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Variable Data Printing

Pageflex: Document Layouts That Flex 2

VARIABLE DATA PRINTING IS NEITHER AS EASY AS SOME VENDORS WOULD have you believe nor as difficult as those who are deathly afraid of the trend might fear. Bitstream's Pageflex "all things variable" line is more than a print-on-paper variable solution. You can also use these products to generate personalized Web pages and create Web-to-print documents from a browser. Since it's XML, the product separates form from content, allowing designers to create document layouts that "flex."

Variable Data Printing

The Personal Touch 12

SUCCESSFUL SERVICE PROVIDERS MUST DO MUCH MORE THAN MERELY provide customers access to digitally printed materials. The most successful providers find ways to satisfy a range of needs, including marketing consultation, project management, design and copy creation, and fresh, creative solutions to problems not of their own making. These case studies from the PODi industry group illustrate the opportunities that service providers find while seeking to help their customers achieve their goals.

Color Management

A New Palette of Options 8

THE NEW PANTONE COLOR BRIDGE LIBRARY WILL MAKE LIFE EASIER for designers and printers. But just as having a great toolbox won't make you a journeyman carpenter, having the latest and greatest management tools won't transform you into a color guru. It will, however, give you everything you need to become one — with the proper training and safety precautions.

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QuarkXPress 7 and Pantone Color Bridge Combine for a New Palette of Options

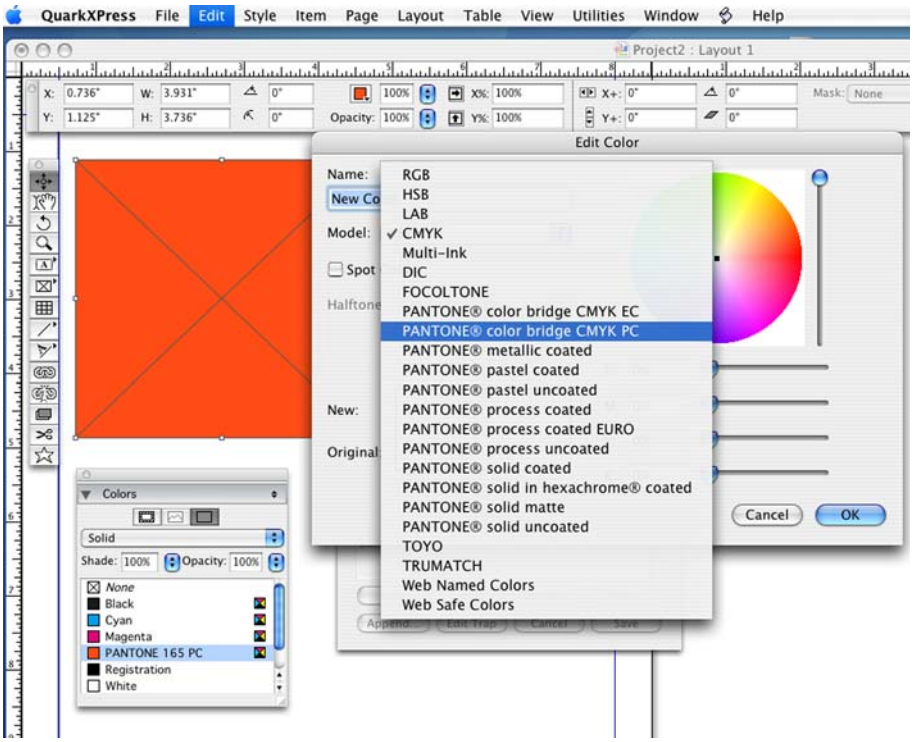
By Stephen Beals

The new Pantone Color Bridge Library will make life easier for designers and printers. But there is a caveat: Just as having a great toolbox won't make you a journeyman carpenter, having the latest and greatest management tools won't necessarily transform you into a color guru. It will, however, give you everything you need to become one — with the proper training and safety precautions.

Color management in print production is taking another step forward with the release of QuarkXPress 7, which features a full complement of color management tools, including the latest Pantone Libraries.

Besides giving designers the latest color libraries from Pantone, Quark in Version 7 has provided them with the ability to use both "As Is" and "Device N" color models. (If that means nothing to you, don't worry; it will all be explained later.) The bottom line is that you will now have options that let you manage color where, when and how you and your printer want to manage it.

The new methodology in QuarkXPress 7 is to give users the option of using the original color values applied to each element of a layout without having to flatten or convert color spaces early in the process. With proper use, that can allow a much higher degree of color integrity in the final output and make the QuarkXPress files a lot easier to repurpose for multiple output intents: the Internet, commercial print, web press, digital press and so on.



