Hybrid Production

an X-Rite white paper

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Over the past five years, the printing industry has evolved faster than at any time since Johannes Gutenberg invented movable type. For companies that start to think in terms of touch points rather than point size and marketing campaigns rather than M weight, the possibilities can be endless for new ways to improve the bottom line.

Traditional printers used to produce materials by the pound for a public accustomed to one-way static messaging, but the new breed of printing companies are expanding their product and service offerings to take advantage of multi channel communication — everything from quick turnarounds of printed pieces with personalized messages to reformatting content for e-readers, tablets and smart phones.

Consolidated Graphics Inc., a Houston-based general commercial printing company with 70 printing operations spread throughout 27 states, touts its ability to provide an array of multi-touch marketing solutions to customers — reaching out to target audiences with variable-data direct mail, personalized URLs, viral videos and text messages on mobile computing devices. Using these tools, a campaign becomes an interactive experience between the company and potential customers, with analytics that show which media proved to be the most effective.

One member of Consolidated Graphics family of companies — Anderson/LA in Los Angeles — has found effective web-based tools to take the place of an in-house color expert or outside consultant who often was necessary to have at the plant to maintain good color quality.

"Over 60% of the printing companies that care about color quality have to rely on a full-time color guru or hire a consultant to create profiles, calibrate equipment, and tweak jobs for good color results," said George Mendoza, Director of Premedia Services. "That can be expensive. The alternative is a centralized, automated system—preferably managed via the Web. With dollars for color R&D becoming scarcer, the automated approach makes a lot more sense."

Anderson's growing point-of-purchase business drove the company to find a centralized color solution. Clients wanted Anderson to maintain high color quality on POP signs, window graphics, and vehicle wraps that were made on four different printers that did not communicate seamlessly with each other.

By profiling the company's grand format printers on common substrates, Anderson was able to reduce some tasks that took up to four hours to only one hour.

Anderson's challenge of getting all the equipment to "play nice" together is common in today's print operation. Technology has moved at such a rapid clip that it's rare to find any printing company that has equipment all made by one manufacturer, and companies often have to coordinate the work of both analog and digitally-based equipment.

It's now reached a stage of hybrid production, where a project may have a life cycle that takes it from digital printing to Flexo or litho and back, in addition to content for e-readers such as iPad, Kindle and Nook, wide format printing of point-of-purchase displays and websites. All of the variations of the same content require reformatting and rework to produce the desired deliverables.

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Though it sometimes can be a bewildering experience, some basic rules still guide companies as they navigate the landscape of today's print industry.

The Language of Color

Thankfully, the language of color remains the same in today's environment of hybrid production. If anything, new tools are making it easier than ever for designers and creatives to identify exactly what colors they envision, what colors the brand owners approve, and what colors are expected during the production process.

Twenty years ago, the printing industry had built a virtual Tower of Babel out of competing color management systems, formats and notations that didn't translate accurately or easily. X-Rite Pantone has unified the language of color with embedded software and spectral data that helps the whole value chain manage color effectively.

A designer now can precisely identify the color of any inspiration item at a workstation or on the go with the CAPSURE pocket-sized instrument that compares the sample with thousands of colors from the PANTONE MATCHING SYSTEM that are stored in its memory. Pantone, the industry leader in color standards and nomenclature, has an extensive color library for CAPSURE, as well as other tools such as traditional fan decks, formula guide, a phone app for measuring colors, and the Pantone Color Manager software that imports color values into design programs such as Adobe's Creative Suite and Quark.

The industry has stepped up its game through the increased use of spectrophotometers that yield spectral data, instead of densitometers that provide little guidance in predicting instances of metamerism. Metamerism occurs where a pair of samples matches in color under one light source, but do not match under another light source.

X-Rite's Color Exchange Format (CxF®) is a digital format that allows companies to communicate complete spectral data that are not part of the standard ICC workflows. The format is an XML container that can include rich data to make color and appearance better defined so that color can be communicated accurately through CxF aware applications and solutions. CxF is freely available to developers so they can enhance their solutions and provide high levels of color information for their users.

A format called X-Rite Graphic Arts Standard (XRGA) make it quicker and easier for companies and professionals involved in digital production printing to adhere to ISO standards and have confidence that data sent or received from all links in the supply chain is reliable and repeatable. XRGA is a language for multiple devices to communicate to a known and defined standard, enabling customers to work more effectively in today's complex business process.

