sheet for a digital press, meaning that an offset press may prove more productive than a digital machine for a given number of impressions. This gives the advantage to offset over the shorter run.

**Turnaround time:** Because there is no makeready on a digital press, the technology is well-suited to rush jobs, for which printers can charge a premium. In larger quantities, the premium can justify digital’s higher cost per piece vs. offset.

**Finishing:** A toner-based digital press yields dry, ready-to-process

sheets a printer can take to the bindery or finish in-line while his still-wet offset sheets are sitting on a skid. This cedes the advantage to digital over the longer run if this time savings is critical to the job.

**Print quality:** The fact that a multicolor offset press (CMYK-plus) is built to handle spot colors, whereas many digital production presses can only approximate them from four-color builds, tends to favor offset in smaller quantities where quality requirements are strict.

For our purposes here, we refer mainly to four-color offset and digital printing, rather than to offset using four-plus colors to expand the color gamut of the press. Except in special cases, and depending on the job in question, many printers and end users could make the case that differentiation based on quality is, by now, largely academic.

Press scheduling and capacity utilization may trump the decision-making process altogether. If its digital capacity were completely utilized, for example, a company likely would not waste its time estimating, but would run the job on an offset press. If it had open time in both departments, however, a company might estimate a job both ways, ultimately making a decision based not on the cheapest way to go, but on what’s best for the client and for the company in terms of turnaround and workflow.

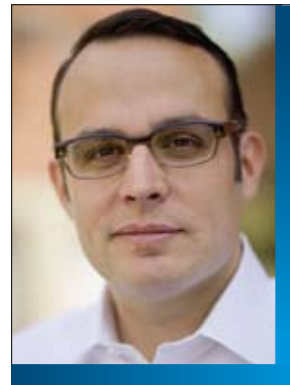
## By the Numbers

Sandy Alexander is a printer whose services portfolio ranges from one-to-one marketing to multi-million-dollar direct mail and ad insert marketing campaigns for agencies, designers and marketers servicing the automotive, luxury, financial, pharmaceutical and retail industries. The company’s extensive capabilities include both web and sheetfed offset presses, in-line finishing and inkjet imaging, digital marketing solutions, and an array of digital and electronic media services.

“For the static commercial printing we do, our crossover points are determined by quantity,” says Jack Emery, vice president of Data Solutions Management, but “we don’t

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use a rule of thumb whereby we hit this number of impressions and automatically push a job from one technology to another.” Instead, “assuming digital and offset fit every parameter of a given job, we’ll estimate it both ways (accounting for the impact of digital click charges on the total cost calculation), and go with the one that’s most cost-effective.”

If the piece will fit on both an HP Indigo and an offset press, for example, “it’s strictly a cost decision,” he adds. “Other things come into play, of course, like available capacity and turnaround time, in which case we might make a decision based on time expectations or what the client is accustomed to.”

In general, according to Emery, Sandy Alexander’s clients are willing to pay a premium for speed and complexity, which are easy to quantify, and for quality, which is harder, he admits. “There are many times a job might be run more cheaply on offset, but we can turn it faster on a digital press. We may very well go digital because the client is willing to pay a premium for the fast turnaround. On the other hand, when there are specific things we can’t provide digitally, such as sheet size or finishing, coating, multiple colors or varnishes that we can’t apply off-line to a digital component, we’ll choose offset.”

Crossover points between available technologies also may depend on the type of work being produced, as well as the purpose for which it is intended.

Prisma Graphic, a commercial printing, Web-to-print and direct mail solutions provider based in Phoenix, promotes itself as a chan-

nel marketer and a provider of hybrid solutions, including commercial sheetfed, web offset, static digital and variable printing, along with offering extensive ordering via its online DokShop storefront.

“We’re a customer-driven company,” says its president, Bob Anderson. “The project, time frame and what’s happening with the job determines where it’s going to run. We may select a job that normally would have run on one of our digital presses to run on our sheetfed offset perfecter. Or, for a mailing job we ran on our sheetfed perfecter, take it over to our digital press and slug in all the PURLs, mailing addresses and calls to action that are variable for that project, rather than moving it to the mailing department to be inkjetted.”

