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Heinz and Sun Branding Solutions use PantoneLIVE™ system to improve color consistency in labels and packaging, reduce time to market for new products

Shoshana Burgett, Strategic Marketing Director, X-Rite Inc.

Having the colors of its labels and packaging match exactly in any store in the world does amount to a hill of beans for a U.K.-based subsidiary of food giant H.J. Heinz Co.

To be sure that consumers instantly recognize its trademark blue on crowded store shelves, the Heinz Beanz® brand forged communication links using internet cloud-based color services from X-Rite and its subsidiary Pantone LLC that tied together a supply chain of European companies involved in producing its labels and packaging -- from graphic arts designers to Flexo printers.

Using the newly launched PantoneLIVE process, the result for Heinz has been improved color matches of labels and packaging regardless of the printing process or substrate used, faster introductions of new product packaging and shorter approval times at prepress.

"The benefits of using PantoneLIVE are clear," said Nigel Dickie, director of corporate and government affairs for H.J. Heinz Company Ltd. "The digital tools gave us unprecedented control and consistency from different print processes and materials."

"Across all of our packaging formats, we saw a reduction in color variance of 50 percent and saved time by establishing one color target that can be applied to all our Heinz Beanz designs. The results with our Heinz Beanz packaging have been so remarkable that we plan to extend PantoneLIVE to additional product lines, including Heinz Soups and Spaghetti Hoops."

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When color counts

A study of 1,000 people conducted in December by a marketing research firm on behalf of Pantone showed that more than two thirds of respondents take the color of the packaging into consideration before making a purchase and more than half will reach past the first product on the shelf if its packaging appears to be discolored. About 65% of respondents also said they would be very likely or somewhat likely to question a product's quality if its packaging was discolored, according to the study conducted by the Pantone Color Institute.

H.J. Heinz, a $10.7 billion corporation that makes and markets some of the world's most recognizable food brands, has been an early innovator in the use of color to influence consumer buying habits. Many consider the Heinz introduction of its EZ Squirt™ Blastin' Green ketchup in 2000 as a textbook example of how colors influence consumer purchases. With marketing squarely directed at children, Heinz sold more than 10 million bottles of green ketchup in the first seven months after it was introduced, helping the Pittsburgh company to achieve a 59 percent share of the American ketchup market. While the product was discontinued a few years later, marketing experts hold up the EZ Squirt™ Blastin' Green ketchup introduction as proof that consumers care about color.

In line with its reputation as an industry pacesetter, Heinz this year implemented a comprehensive system of managing color across different printing processes on paper, plastic film and other substrates for its Heinz Beanz brand. The opportunity presented itself when Sun Branding Solutions approached Heinz to try the proof of concept of whether all stakeholders could use digital color swatches in lieu of the traditional physical color swatches for press run approvals. Sun Branding Solutions is a subsidiary of Sun Chemical Corp., the world's largest producer of printing inks and pigments and a preferred partner with X-Rite Pantone in developing solutions for the graphic arts industry.

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"We were working on the PantoneLIVE project with X-Rite when we were approached with the perfect opportunity to validate the solution with one of the world's leading brand owners," says Felipe Mellado, chief marketing officer of Sun Chemical. "We immediately began the project with the PantoneLIVE project team, involving ink technicians, Heinz packaging specialists, Pantone color experts, applications engineers from X-Rite, and pre-media specialists from Sun Branding Solutions."

Good in theory, good in practice

With the Heinz approval of the test, Sun Branding Solutions elicited the cooperation of five of Heinz's printers -- CPC in Germany and Tipografic Ltd. in Birkenhead, U.K. for four-color litho; Flexo printer Britton Merlin Ltd. in Lincolnshire, U.K.; corrugated converter Marchmont Packaging Ltd. in Dublin, Ireland, and CCL Label in Glasgow, U.K for gravure printing.

At the core of the digital color management test, all of the designers, printing companies and specifiers had to precisely identify and measure colors in color space and assign tolerances of colors from a universal standard. For this aspect of the program, the Heinz and Sun Branding Solutions team found that the PantoneLIVE concept was an excellent fit, especially when combined with the technical color expertise of X Rite and the industry cachet of the Pantone color system.

X-Rite specified that its SpectroEye handheld spectrophotometer and IFS 6 ink formulation software would be the right tools for the assignment. The SpectroEye instrument is used by companies internationally to maintain the most stringent standards in the printing industry by performing ink analysis that measures colormetric values, metamerism, and absolute and relative dye strengths. IFS 6 software enables printers and ink suppliers to speed up the color formulation process by delivering first-pass recipes and consistent, accurate corrections to achieve targeted colors across a broad variety of substrates and ink film thicknesses, including packaging films, paperboards, and label substrates.

To define and digitally communicate the exact shade of Heinz Beanz Blue and other branded colors, Pantone utilized its recently launched PantoneLIVE cloud-based color services 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.

Laying the foundation

Like all good systems that aim for precision and repeatability, the Sun Branding Solutions' program audited the equipment and printed materials of its suppliers to develop a baseline on the colors that were already produced with existing inks and processes on assorted substrates. The absolute standard for the project was Heinz Beanz Blue, a color defined by identifying the true spectral color and expectations of Heinz Blue.

