



TAKING THE MYSTERY OUT OF MANAGING TODAY'S PRINT PRODUCTION

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DIGITAL PRINTING INSIDER | NOVEMBER 2013 | FOR COMMERCIAL PRINTERS

MANAGING INK COSTS: PRINTING THE RIGHT DOTS

Understanding ink, ink costs and the drivers of ink usage is critical to remaining competitive if you've invested in a high speed inkjet press. While early adopters were primarily focused on the fact that inkjet ink is dramatically less expensive than toner, new adopters may be more focused on the fact that it is more expensive than traditional offset inks. The majority of companies using high volume inkjet printing today are using it for variable printing. Commercial printers expect ink to represent about five percent of the cost of a typical print job, but ink can represent 30 percent or more of the cost of an inkjet job. Currently, according to I.T. Strategies March 2013 report, over 78 percent of worldwide continuous inkjet placements are at transaction printing or direct mail shops where ink usage is highly variable – but the competing technology is toner. As commercial printers increase their adoption, there will be a renewed focus on managing ink costs in production.

Arguably, the first step in controlling ink costs should be selecting the right paper to use since the surface and finish of the paper dramatically impacts how much ink is absorbed or, conversely, how much ink stays on the surface. After selecting the right paper for your mix of work, the next step is to look at the factors that impact how dots of ink are placed onto the paper. First, let's define a few terms:

Ink Density: The amount of ink in one area of the page. Sometimes referred to as Total Area Coverage (TAC), in full color applications it measures the total ink usage of Cyan, Magenta, Yellow and Black (K). Most printers have a maximum TAC associated with coated and uncoated papers.

Dot Size: The size of the individual drops of ink placed on the page. With the ability to dynamically control dot sizes, you can adjust coverage with different density ranges to optimize quality levels for individual jobs and media types.

Dot Gain: The amount by which the diameter of a dot of ink increases when it hits the paper. As dot gain increases, the printed material will look darker and less crisp since the dots become irregular as they spread. Every combination of paper and ink has a different dot gain based on the surface quality of the paper and the viscosity of the specific ink.

Picoliter: The unit of measure for the amount of ink contained in a dot or drop of ink.

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The perfect resource for decision makers – an in-depth look at our inkjet technology across a wide variety of applications. Download the [Inkjet Application Guide](#) to view high-speed inkjet applications positioned specifically for commercial printers.



View the Press Demo:
According to InfoTrends, Canon Solutions America is the #1 leader in continuous color placements for the third year in a row. See why we earned this distinction by viewing the [Océ JetStream® Dual Color Inkjet press demo](#).



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MANAGING INK COSTS: PRINTING THE RIGHT DOTS (CONTINUED)

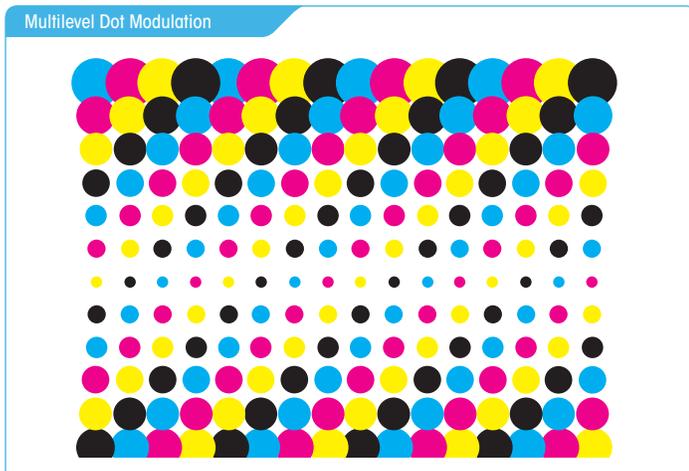
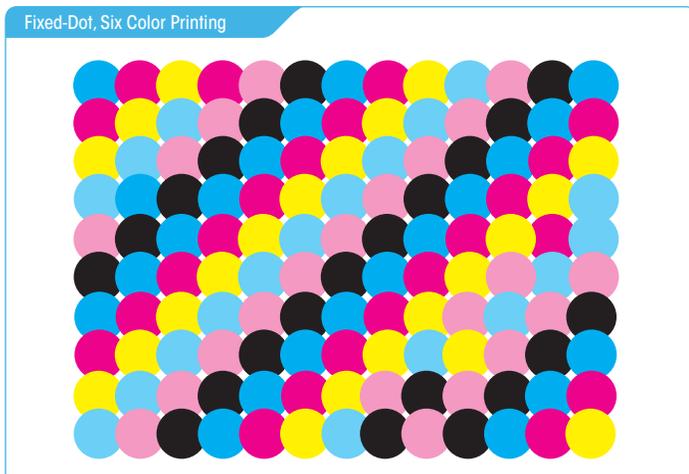
Controlling TAC is essentially the same as controlling ink usage, and there are three main ways to do this: print fewer dots, print smaller dots and print the “right” dots.

