Computer Tech Talk

Digital Photography

By Dennis Henson

How many Mega-pixels? Mega-pixels, gigabytes, and flop-doodles—what's it all about? This "tech talk" article discusses sizing, saving, and printing digital photos. If you get a digital camera for Christmas, you'll be armed with all you need to store and share photos with your friends and family. As for flop-doodles, I just made that up.

Cameras and Resolution. Digital cameras divide up a photo into individual "dots" or "pixels" (picture elements). Today's digital cameras sample a photo with several million pixels – "mega-pixels". The higher the digital resolution of the camera -- the more you'll pay, generally. So, how much resolution is enough? The human eye can resolve about 150 lines per inch. It takes 300 pixels per inch to match our human vision limit. Let's say that you always print 4x6 inch prints, at 300 pixels per inch (in both directions), you would need a 2.0 mega-pixel camera for a decent picture. If you want good looking 8x10 prints, then you'd better spring for a 7+ mega-pixel camera.

Sizing for the Web. When we shoot pictures intended for display only on a computer screen, we need to determine the highest resolution of a computer monitor and shoot accordingly. The best monitors today have resolutions of 1280 x 1024 pixels with a horizontal screen size of 14 inches or more. That puts pixel resolution at about 90 pixels per inch. If you shoot and store images with higher resolution, the detail will be lost in the display. A 2.0 mega-pixel camera would produce a fine looking image on a high resolution monitor in full screen viewing mode.

Saving Pictures. When you save a picture to your computer hard drive or to a compact disk (CD), each image pixel creates three bytes of storage for photos saved in raw image format. Most cameras use an image compression technique and end up using about ½ the raw space per mega-pixel. That means an entire CD could hold about 600 photos from a 6.0 mega-pixel camera saved in compressed format.

Picture Files. Digital cameras have options for how to save photos. Typical in-camera formats include TIFF and JPG. TIFF stands for tagged-image-format and is the most universally acceptable, but does not save space by compressing the image data. TIFF files are large but maintain the entire camera's native resolution. JPG stands for Joint Photographic Experts Group. This file format is a compression format that results in storage of about ½ the size of TIFF. JPG is a good compromise for storing and transferring digital photographs.

E-mailing Pictures. You should not e-mail large pictures to your friends, especially to those who are using a dial-up internet connection. They won't be your friends anymore! Let's talk about how long over dial-up it would take to send a 6.0 mega-pixel TIFF image -- 48 minutes! So what do you do? First, send the image in JPG format to cut the time in half. Second, resize the image (or shoot it in the camera) at a resolution appropriate for computer viewing and e-mail. Let's say it's reasonable for someone with dial-up to wait 5 minutes for a great picture. Your picture needs to be no more than one million dots -- not more than one mega-pixel in raw or TIFF format before using JPG. For a typical e-mail image, shoot at 200 dots-per-inch and sizing to 4x6. Friends and family will thank you.

Resizing Pictures. There are many programs you can use for resizing photos, once you have photos stored in your computer. Some are free, some are very expensive. When you resize a picture, control both the resolutions (dots per inch) AND the size of the overall print (width x length). If you have Microsoft Office 2003, then you have Microsoft Picture Manager which has an easy to use resizing feature. Adobe Photoshop is a professional digital image processing program that lets you do many creative things to digital images, including simple resizing and re-sampling. Other free image resizing and processing programs can be found by searching at www.download.com

Printing Pictures. I discussed printing digital photos in an earlier article about printers. If you didn't catch that article, just go to my website at: hensoncomputerservices.com and look for the "Computer Tech Talk" link. Printing is usually about ½ the cost at a photo kiosk at the drug store or discount retailer than printing at home on an inkjet printer.

Viewing Pictures. Now that you have these wonderful digital images, how do you look at them if you don't want to print them? Windows XP has a "view as slide show" option for a folder of images. The website www.download.com has many free image viewing programs. Another program I particularly like is Picasa by Google. You can find this software free at: http://picasa.google.com. Give it a try. It will burn CDs or DVDs and display pictures automatically.

So Long. This is the final "Computer Tech Talk" article, at least for 2006. If you have a topic of general interest not already addressed, e-mail me at hcs@mchsi.com, I will consider writing something. To ask questions about a past topic, feel free to e-mail me at the same address.