All printing processes and equipment are not equal when it comes to range of colors they can produce. For instance, some processes and equipment can produce printed materials with higher chroma and hue values than others because they can lay down thicker quantities of ink on substrates. The Sun Branding Solutions' program sought to find the common ground among all of the vendors -- colors that satisfied the needs of the specifier and could be produced by all the printers within practical tolerances.

With a SpectroEye spectrophotometer as its measurement tool, the Sun Branding Solutions' audit indicated that printed labels for cans had an average colorimetric value of 1.3 Delta E (DE), with the highest DE value of about 3.4. Delta E is a single number that represents the distance between two colors in color space, and a DE of 1 is sometimes considered to be the limit where an average human observer can distinguish between two colors. The colorimetric results were affected by about .5 DE when the labels were glued to the containers.

Other packaging had higher levels of variation in color precision. The audit revealed that Flexo shrink-wrap film had an average DE of 5.7, with some measurements reaching almost 8.6 DE. Heinz marketing had noticed that the Flexo packaging used to shrink wrap quantities of cans for delivery to stores had a distinctly bluish-green or even greenish-yellow cast.

The prior system of printing labels and packaging used a continual loop of changing standards and adjustments, based on physical samples sent between remote locations and the visual assessment of trained press operators. Heinz first issued a color standard as its master, and each converter created a prepress sample getting as close to the color as practical. After Sun Branding Solutions and Sun Chemical approved the physical samples, the vendors began mass production of the packaging.

But all of the elements that go into making printed materials -- inks, processes and substrates -- each have ranges in manufacturing tolerances. When the elements are combined, they create an accumulated "drift" in the Delta E of the printed materials over time that is much greater than any individual tolerance. The drift from the color standard could reach as high as 8 DE before converters fine-tuned the variables to bring the printed materials closer to the color standard, often using visual assessments. Normal industry standards are closer to about 3 DE from the color standard.

In high-speed production of labeling and packaging, each printer tends to arrive at a different "master" standard over time -- even though each may agree to the same original PANTONE MATCHING SYSTEM® standard at the beginning of the project. And as litho printed paper documents, the PANTONE MATCHING SYSTEM® contain colors that may not match exactly with shades printed on other substrates such as plastic film.

"These different shades of the 'master' color at different printers can sometimes lead to delays in product release and order fulfillment, potentially mounting up losses in sales but more importantly, devaluating the iconic brand image" said Patrice Aurenty, Business Leader, Color Management at Sun Chemical. "PantoneLIVE solves this problem by dramatically improving press make-ready time by achieving the right color the first time on the press."

Going digital

The Sun Branding Solutions' process relies on PantoneLIVE and its independent digital standards that truly act as master standards for all parties involved. Residing in the internet "cloud," independent digital standards identify exact mathematical points in color space that represent desired colors -- independent of print processes or substrates. A digital standard can be accessed anywhere, any time and by any stakeholder -- designer, specifier, printer, ink manufacturer -- that has obtained an access license from Pantone.

In the case of Heinz Beanz, Sun Branding Solutions identified the Pantone shades that Heinz wanted for its packaging, which were then loaded into the PantoneLIVE system. In setting the independent digital standards, Sun Branding Solutions took into account the ranges of colors that litho, Flexo and gravure could produce so the color schemes would be harmonized when cans with labels were shrink-wrapped or placed in litho-printed cartons.

The specifications were loaded into X-Rite's InkFormulation 6 software that vendors such as ink formulators could use to access recipes that detail ink bases proofed at different film weights and color strengths called assortments.

As the Heinz Beanz project rolled out, the printers created press proofs that of the packaging for approvals. But to test the accuracy of the streamlined PantoneLIVE system further, the printers then created samples of work using contract proofs instead of press proofs that were outputted on a GMG Color RIP with an Epson SP 7900 digital inkjet printer at Sun Branding Solutions' Head Office in Bradford, U.K. and the Heinz offices at Hayes, U.K . The test proved that using contract proofs is an accurate option for workflows.

Superior color agreement among all the forms of packaging was one immediate result Sun Branding Solutions was able to provide Heinz. All of the processes -- litho label, Flexo, gravure and litho carton -- showed a measured variation of only 1 Delta E or less from their standards. And all of the processes used objective measureable standards based on instrument measurements rather than subjective best judgments from technicians.

Since each printer kept to a tight tolerance on its process, the color variation among packaging printed by all of the companies was greatly reduced.

But improved color quality and consistency weren't the only benefits. The program showed how quickly a concept could be moved from design to store shelf. While Heinz was conducting the initial test with its Heinz Beanz packaging, the company saw an immediate need to use the Sun Branding Solutions' method with the rollout of a new design to support its "1 of your 5 a day" eating-healthy campaign.

In collaboration with EskoArtwork, the team was able to accurately render and proof colors for the 1 of your 5 a day program using an Epson SP 7900 printer, saving days of assessment and approval time. Based in Gent, Belgium, EskoArtwork is a global supplier of integrated solutions for packaging, sign and display finishing, commercial printing and professional publishing. The 1 of your 5 a day test showed how design and marketing teams can use contract proofs to define and approve colors early on in the design process.

Altogether the Heinz experience showed the advantages of PantoneLIVE's cloud-based color services that can improve color quality and consistency, as well as shorten the time it takes to get printed materials from design to press and on the shelf.

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