IT'S TIME TO GO DIGITAL – but how do you pick the right camera?

Electronic Imaging Consulting

Back in 1991, I was working for Eastman Kodak as part of the team that developed the first commercial professional digital camera – the Kodak DCS. It was based on a Nikon F3 SLR camera body, only captured 1.3 megapixels and sold for about $20,000 US. Twelve years later, there has been an explosion in the number, features and price of available digital cameras.

All the traditional still camera manufactures like Nikon, Olympus, Canon, Fuji, Minolta and Kodak, in addition to long-time video equipment manufacturer Sony, offer great digital still cameras. We also have new players in the photography marketplace like HP and Casio. There are now over 70 companies offering consumer digital cameras as listed in the show guide of the February 2003 Photo Marketing Association International (PMA) trade show held in Las Vegas, Nevada,

Digital camera comes with a wide variety of features and I find it useful to group them into six categories of increasing quality: tethered, digital camcorders, video resolution, consumer, prosumer, and professional.

Tethered to a computer. These cameras are great for use as web cameras, but that's about it. You really don't want to carry your computer with you to take pictures.

Digital video camcorders with still picture capabilities. These cameras make great digital movies that can be easily edited on your home computer. However, the still images I've seen from these cameras don't impress me. Save the extra money you pay for this feature and buy a real digital still camera.

Video resolution, often called VGA resolution is 640x480 pixels or .3 megapixels. This is pretty low resolution by today's standards. Such cameras are inexpensive and can be useful for web pages and for children starting out in photography.

Consumer cameras fall in the 2 to 4 megapixel range. These cameras will make great 4x6 inch to 8x10 inch prints. The consumer category offers users lots of choices and today's best buys are in this category.

Prosumer cameras capture from 6 megapixels and up. The word

"prosumer" is a relatively new term used to describe advanced amateur and professional users. If you are a serious photographer with prior digital camera experience, a prosumer camera is probably what you want.

Professional cameras generally capture from 4 megapixels and up and are usually based on a SLR type body and feature interchangeable lenses. They offer high quality, but are generally too expensive for most non-pro users.

There are a lot of good reasons for buying a digital camera. At the top of most people's list are immediacy - you get instant image verification and the ability to rapidly share your images with your friends - and low cost of consumables. With all the choices, let's get down to the specifics of how you compare features to decide which digital camera is right for you. Consumer and prosumer cameras now approach film quality, so these are the two categories you will probably want to look at. By the way, I'll talk more about "film quality" in my next article.

Intended use and cost are the two major factors that should shape you choice of a digital camera. Most want a digital camera to take snapshots of family and friends while others may want to also do things like nature photography or travel photography. What you want to shoot helps determine the features you need. Remember, there is always a trade-off between cost and features and that's why you need to decide what features are important to YOU.

Let's talk about the features you can use in comparing various digital cameras:

Pixel count. This is probably the most important item and will determine what you can do with the camera. Generally, more pixels are better. Consider 2 megapixels as a minimum requirement.

Usability. "How does the camera feel in your hands?" This involves placement of the controls like shutter release and zoom controls and includes camera size. In addition, ask yourself if the on-screen menus make sense to you or are they so complicated you will need to read the manual every time you use the camera.

Zoom lens. Most cameras today have optical zoom lenses. Ignore any so called "digital zoom" claims because you can achieve THAT effect with your own computer. What is the total zoom range - 2X, 3X, 4X or more? How "wide" does it get in 35mm lens terms? Often the wide-angle setting is about what we

would consider normal on a 35mm camera.

Viewfinder. It's important to have both optical and LCD viewfinders because LCD viewfinders don't work well out doors in bright sun light. Does the optical finder have a diopter correction for people with glasses? Is the LCD display bright, with a brightness control and can it be turned off to extend battery life?

ISO settings. Does the camera include a choice of ISO speed settings? These are like having different film speeds in one camera. There are many reasons you might want to take "available light" photos with no flash and you will need an ISO setting of at least 400 for best results.