The new Pantone Color Bridge Library is built into Quark XPress 7.0. The product is designed to come as close as possible to a Pantone solid color using CMYK equivalents.

Where Does the Color Come From?

In the world of digital print, color is ultimately defined in terms of ones and zeros. But some special problems appear when computer programs try to write a digital description of a color. First, every color device has a different color gamut — that is, a different range of colors it can reproduce. The machines used to print color images are only capable of reproducing the rather small portion of the colors the human eye can see.

When you start with a swatch of a specific Pantone Color, say Pantone 111, the printing process has to jump through a number of hoops if there is any hope of reproducing the color reasonably accurately. All Pantone Libraries define Pantone 111 in a specific, universally defined color space: the L*A*B* color space.

Here's the technical part (don't worry it's short and as non-technical as we can make it). "L" is the "lightness" of a color, with white being equal to 100 and black being equal to zero. Color scientists are the first to admit there is no such thing as pure white or pure black; the figures were adopted in 1976 by consensus. The "A" component measures the distance between magenta and green hues and "B" measures the position of a color relative to yellow and blue hues.

Designers don't need to be concerned with the math; it's pretty easy to see that things can get complicated. Not the least of the issues is defining a color value for "magenta." Designers

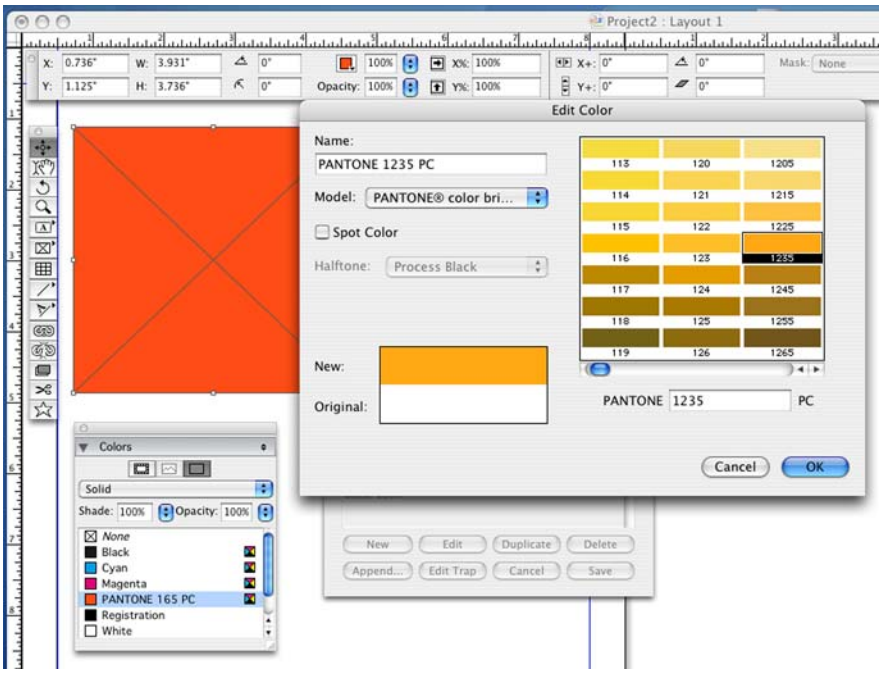
do need to be concerned with how their computer handles color and what the color looks like when it is printed.

The Libraries in QuarkXPress

Different output devices will deliver different color results. L*A*B* is a great tool for defining what a color should look like, but you need a lot more math to get all of the output devices, which have completely different color spaces and produce colors in different ways, to actually match a color. That's where color management comes in.

To understand what happens to Pantone 111, it helps to look at the color palettes available in QuarkXPress 7. Several different tables contain Pantone 111. Why? Because, each of the different tables is set up for a specific set of color standards and there are a lot of color standards out there.

Take a look at Pantone 111 as a solid coated spot color. Select the color using the Pantone solid coated library, then convert it to L*A*B* by selecting that color mode. You'll see that Pantone 111 is defined by the L*A*B* values of L=60.1, A=3.488, B=71.207. Now look at the same color in the matte color library and convert it to L*A*B*. The numbers aren't the same: L=60.8, A=2.937, B=65.75. Color changes depending on whether it is printed on coated or matte stock, as well as with the specific color of the stock, since there are various degrees of "white."



Quark 7 includes a large number of Pantone-licensed libraries, including pastels, metallics and hexachrome. The complete list is shown here.

