Putting It Altogether: Using Graphical Elements in Documents

You are likely familiar with the proverb "a picture is worth a thousand words". Those seven words succinctly convey how powerfully a graphic image enhances our understanding of a concept or idea. (Interestingly, the modern use of the proverb is attributed to an article by Fred R. Barnard in an advertising trade journal called *Printer's Ink*. In his 1921 article, Barnard promoted the use of images to augment advertisements on streetcars.)

What was true in 1921 remains true today – graphic images enliven the appearance, impact and reader comprehension of a printed piece. However, to get the greatest benefit, the images must be of sufficient quality to blend in with the design. Think of the last time you saw a color photograph in a newspaper that was very blurry – the result of the image being *out of register*. Did you notice the content of the photograph, or just the fact that it was out of register?

Image resolution

A critical factor in determining the quality of a graphic image is its *resolution*. Resolution describes the output quality of an image and is stated differently depending on the output device. *Dots per inch (dpi)* is the term for printing resolution; *lines per inch (lpi)* for halftone photographs; and *pixels per inch (ppi)* for screen resolution. *Samples per inch* refers to scanning resolution.

You will hear us refer to images as being *high resolution (hi-res)* or *low resolution (lo-res)*. In general, high resolution is an image having a minimum of 300 dpi when the image is at 100% of the size it will appear in the document. In contrast, low resolution has 100 ppi or less. Note that we used both *dpi* and *ppi*. The term *dpi* is often used interchangeably with *ppi* which can be confusing as well as incorrect. Just remember that *dpi* refers to the resolution of the printing device and *ppi* refers to the resolution of the image itself.
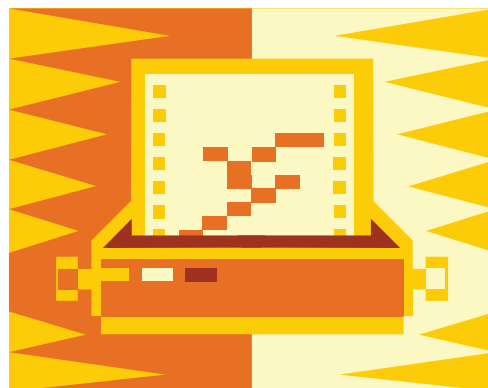
Because so many graphic images and photographs are available on the Internet, and because they can be copied and pasted with just a few keystrokes or mouse clicks, it is tempting to incorporate these downloaded images into documents. And when you do so, the image looks just fine on your computer screen.

But understand that a 100 ppi image is missing a significant amount of information when compared to a 300 dpi image, and this missing information is what makes the image look sharp and well defined. The problem is exacerbated when a 100 ppi image is enlarged. Too few pixels are spread over a larger area, increasing the space between pixels and degrading the image.

Other graphical elements

There are other graphical elements that can be used as effectively as a photograph – illustrations, cartoons, charts, maps, diagrams and original drawings are a few. Graphical elements are powerful in any layout because they draw the reader's eye and often help make text more comprehensible.

Since graphical elements are so dominant, it is important to employ them carefully. Begin with an analysis; the best graphical elements will meet these criteria:

- worthy of bring printed
- good quality
- relevant to the text
- consistent with the document's design and layout

Be aware that scanning an image limits your ability to scale and otherwise manipulate the artwork. You will have more options if you create your own artwork using a program that produces vector art. *Vectors* are mathematical equations that describe the lines of the artwork. Adobe Illustrator, CorelDraw and Macromedia Freehand are all examples of software programs that produce vector art.

Clipart is another source of artwork. The term *clipart* is a kind of catchall for non-photographic images and is derived from the practice of clipping out a specific image from a book of collected images. Today, clip art is electronic and collections are published on CDs or downloaded from the Internet. Electronic clip art comes in both bitmap and vector formats. Vector format provides more options for altering the image.

Charts, graphics, diagrams, tables and maps are examples of *information graphics or infographics*. Infographics are visual representations of information, data or knowledge and are used to help readers quickly understand. A traffic sign is an example of an infographic.

Charts and graphics are used to compare numeric information and need to be very clear with easy-to-read labels. Diagrams are also used for numeric information, but instead of contrast, they explain an order, relationship or process. Tables organize data for analysis in columns and rows.

"Invisible" graphic elements

The underlying structure of your document represents the "invisible" graphic elements that will help you place visible elements effectively. The foundation is a *grid* – a pattern of geometric shapes (usually rectangles) that guide the layout of visible elements. The rectangles contain all elements of the document, from text to headlines to artwork and photographs. Rectangles are the building blocks of layout and allow for great flexibility in moving elements around on a page or panel of a document.

The individual shapes in a grid are called *frames* and they can be filled with text or any graphic element. Text frames can be further divided into columns.

White space, margins and gutters keep the elements in each frame from running off the page or colliding. *White space* is any area devoid of an image; it can be increased or decreased to change the open feeling of the document. A *margin* is white space that creates a buffer zone between text or graphic elements. The margins between columns of text are known as *gutters*.

Page geometry

We recommend you to think of document layout as a kind of page geometry. Use the *golden proportion* (described in *The Idea Corner*) to set the size and shape of the rectangular frames that hold text and graphics. Be sure that all photographs and graphic elements are worthy of being published, are of high quality, are at the appropriate image resolution, and are consistent with the overall design and layout.