How to Pick the Best Graphic Format

Are you confusing a JPEG with a GIF? How can you decide if you should pick a BMP or a TIF? Which image format is the best choice for a document, website, or presentation? How do you sort out the alphabet soup of graphic acronyms? Including proprietary file formats, there are hundreds of different image file types although only a few dozen are widely supported by the programs on your desktop. Let's look at your options to get the results you need.

Graphic Types: Raster vs. Vector

There are two primary categories to describe the techniques used to build a graphic: raster or vector. A raster image is also known as a bitmap and is created from rows of small dots of colour called pixels ("picture elements") or "bits." The big disadvantage is they are a fixed size. If you try to alter the size of a raster graphic it gets the "jaggies" or those rough, stair step edges on a graphic. Most commonly available images are a bitmap or raster format.

Vector image formats contain a geometric description which can be created smoothly at any desired display size. Examples of vector graphic files are EPS (Adobe Illustrator) and CDR (CorelDraw). When available, vector graphics are generally best for printing because they can be easily re-sized without the "jaggies" but many formats are not widely supported by desktop programs.

Understanding Resolution

In addition to the specific graphic file formats detailed below, the resolution of an image also impacts the appearance. Image resolution is described by DPI (dots per inch), a graphic measurement. For instance, most web graphics are 72 to 96 DPI which is fine for screen viewing and even PowerPoint presentations but lousy for printing. This is why most Internet images are blurry when inserted into a document. Ideally, a graphic you want to print should be created and edited with a minimum resolution of 300 DPI.

Do you have huge PowerPoint files? The biggest cause of presentation bloat are photos with large dimensions and a high resolution. Did you know that even if you re-size an image to a much smaller scale, PowerPoint and Word still store the photo in its original size? Fortunately, Microsoft Office programs include the option to compress images to reduce the size and remove any cropped areas. Even better is to modify your photos and other images first using an image editing program such as Photoshop Elements which can significantly reduce the size of the files.

Popular Graphic File Formats

Here's a look at the pros and cons of some of the most common graphic file formats. FYI-each of these are raster images.

GIF (Graphics Interchange Format): A GIF is limited to 256 colours, and so, it is commonly used for images composed of line drawings or blocks of a few distinct colours. This makes the GIF format suitable for storing graphics with relatively few colours such as simple diagrams, shapes, logos, colour clip art, and cartoon style images. One variation, the GIF89a file format, supports animation and transparency allowing you to make a colour or the background in your image transparent. This is one reason GIF is a popular format for Web images.

JPEG (Joint Photographic Experts Group, aka JPG): Like GIF, the JPEG format is another top choice for Web graphics. It is not limited to 256 colours which means you can use the JPEG format for high-quality photographs or pictures containing millions of colours. Most imaging applications let you control the amount of compression (which reduces file size) performed on an image, so you can trade off image quality for smaller file size and vice versa. Be careful, however, because JPEG files suffer generational degradation when repeatedly edited and saved. Unlike GIF, JPEG does not support transparency.

PNG (Portable Network Graphics): The PNG format will likely be the eventual successor to the GIF file format as it is now supported by most browsers. The PNG format is suitable for single images only (not animation) and offers greater colour support and better compression than the GIF format. This is a great choice for screen shots; in fact, PNG is the default file format for many screen capture programs such as SnagIt.

The JPEG, GIF, and PNG file formats are all perfect for graphics on the Internet. They are usually not recommended for printing since these are typically much lower resolution files and cannot be enlarged without losing design detail. It is common, however, for a graphic designer to create a company logo or other frequently used image as a high resolution JPEG to provide an all-purpose graphic file which can be inserted into web pages, presentations, and printed documents.

TIFF (Tagged Image File Format, aka TIF): The TIFF is a flexible format often used in professional publishing (in addition to the EPS graphic format). TIFF is compatible with a wide range of software programs and produces very high-quality images. The TIFF format is complex, so TIFF files are generally larger than GIF or JPEG files. The TIFF's flexibility is both a blessing and a curse as no single program reads every type of TIFF file.

BMP (Bitmap): A BMP file is a low-resolution format which can display millions of colours. Typically, BMP files are uncompressed, and so, they are large. The advantage is their simplicity, wide acceptance, and use in many Windows programs.

If you don't have access to the original images or editing programs and are limited to graphics created by someone else, take comfort to know that over 20 different graphic formats, including each of the image types described above, can be inserted into Microsoft Word, Excel, PowerPoint, Publisher, and even Outlook. Just choose the Insert tab or menu and then select Picture (From File) to see your options.

Working with graphics should now be much clearer and simpler with these timesaving tips.