The Pantone Color Libraries in QuarkXPress 7 are:

- Pantone color bridge CMYK EC
- Pantone color bridge CMYK PC
- Pantone solid in hexachrome
- Pantone metallic coated
- Pantone pastel coated
- Pantone pastel uncoated
- Pantone process coated
- Pantone process coated EURO
- Pantone process uncoated
- Pantone solid coated
- Pantone solid matte
- Pantone solid uncoated

You will find Pantone Libraries for solid, process, pastel, metallic and hexachrome inks printed on coated, uncoated and matte stock. You will also find different libraries for European printing largely because Europeans print to different standard settings and lay the ink down in a different order than most U.S. printers.

If a Pantone Color has an 8000 number in its name, it's a metallic color and if it has a 9000 number in its name, it's from the pastel library. Last February, Pantone re-introduced both the metallic and pastel guides to the market with 97 and 28 new colors, respectively. Although they are not incorporated into Quark's libraries, the new colors are available for download on the Pantone Web site.

Too Many Libraries?

In some cases, providing so many libraries might be confusing rather than helpful, particularly for novice designers. The Pantone Libraries that are not needed can simply be moved from their folder Applications/QuarkXPress 7/Color. It is highly recommended you not actually delete them (you might regret deleting the Euro color libraries if you suddenly come up with a major client in France). Instead, just create a new folder called something like "Colors Not Needed," where you can put them for safe keeping.

Many of the spot colors in a Pantone swatch book cannot be matched in the CMYK color space.

Of course, the same is true of all of the non-Pantone Color libraries found in QuarkXPress 7. Pulling out the TrueMatch, DIC, Focaltone or Toyo color libraries might help prevent confusion for printers and designers who work only with Pantone Color swatch books.

Printing and Proofing Spot Colors

Designers often specify colors that will be printed with spot-color inks. The press operator will buy or mix the ink according to Pantone recipes to match a specific color swatch. When you print spot colors, however, the proof is almost always made on an output device different from the printing press and does not use those same spot color recipes. The proofing device must simulate the colors using the color space of that specific device.

With the Color Bridge swatch book, users can view colors in a variety of lighting conditions and compare them directly against fabrics or previously printed materials. Sometimes hands-on has a big advantage over virtual.

Color management is the process by which the printer adjusts the color output of the proofing device to match the final output. But as we mentioned, spot colors are a special problem. Many of the spot colors in a Pantone swatch book cannot be matched in the CMYK color space. This is particularly true of bright greens and blues and any extremely saturated color. Pantone Reflex Blue and the blue used as the default blue in Microsoft Office programs such as Word are good examples of colors that simply cannot be reproduced with CMYK printing inks.

However, most inkjet printers that are used to create a substantial percentage of proofs for print generally have a much wider color gamut than a printing press. This allows them to come much closer to the right Pantone color on the proof if color management is used properly.

QuarkXPress 7 allows you to print "As Is," meaning the information sent to the printer is not converted when it is printed. As opposed to the old "Device N" setting for spot colors, the As Is setting allows QuarkXPress 7 to output files with multiple color spaces.

Using QuarkXPress 7's color management tools and Pantone's Color Bridge Library, you can come as close as that particular press is capable of getting.

Unfortunately, this is not true when transparency is involved. In such cases, the file must be "flattened" and converted to CMYK when it is sent to the printer. In this case, QuarkXPress 7 still has two ways of getting improved results over previous versions. First, it uses the newest Pantone Color Bridge Libraries. Second, since it uses the new Source Set-ups capability for specifying device profiles and rendering intents and Output Set-ups for specifying output profiles and color models, users can improve color matching of spot colors converted to CMYK.

But if a spot color is involved and As Is is selected in the printer options, the native L*A*B* data is sent to the printer. The printer can then use its own lookup tables to convert the color according to the color gamut of the machine. If you are printing to a six-, eight- or nine-color printing device or to a Hexachrome-enabled device, the printer can use the entire capacity of its wider color space to more closely match those hard-to-hit colors.

What If It's Not a Spot Color?

Frequently, designers don't have the luxury of using a specific spot color on a print job and the printer might need to just come as close as it can to Pantone Reflex Blue, for example, using the CMYK colors on the final printing device.

Of course, a closer match is still not a perfect match. About 50% of the colors in the Pantone Color Bridge swatch book simply cannot be matched accurately. You will still not be able to match Pantone Reflex Blue in a CMYK color space, but using QuarkXPress 7's color management tools and Pantone's Color Bridge Library, you can come as close as that particular press is capable of getting. In fact, this is where the combination of QuarkXPress 7 and Pantone Color Bridge really shines.