Type of memory card. Today's cameras have more pixels. This means memory cards need to be bigger and faster. I'll say more about memory cards in a future article.

Compact Flash is still probably the most common and offers the highest capacity and the lowest prices, BUT it's not the physically smallest so camera manufacturers and moving to other media.

SmartMedia was once a strong competitor with Compact Flash, but seems to be falling out of favor with manufacturers.

MMC/SD. Multi Media Cards (MMC) and Secure Digital media are generally – but not always – interchangeable. This format is physically small and offers relative high capacities. SD cards are being used in a variety of non-photographic devices like mobile telephones and PDAs and this wide use is helping keep the price for SD cards low.

xD-Picture card. XD cards are small, with high capacity and rapid data transfer speed. Becoming popular with major digital camera manufacturers.

Memory Stick. This is mostly a Sony produce. About the size of a stick of gum, Sony recently introduced a high capacity, high-speed version. Not as widely available as the other choices.

Other. This includes floppy disks and writable CDs. Floppy disks were popular when image sizes were small and memory cards were expensive as were memory card readers. There isn't much reason to go with "other" today.

Battery. Owners of cameras that use the AA size cells can find a variety of rechargeable (NiCad and NiMH) and non-rechargeable

(Alkaline and Lithium) "chemistries" that are widely available in all kinds of stores. However, with the trend towards smaller cameras, specialized, high energy density batteries (like Lithium ion) are becoming more common. These new batteries are expensive and generally not widely available in stores.

White balance. This important feature adjusts for the color differences between the different sources of light. The Auto setting works well with most cameras and most scenes, but if you like to experiment or shoot available light photos, special settings and a manual adjustment can be useful.

File format. Pretty much all cameras offer you a choice of images size and image compression options, including uncompressed TIFF. Many of the newer, prosumer cameras also offer a RAW file option, which may be of interest to you if you are an experienced digital camera user. Think of the RAW setting as exposing color negative film. You, in your darkroom (actually computer) can decide how to "print" the RAW file instead of having the camera software make the decision for you.

Data transfer method. Serial, USB, USB2 or Firewire. Not very important today with the availability of very low cost memory card readers.

Furnished software. Is it PC and/or Mac and does that make a difference to you? Many cameras come with Adobe's Photoshop Elements, which is an excellent program that works with both computer types.

Special features. Many still digital cameras include the ability to capture short video clips with sound. This feature won't replace a video camcorder if you like to make movies, but the movie clips that can be made are great for use on the Internet.

Reputation. Does the digital camera manufacturer have a excellent reputation for making cameras? Have you, or a friend, had good experience with a camera from the manufacturer?

Personal likes. I've left this until last, but this may be the MOST important single factor.

To summarize, remember after you've considered and compared all the listed features, often a strong personal want, like camera size, may be the decision maker.

For example: I like to have a very small, high quality digital camera that I can easily carry with me all the time. Last year I bought a Minolta DiMage X with a small

leather carrying case that clips to my belt. It's great camera, but being VERY small, holding the camera requires me to be careful of where my fingers are when taking a picture so I don't block the lens or flash. In addition, the small size requires the use of a small Lithium ion battery that is only available from Minolta. I'm very satisfied with the camera, which proves that sometimes "bending the selection rules" is worthwhile.

I'm always looking for possible digital imaging topics to write about so if you have any digital imaging questions of general interest, please email them to me at fshippey@mac.com.

Next:

Understanding pixels – what is a digital image and how does it compare to film

Then:

The care and feeding of memory cards – digital camera users have lots of choices in cards and readers – why all the differences?

Fred Shippey worked for Eastman Kodak in Rochester, NY for 22 years and was involved in a wide variety of conventional photography and digital imaging projects. He has been making worldwide presentations on the impact of electronic imaging on the photographic business as well as lecturing and teaching extensively on digital imaging technology and its applications since 1987. For the last ten years he has been a consultant on electronic imaging technology and applications and has written for a variety of publications in the US and abroad.