Run lengths and cost per piece come into play, but because Prisma Graphic functions primarily as a supply chain manager, those factors are largely incidental to the main marketing event, Anderson notes. “We may propose running fewer pieces, doing more customization, or buying better lists,” he explains.

“Or, we may be able to take a job that would normally be sheetfed and run it through a digital press. We’ve had a lot of crossover when it becomes more cost-effective, for example, to do a short-run book on a web press equipped with in-line folding and gluing, rather than on a sheetfed press with off-line folding.”

Given that the company takes so many orders online, he adds, gang-printing possibilities are a major consideration. “That’s why the option is not always fixed on price, but on what will be the best and quickest solution for the customer.”

Crossovers, click charges and estimating represent the smallest aspects of an overall picture that asks what a job is going to do in terms of triggering other elements of a marketing plan, Anderson says. “It’s not about the click charge,” he contends. “It’s about becoming a

true supply-chain marketer to my customer. Solution-based selling is the future of our business.”

### The New Math

While it's fair to say that conventional offset printing's higher front-end costs make it less suitable for smaller quantities, what is also true is that technological improvements—both groundbreaking and incremental—continue to push offset run lengths down, keeping the competitive pressure on digital printing (in the case of sheetfed offset) and on sheetfed offset itself (in the case of web offset). Needless to say, these improvements are changing the calculus associated with the quantities that can be run profitably on offset equipment.

According to Sandy Alexander's Jack Emery, for example, “Since we installed a new six-color manroland 700 sheetfed press with DirectDrive technology last year, the economics have changed a little bit for us. That press enables us to have incredibly short makereadies, to come into register and up to color quickly, such that we're able to produce a quality product in about 20 minutes. As a result, an appropriately sized job we might have put on our Indigo or iGen 18 months ago because it involved a lot of versions, we might now produce offset by taking advantage of the efficiencies afforded by the new press.”

Moreover, because there's so little downtime in the makeready process, “you're looking at relatively few hours of operation. It's not like the old days, where by the time you hung your plates and got the press up to color, you'd already expended an hour of press time.



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## Quality: It Depends Whom You Ask

“IF YOU'RE looking at something up close, you're likely to want to have it done litho,” says Herb Zebrack, of Lithographix. “You need to determine what's practical in terms of end use.” On the other hand, he continues, “much of what we do at Lithographix are marketing campaigns, and there are pieces we've already produced for which we need to match the colors, staying close to what we originally did, and that will help determine what equipment we use.

“Sometimes, based on the substrate or size, we have no choice what equipment we run it on. There's a fit aspect—some presses go only so big, and sometimes the client needs only 15 or 20 of them, rather than 1,000—so some of the decisions are made for us.”

Sandy Alexander's Jack Emery adds, “As a company, we do differentiate as to quality. That said, we've worked hard to develop a color management platform, a mix of technology and process that allows us to output and match, regardless of whether we're going to a sheetfed, web,

wide-format or digital production press. We've made our customers very comfortable with that, so the old ‘quality hurdle’ isn't really an issue for us anymore. All other things being equal, including cost, we can go either direction.”

That's not the case with every company, he cautions. “But the evolution of our color management technology into something quite unique has allowed us to overcome an obstacle that often stands in the way of moving something from offset to digital.”

At Lithographix, quality is a function of the company's extensive collaboration with suppliers to profile its equipment across the platform, Zebrack explains. As a result of these efforts, “we've been able to take the way it looks off our 40" sheetfed press and profile it to the 81" sheetfed, the five-meter Durst, the flatbed Durst and, most recently, our HP Turbo, such that when we print on any of this equipment, we come extremely close to what came off the 40" press.”

If the job was going to run only a half an hour or so, it didn't make sense to go sheetfed. In this model, it makes more sense.”

From a capacity utilization standpoint, and because Sandy Alexander's digital business leans heavily to variable data, “it's been good for us to move some of our static work off digital and onto offset,” Emery adds. “There's a lot higher value in variable than in static digital work.”

