Have you considered what Hexachrome can add to your printing process? Hexachrome was created with the intent to provide a wider color gamut for the print and design world.

Brighter greens, more vibrant purples, and truer skin tones are enough to raise brows. Hexachrome has been said to be everything creative, pre-press, and print professionals need to drastically improve color reproduction.

When Hexachrome was introduced in 1994, CMYK was the standard within the industry, and it was questionable whether users would invest in an expensive upgrade. Although said to dramatically improve color range and accuracy over traditional four-color process printing, years went by before the popularity of Hexachrome appeared. Now the technology is catching on and retaining loyal users.

Pantone, Inc., a well-known and unquestionable standard in print, has a long history in color communication and color standards. Originally an offset printer in Manhattan, the company grew out of commercial printing to offer a system for communicating color reproduction. The ubiquitous Pantone Matching System (PMS) is widely adopted and supported by almost every professional printing device in the creative industries.

The original PMS is based on mixing special inks to provide a unique color. The Pantone color is used in conjunction with black ink or in addition to standard four-color process inks. Known as a bump plate or spot color, this additional color is a safe way to ensure important colors are reproduced correctly. The downside of using Pantone spot color is the additional cost of using a special ink. Each additional Pantone spot color incurs more expense and is limited by the number of inks a press can print in a single run. The additional printing cost of using a special ink has always been difficult to sell to customers. A four-color build is more cost-effective to print since most presses are already configured as such but lack the vibrancy of using a special color.

Realizing customers were hesitant to budget for a special ink, Pantone seized the opportunity by offering a Pantone Process simulation library, which allowed designers to select a four-color equivalent of spot color. The new library proved to be a huge success, allowing designers to communicate color to the print provider, but without the added cost of using special inks. The downside—only about 30 percent of the original Pantone spot color library was reproducible in standard four-color process inks. The ubiquitous Pantone Solid to Process guides—now renamed Pantone Color Bridge—show the spot color alongside a
four-color simulation. This lets the designer know when to use the real spot color instead of its lesser clone. (Figure 1)

After experiencing the huge success and adoption of the Pantone solid to process library, Pantone was ready for a new challenge to improve spot color simulations beyond the constraints of four-color process, and thus the Pantone Hexachrome print process was born. Many vendors immediately jumped on the bandwagon and began to offer film provers and Pantone-certified Hexachrome inks; but designers and customers did not embrace the new print process as readily as Pantone hoped. Designers saw it difficult to create jobs with an unfamiliar cutting-edge printing system. It was simply easier, cheaper, and more readily acceptable to create four-color jobs with additional spot colors specified as needed. And so Hexachrome has not enjoyed the same success and industry adoption their four-color library garnered in the early nineties. Arguably, Pantone's Hexachrome print process, other high-fidelity color systems, and color management in general have been the slowest technologies adopted by the print industry. The postscript revolution of the early nineties and computer-to-plate (CtP) of 2000, have enjoyed quicker acceptance and adoption with print providers. Yes, running six colors can be more costly than running four-color, but the ability to print almost the entire spot color library and improve color fidelity of RGB originals are certainly compelling reasons to leverage Hexachrome advantages. Unfortunately, designers never did get past the additional cost or the differences in workflow of designing for a six-color system, perhaps due to lack of education on the print process, or lack of interest from clients. The Pantone Hexachrome print process was introduced at the cusp of color management emerging on Macintosh and PC computers. Pantone embraced color management by leveraging the architecture to translate RGB and CMYK files to Hexachrome. They enlarged the printable color gamut by exchanging typical process cyan, magenta, yellow, and black inks with brighter and purer CMYK inks. (Figure 2). Standard CMYK inks appear dirty when compared to the more vibrant Hexachrome CMYK.

In addition to the cleaner CMYK inks, orange and green inks were added to complement the brighter CMYK colors, and to maximize simulating the original Pantone spot color library. Therefore, you cannot really take advantage of the Hexachrome print process by just adding orange and green to standard CMYK inks. Since it's tempting to add orange and green inks to standard process CMYK inks, Pantone licenses ink manufacturers who market and offer Hexachrome inks, to ensure customers can achieve the true advertised benefits of Hexachrome.

Pantone developed the six-color print system because many print providers had six-color printing presses at that time. It is still common for a print provider to offer standard four-color printing with the option of running additional Pantone spot colors. Pantone's marketing strategy did not extol this benefit well enough to entice print providers to change their common, and comfortable, printing setup.
At this point you may have surmised improved color reproduction of photographic images is an ancillary benefit of Hexachrome. For this reason, Pantone chose to market high-fidelity printing of images and colorful designs to customers. The Pantone Hexachrome print process is well suited for reproducing highly-saturated colorful RGB images from digital cameras and scanners. Images and artwork in RGB contain a richer data set that is better represented in Hexachrome. The benefits of RGB and color-managed workflows are certainly apparent and gaining more acceptance. It is much better to use RGB images for Hexachrome rather than CMYK. RGB also works well for any color-managed workflow, CMYK or Hexachrome. CMYK files that are confined to process ink color gamut can be translated to Hexachrome, but won’t benefit from the additional color gamut unless further adjustment is done after the conversion.

At the time Hexachrome was introduced, color management was just emerging and printing providers had not yet embraced the technology, nor were they comfortable converting RGB files to CMYK or CMYKOG. Hexachrome’s reliance on RGB originals and color management were stumbling blocks for many printers.

Color management, and specifically ICC profiles, are the keys to translating vibrant images and corporate colors to a more colorful dynamic print in Hexachrome. The Hexachrome print process doesn’t improve CMYK images, but merely offers a larger color palette in which the converted CMYK document can be adjusted to take advantage of the additional color gamut.

Print providers have taken CMYK plates and put them up with Hexachrome inks to get a more vibrant, if not garish, print. The correct method would be to re-separate CMYK files to Hexachrome, so image integrity is preserved without introducing a color distortion. (Figure 3)

Another issue is how design software will work with the technology. Neither Adobe Photoshop nor Illustrator directly support Hexachrome or any print process with more than four-colors. However, QuarkXPress does support Hexachrome, and it can separate RGB and CMYK files to Hexachrome without additional software.

Pantone offers a suite of software plug-ins for Adobe Photoshop and Illustrator called Pantone HexWare, to enable these programs to color select, color correct, soft-proof, and separate to Hexachrome. The Pantone ColorSuite for Hexachrome also includes printed guidebooks for visual selection of Hexachrome colors and Pantone spot color simulation. The best results are derived by creating your own Hexachrome ICC profiles that encapsulate how your press is printing. Both GretagMacbeth and X-Rite offer color management packages that can create Hexachrome ICC profiles.

As traditional film proofers continue to dwindle due to the trend of CtP, proofing Hexachrome press separations has become more challenging. The trend of inexpensive inkjet proofing and advancements in color matching have provided the platform for proofing Hexachrome.

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