Pantone designed its new Color Bridge libraries to more closely correspond to current printing technology and standard practices. Printers generally use digital screens, whiter paper and cleaner printing presses with less dot gain and improved ink pigments. The new swatch books were printed using all of those improvements.

A Word of Caution

The downside is it meant changing the values in the libraries themselves: L*A*B* values vary when printing on different paper and taking readings under different lighting conditions. Be careful. The libraries in QuarkXPress 7 are not the same as those in 6.0 (which also are not the same Pantone libraries found in QuarkXPress 4.0).

That means if you output a job using QuarkXPress 4.0 three years ago that used a CMYK color conversion for a spot color and output the same job in QuarkXPress 7, the color might be different if it is defined differently in the document. It will be closer to the swatch book for the color you are trying to match, but sometimes it's more important to match the color of a previous job than it is to match a specific Pantone color. You might even want to manually put in the CMYK color values from the QuarkXPress 4.0 version into QuarkXPress 7 to match a previous job. To do this, just create a new color in the edit color palette and enter the appropriate CMYK values.

One More Thing

Not every printer or service bureau is thoroughly versed in color management, and they might complain if you choose not to convert spot colors to CMYK in QuarkXPress 7. They might say you should only pick spot color mode for colors intended to print as separate colors. In fact, their raster image processors (RIPs) might not be able to handle it. In any case, it needs to be very clear what the final output intent of your file really is. Having a combination of spot colors in a file, some of which should be converted to CMYK on press and others that will actually print as spot colors, can be confusing.

By the same token, be careful how you choose your colors. This is a problem when you import illustrations or photos from other programs into QuarkXPress, such as Adobe Photoshop, FreeHand or Adobe Acrobat Professional, particularly if they are legacy files that might use old color libraries. Since so many color palettes are available, you can easily have a Pantone 111 U, Pantone 111 M and maybe one of the old Pantone 111 CVC colors in the same job.

Not only will most RIPs see these as three different colors, but if you convert them to CMYK in QuarkXPress, they might all print a little differently. The differences among the conversion formulas are based on printing under different sheets of paper. If they are all on the same job printing on the same paper, the difference might be noticeable.

Better Color Conversion

The upside is much more significant. You simply get a closer match for just about every Pantone Color in the swatch book. About 90% of the colors were improved between the old Pantone solid-to-process guides and the new Pantone Color Bridge Guide.

For the best conversion from spot color to CMYK, it is generally best to make that conversion at the last possible moment and for the specific output device. If you convert a spot color to CMYK in QuarkXPress 7, it will make the conversion based on the tables in the library that will assign a specific set of screen tint values for that color. But remember that any device you send that file to will use the same screen tint values, and that's not the best way to manage color.

A better way is to leave the Pantone colors you would like to match in the Spot Color mode and send them to the printer in QuarkXPress 7's As Is printing setting. This will let the printer decide how to come closest to the L*A*B* values for the color rather than the screen values.

Job Jackets to the Rescue

Another new feature in QuarkXPress 7 can help eliminate communication conflicts between printers and designers: the powerful new Job Jacket. Without going too deeply into how they work and how to set them up, suffice to say you can use Job Jackets to share color environments and color conversion rules. Printers using Version 7 will be able to provide Job Jackets specific to their workflow and output devices. The designers can load those Job Jackets into QuarkXPress and use them to control their file creation from the outset.

About 90% of the colors were improved between the old Pantone solid-to-process guides and the new Pantone Color Bridge guide.

Job Jackets can eliminate questions such as which color library to use, how color management defaults should be set up, what printer presets should be used and much more. For more documentation on Job Jackets, visit the Quark Web site at www.quark.com.

Don't Yet Have QuarkXpress 7?

The new Pantone Color Bridge libraries are available for download from the Pantone Web site at www.pantone.com, and the Pantone Color Bridge library can be appended to a Quark 6.0 document. But remember, many of the enhanced color management features mentioned here are limited to QuarkXPress 7.

A Major Step Toward Color Control

While designers and printers could certainly stand to learn some things about color management, the most pressing need today is for open lines of communication. A few printers and designers will no doubt silently curse both Quark and Pantone for changing things yet again. But change is nothing new. Printers and designers have been caught in a turbulent whirlwind of change for at least the past decade.

The color management enhancements of QuarkXPress 7 and the Pantone Color Bridge libraries make a tag team in the fight for better and easier color management. The bottom line is, you can certainly use these tools to produce more accurate and consistent color. Quark's new Job Jacket can also help make the transition as painless as possible.

Even if it's not quite revolutionary, it's at least a major step toward better color control. **TSR**