PRINTING FEWER DOTS

Reducing the number of dots is basically printing at lower resolution; however, there are a number of ways that this can be applied rather than simply cutting resolution across the board. The resolution of images can be adjusted independently of text or resolution can be adjusted in a single direction. While this is the simplest way to reduce ink usage, it also has the most direct impact on quality. Consider other options before adjusting resolution.

PRINTING SMALLER DOTS

When dots of ink are small, they are more able to stay on the surface of the paper and suffer less from dot gain. This makes printing small dots more efficient than large dots. Printers that allow dynamic management of dot size, known as *multilevel dot modulation*, enable both efficient ink usage and fine control of quality. The ability to dynamically control the size of the drops used for printing means that small droplets can be used for lighter areas and larger drops for darker areas.



PRINTING THE RIGHT DOTS

In most cases, documents designed for production on toner or offset equipment are not optimized for inkjet production. Areas of heavy coverage, multi-level grayscale and rich blacks are expensive or potentially even impossible with inkjet depending on the paper used. Control ink costs and improve quality by making designs “inkjet friendly.”

HERE ARE A FEW KEY TIPS:

- Where possible, avoid large solids.
- When using solids, add some “noise” or “texture” to avoid banding and reduce density.
- Choose images for optimal impact with lighter coverage. Images with a colorful foreground and washed or dropped out background will make your design pop with less ink.

Another “right drops” trick for managing ink costs, even with relatively heavy coverage, is Gray Component Replacement (GCR). While equal amounts of cyan, magenta, and yellow will print as gray, neutral gray can also be created from black (K) alone. “Under Color Removal,” or UCR, techniques were originally used to remove CMY from under black in shadow areas to improve print quality and avoid “over inking” problems or excessive TAC. This process has evolved into dynamic GCR which enables CMY to be replaced by K in a rule-based manner whereby certain colors or areas of a job can be protected from adjustments. GCR has the dual benefit of reducing overall ink usage and replacing a portion of C, M and Y usage with less costly black ink.

With a little planning it is possible to significantly reduce ink usage in production through optimized designs, job appropriate resolution, controlled dot sizes and GCR techniques. While not every one of these techniques can be applied to every job, if considered for every job you will begin to set standards for ink management and quality that improve competitiveness and increase profits.

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Download the *Inkjet Application Guide* to view high-speed inkjet white paper solutions – positioned specifically for commercial printers. The perfect resource for decision makers – an in-depth look at our inkjet technology across a wide variety of applications.



INKJET AND DIRECT MAIL MARKETING: WHAT'S THE HOOK?

Direct marketers know all about the hook – that short little catchphrase that grabs the consumer's interest and maybe even justifies the purchase. When positioning inkjet to the transaction printing market the hook is easy:

White Paper Solution + Workflow = Profits

If you're in the direct mail or collateral fulfillment business, the hook is not so simple.

Yes, direct marketers can save money with inkjet relative to the running cost of toner-based presses, however there are not the same opportunities to eliminate preprinted stocks, standardize on one or two stocks, or combine mailings that transaction printers do. In fact, some direct marketers have linearized over two dozen stocks for production on their inkjet presses and regularly run jobs on six or seven different stocks.

For this market, the opportunity really lies in what inkjet allows marketing services providers to do for their clients. As clients hunger for more personalization, inkjet delivers full color personalization at a reasonable price. Toner presses with similar quality can't meet the cost or time-to-market constraints of major mailers. Web presses offer volume and quality but can't meet personalization or time to market demands. Inkjet fills the gap and of what toner presses and web presses cannot and provides a "best of both worlds" scenario. Maybe that's the hook: "fast, high-quality personalization at a reasonable cost."

ARE YOU HOOKED?

If you want to be able to offer more personalized pieces to your clients in a high-speed environment using a broad array of media, there is an inkjet solution that is right for you. The next challenge will be finding the configuration that makes sense for your mix of business.

If you are using many different types of paper, controlling paper wastage will be critical. Look for a press that offers printing during ramp up. If you are printing coupons or convenience checks you'll

want integrated, high-speed MICR and possibly fugitive ink. Then there is the question of the type of ink to use, dye or pigment.