Quality still counts

Any marketing piece — a printed brochure, an email invitation, a cling wrap for a store window, a corrugated POP display — has to look

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good to be effective. And here a tried-and-true principles still hold: colors need to be printed or rendered as they were intended, and type needs to be crisp.

Successful printing companies are well aware of this rule in their established business, and generally all they need to do is apply the same care to what may be a new medium.

For instance, a commercial printing company probably manages its color using equipment such as an X-Rite-eXact spectrophotometer to check color of a specific area on a piece, an IntelliTrax or EasyTrax color bar reader, an iC2 Plate reader, iQC Print software for ink formulations and NetProfiler 3.0 to made sure all instruments are measuring to a set standard. Both the eXact and the new i1Pro 2-second generation spectrophotometer have forward-thinking color management tools that allow pre-media and production to measure in the various M Standards which are based on varying viewing conditions. As well, many of the industry leading digital presses have X-Rite spectrophotometers embedded within the press, taking color measurement data in real time.

But that same company may not be familiar with the instrumentation and tools used at the design level or prepress.

Fortunately many of the same principles of color science remain the same among the various media.

Displays for computers and tablets, printers and projectors can all be profiled and color calibrated through the use of new tools such as X-Rite's ColorMunki, an all-in-one spectrophotometer designed specifically to work within the creative community. To make sure that the colors appearing on displays match those rendered at proofing and printing operations, X-Rite also has developed a range of i1 color management tools to meet the needs of photo, pre-media, digital pressroom and publishing professionals.

For instance, X-Rite's i1Profiler system provides customers with an easy way to manage color by creating high quality, precise, custom color profiles for monitors, projectors, proofers and conventional / digital presses. With the i1Publish Pro that includes i1Profiler software and an i1Pro spectrophotometer, customers can create digital files with up to up to eight colors (RGB, CMYK and CMYK plus any 4) and share the data files with any stakeholders in a project.

The i1Profiler software allows users to combine images, spot colors or captured colors when creating profiles and to access Pantone color libraries. When used with an i1iSis automated chart reader, the software package can compensate for the effect that optical brightening agents (OBAs) will have on color renderings.

Other i1 color management tools such as i1Display Pro and i1Publish are targeted to specific needs of customers. The i1Display Pro uses an advanced colorimeter and software to create profiles of displays and projectors that take into account ambient light conditions, while the i1Publish is geared for graphic arts professionals who need to organize prepress workflows using digital standards, including new assurance validation and verification functions.

But regardless of how many instruments are used in the process, a person has to evaluate how the colors of an item will look when they are placed under the same illumination as where they are to be sold or used — illumination that is often specified by the customer. And there isn't any substitute for the human eye when it comes to making those judgments.

Pantone recently introduced Pantone D50 Lighting Indicator stickers that help prevent against costly mistakes due to metamerism. Under proper D50-range lighting at 5000K — the recommended illumination for accurate color evaluation — the two patches will appear to match. If the light is not in D50 range, the two patches will appear different, with the contrast increasing as the light source deviates from D50.

Get on the cloud

One of the biggest challenges for companies involved in hybrid production is to get color consistency — to the degree demanded by brand owners — among the various printing processes that may be spread around the globe.

Using the newly launched PantoneLIVE color service, companies can cut time for approvals at prepress and produce improved color matches of labels and packaging regardless of the printing process or substrate used.

PantoneLIVE is an internet cloud-based color service that consists of libraries of licensed color data and related metadata, software that integrates the color information with solutions in the workflow stages and advanced color measurement technology. A customer that uses PantoneLIVE decides on a digital color standard can be accessed anywhere, any time and by any stakeholder — designer, specifier, printer, ink manufacturer — that has obtained an access license from Pantone.

Since all printing processes and equipment are not equal when it comes to range of colors they can produce, a company can use PantoneLIVE to designate a universal standard for a color that satisfies the needs of the specifier, yet can be produced by all printing technologies within practical tolerances.