The company currently ballparks its sheetfed crossover at run lengths under 2,000 pieces, and has logged variable runs of more than two million four-color impressions. For static digital runs, “we can do as many as it makes sense to do, compared with the cost of running offset,” he says, “but I'd rather do that two million run variable than crank out 500 or 5,000 short-run jobs to get the same number of impressions.”

### Meeting in the Middle

While digital printing has extended its boundaries upward to challenge sheetfed on the low end (and vice versa), web offset presses configured with color controls, automated plate changers and other makeready enhancements are pushing downward into longer sheetfed runs. Newer web presses equipped with folders, sheeters and other in-line finishing add-ons also bring pressure to bear on sheetfed offset by offering high-volume production, a viable alternative to long perfecting, and outstanding print quality without drying.

The result? A finished product manufactured at comparable cost, with similar operating requirements, delivered within a faster time frame.

“The compression on sheetfed from the web side has been severe and will continue to be severe,” notes Anderson. “At Prisma Graphic, we print what we call ‘sheetfed quality web work’—direct mail, brochures, etc.—and most clients can't tell the difference between them. Makereadies are already shorter on a web press; as long as you know what papers to keep in stock and that type of thing, you can be very competitive on it.”

Lithographix describes itself as a premiere service company specializing in visual communications. Between its In-Home Lithographic, Out-of-Home Digital and Super Large Div., the organization boasts press equipment that runs from its eight-color, 40" Mitsubishi sheetfed presses to a six-color, 81" KBA Rapida UV; to six- and eight-color webs equipped with sheeters and folders; and a brace of grand-format Durst and HP VUTEk roll and flatbed digital printers that turn out billboards, signage and display work in Lithographix' fastest-growing department.

“Our grand-format clients include motion picture studios, Apple Computer, Victoria's Secret and other high-profile clients that demand the very highest quality they can get,” according to Herb Zebrack, president.

Also on the grand-format side, “Our crossover points between litho and digital depend on size and substrate,” adds Jim Shelton, vice president of regional sales. “Those are the two biggest factors. If it all fits, we would go from 0-500 on our Durst flatbeds, then from 500-1,000 on our HP, and above 1,000, we would go to our 81" KBA Rapida.

“Once again, those are very grey

guidelines depending on equipment availability, client expectations, what we've previously run on that equipment, and if there's something else it has to match,” he says. “In every case, however, the decision is made when we quote the job as to how we're going to run it.”

With respect to the push-pull between sheetfed and web offset, however, “we're the product of what our clients have demanded,” Zebrack points out. “If we're going to stay cost-competitive, we need to make sure our printing on the web is as precise and quality-conscious as possible.”

Lithographix' sheetfed/web cut-off crosses over around 35,000 impressions, as determined by paper weight, crossovers, number of colors, etc. In figuring the best way to meet client expectations, however, “We might choose to run a web job, staccato printed, in eight sensitive colors, with an order quantity of 40,000, on one of our offset presses,” Zebrack says. “Our goal is to enable clients to feel very confident that they're getting the best possible quality, no matter what department it's in.”

Alluding to the in-line finishing capabilities that give webs a significant advantage over sheetfed, “We do have in-line finishing from the standpoint of cutting, folding and spot-gluing and those types of applications,” he adds. “We even have one eight-unit web on which we can spot- or flood-coat UV.”

As for Sandy Alexander, “We've gone as low as 150,000-300,000 pieces on our web offset presses that have in-line finishing capabilities, depending on the finishing,” notes Emery. “Finishing on a simple direct mail piece might be a straight-



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forward fold/score/glue, or it could be much more complex, e.g., a piece that folds out into multiple panels and may have a pop-up or card tipped into it. It all comes down to whether it’s a format that can be done *only* that way. Otherwise, the piece has to be run on standard off-set and hand-finished off-line.”

The crossover discussion is simply the flip side of process selection, which aims to figure out which

printing method can produce the work most efficiently based on product specifications. Finding the appropriate balance among “competing” technologies will permit print providers to offer the best service at the lowest feasible cost per page, drive volume, increase the return on their own and their customer’s investment, and make more money as a result. **PI**