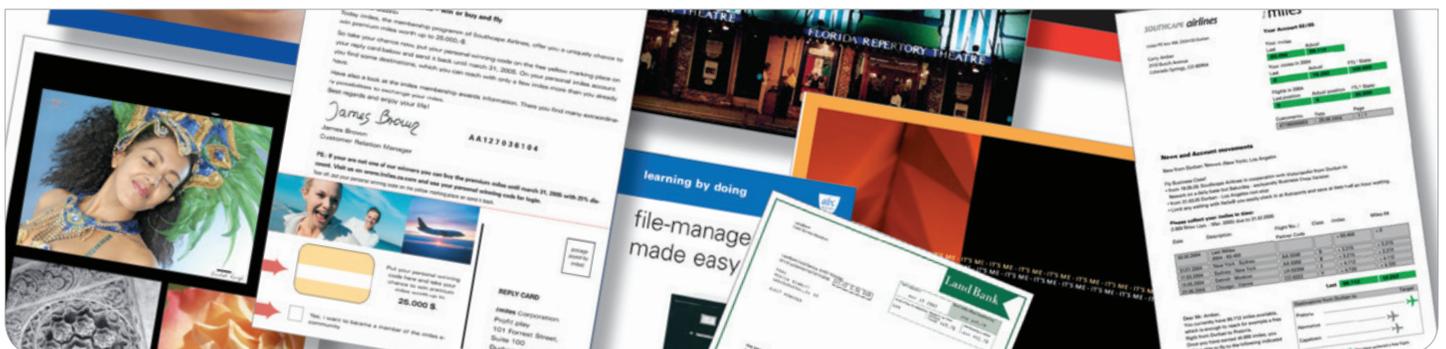
Some might argue for pigment ink in the direct marketing arena because more of the colorant stays on top of the paper, giving a brighter appearance. Pigment also allows for a somewhat heavier Total Area Coverage (TAC) with less potential for bleed through than with dye – the major detractor from pigment being that it has a smaller color gamut than dye and it can take a bit longer to dry. Fast immobilizing pigment inks solve the drying problems and enable even heavier coverage while the addition of spot colors can help to address gamut issues.

The argument for dye inks includes a wider color gamut, which can be further expanded through spot colors for specific brand matching and lower cost for many applications. Since dye colorants are absorbed into the paper and can't be scratched off of the surface, dye-based pieces tend to be more durable. In the end, there is really no best solution; the pigment/dye evaluation needs to be made based on your expected mix of jobs and the papers that you want to use.

When you've finished thinking about ink you will need to start to think about finishing. Folding, binding and perforating equipment has become increasingly sophisticated. Your finishing needs will have an impact on the paper width you select for your press as well as the optimal inline, near line or offline finishing configuration. Having an inkjet partner that will also support the finishing configuration can be a real plus when it comes to getting a complex line implemented and keeping it running smoothly.

GETTING CUSTOMERS HOOKED

With the increasing array of inkjet papers available, there are so many great options for ink and sophisticated finishing options. You can now offer clients tremendous creativity and personalization as well as super-fast turn times. If you can use inkjet to get your clients hooked on full color personalization and the boost in response it drives, there's no doubt you'll be hooked on the margins you can achieve from this printing technology.



INKJET AND DIRECT MAIL MARKETING: WHAT'S THE HOOK? (CONTINUED)

INKJET APPLICATION GUIDE

With so many high-speed inkjet options on the market, you want to be sure that you are investing in a machine that is well-positioned for your company's applications. We created this Inkjet Application Guide to help you with just that. This guide showcases our depth in inkjet technology across a wide variety of applications. Whether you are printing premium direct mail pieces or marketing collateral, we have the application for you. For each segment and application, this guide provides information about:

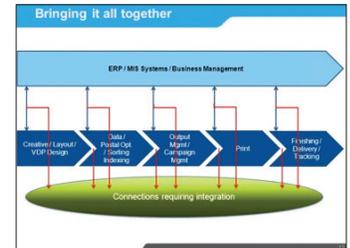
- Segment and description of application
- Added value through digital print
- Screenshot of the application
- Paper and printer settings used
- TrueProof coverage information

XPLOR WEBINAR: PRINT PRODUCTION MANAGEMENT

Managing print production can be quite the challenge these days, especially as the number of jobs increase and the volumes decrease. Throw color into the mix and things become even more interesting. Then there is the decision of what to print on, cut sheet or continuous, toner or inkjet, in-line or near line. Keeping all of this straight and staying on point daily is a task that can only be maintained through the use of intelligent, integrated workflow solutions.

Buddy Mountcastle

- Sheri Jammallo
 - New to Canon Solutions America
 - Segment Manager for the Corporate Enterprise Market Space focusing on Transactional/Direct Mail & in-Plant print environments
 - Over 20 Years in the industry
- Buddy Mountcastle
 - 15 years at Canon Solutions America (Formerly Océ North America)
 - Marketing Executive – Workflow Solutions
 - Experienced in Workflow, Operations, Logistics, Accounting & Reporting



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View the webinar, *Print Production Management*. This Xplor webinar examines how software can help you address these challenges.



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