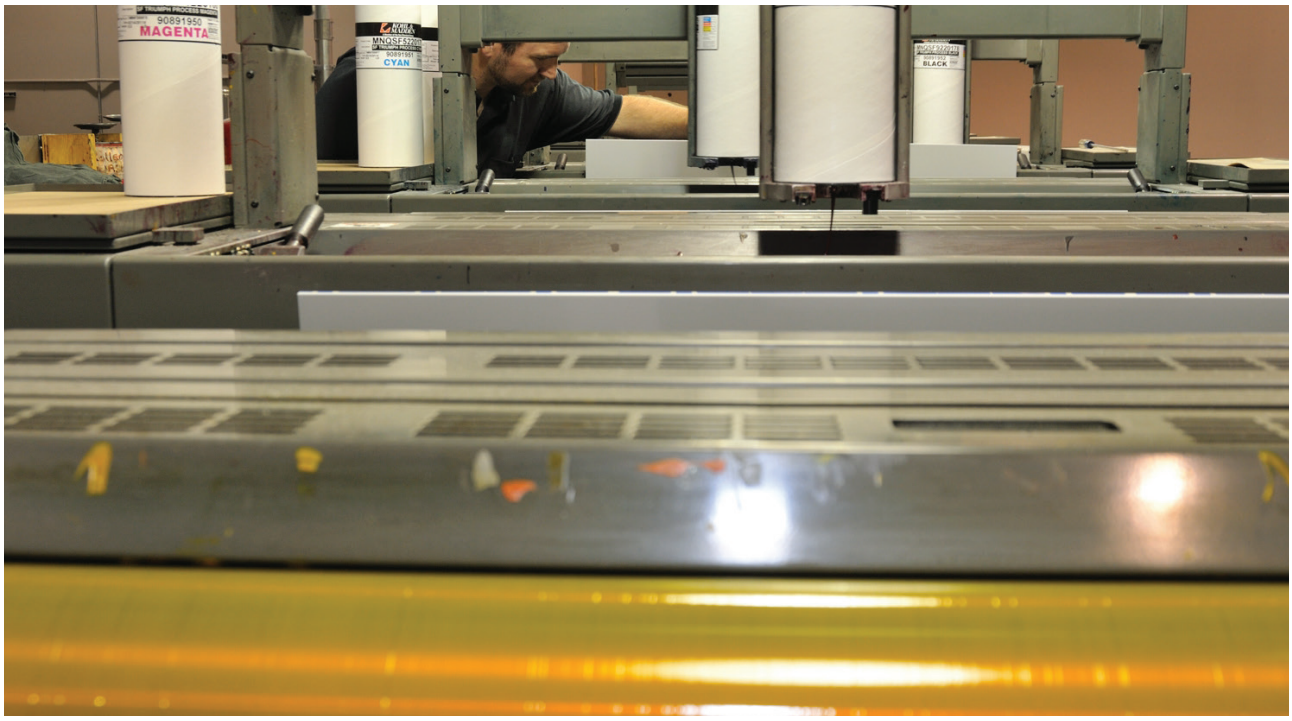
The U.K.-based subsidiary of food giant H.J. Heinz Co. this year used PantoneLIVE to manage color across different printing processes on paper, plastic film and other substrates for its Heinz Beanz brand. Nigel Dickie, director of corporate and government affairs for H.J. Heinz Company Ltd., said PantoneLIVE gave the company "unprecedented control and consistency from different print processes and materials." Using PantoneLIVE, Heinz saw the color variance of labels and packaging produced on four-color litho, Flexo, corrugated and gravure printing cut in half.

There's always help with integrating a new process

Due to the breakneck pace of advances in hybrid production, no one printer or graphic arts company can keep current with changes in on-demand printing, variable-data printing, e-readers, video and other technologies.

X-Rite experts can show graphic arts companies how to improve computer-to-plate workflows that deal with variable data formats such as VIPP, IPDS, PPML, AFP, and PDF/VT, or provide ways to optimize the colors of digitally produced images. And X-Rite continues to lead the industry in research and development of new products that answer the needs of fast-changing technology, such as ways to calibrate the displays of mobile devices so colors are rendered accurately.

X-Rite can help speed the evolution of companies with hybrid printing operations into the next generation of graphic arts corporations with hybrid production capabilities — truly taking printing into the 21st century.



This white paper was sponsored by X-Rite Pantone. For more information about effectively measuring, managing or communicating color, visit www.xrite.com or www.pantone.com.

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