

science & TECHNOLOGY

THE BATTALION

PIXELS & POLAROIDS

STEVEN PIWONKA

Battalion
 In 1995, the first digital cameras marketed for consumers were shipped across the country and labeled with price tags of more than \$100. Commercially, they flopped. Last year, an estimated 4 million digital cameras were distributed in the United States, where consumers were waiting and willing to spend anywhere from \$100 to \$20,000. Technology gurus have long expected digital cameras to replace conventional cameras, but technology and the price tag that accompanies the technology have only recently begun to make the digital tools a commercially viable evolution of the century-old technology. A major problem people have with digital cameras is the price. Digital cameras often cost up to 10 times as much as a film camera produces the same quality of image. The only price advantages that digital cameras boast are that, instead of repeatedly doling out money for film, the photographer only needs to replace or recharge batteries; and, instead of paying to have the film developed, one can plug his or her camera into a computer to see the fruits of a photographic expedition.

A snapshot of history

Although digital cameras have just recently come onto the market, the technology has been around since 1951, when Bing Crosby Laboratories introduced the video tapes to record (VTR). It was designed to electronically record television images onto magnetic tape. In the 1960s, NASA began to use digital imaging methods to map the surface of the moon. By the time of the Ranger 7 mission, the technology with crystal-clear images of the moon's surface to be broadcasted to Earth. Since that time, all space probes have been outfitted with digital cameras to help explore the limits of the solar system. Today, the Hubble telescope maps the limits of the known universe with the same type of technology sold at electronics stores.

Picture this

While standard cameras capture an image by focusing light and color onto a piece of film, digital cameras focus light and color onto a light-sensitive computer chip called a charged-couple device (CCD). The CCD saves images electronically as a gridwork of dots called pixels. Digital image quality has always been limited by the fact that pixels are square and to make an image blocky unless there are a lot of them fit into a picture, making the pixels small enough to appear smooth. How many pixels does it take to make an image look as smooth as film to a human eye? "Millions," said Sally Grotta, a reporter for TechTV. "The newest cameras capture images with three or more megapixels — that's 3 million pixels — and the images look as good as conventional ones." Again, the only problem is the price. A camera like the one Grotta described will cost \$800 or more.



PHOTO ILLUSTRATION BY RUBEN DELUNA AND STUART VILLANUEVA/THIRI BENTON

A different perspective

With the high price tag of digital cameras, one may ask why they are becoming an increasingly hot commodity. The simple answer, besides the need to have the newest and hottest thing, is the cameras' versatility. Newer models can record sound and video simultaneously. The user can take a series of images so quickly that they can be played on a computer like a movie, accompanied by recorded sound in MP3 format. Something that may be important to keep in mind, however, is that digital cameras use internal memory, removable cards or disks to hold pictures and sounds. The larger the storage space, the higher the price. Capturing images containing millions of pixels or a long series of pictures with sound to boot tends to eat up camera space quickly. Some cameras only allow one to make an eight- or nine-second "movie" before they run out of space. Using a camera as an MP3 player requires the user to compromise between memory dedicated to music and enough free space to take pictures. Ideally, a user can download his or her pictures to his or her computer and escape having to buy more storage media. However, that is not always an option for the photographer who wants to carry his or her camera while on vacation or on a job assignment.

Getting into focus

Camera enthusiasts have always enjoyed the flexibility of single lens reflex (SLR) cameras. With interchangeable lenses and a variety of accessories, these cameras offer more flexibility than any point-and-shoot camera, which offer a limited field of focus and little or no accessories. Until recently, all digital cameras were point-and-shoot, which did not appeal to hardcore photographers. However, when digital SLRs first entered the market, they were not received well for reasons other than high prices. These models were not compatible with the accessories of the conventional SLRs, and the prospect of buying a digital SLR for \$1,000 or more and then adding the cost of new lenses made these cameras fail. Some companies have corrected that error with a new generation of digital SLRs that capture images with millions of pixels and are compatible with conventional accessories. However, there still remains another difference: with great technology comes great mass. James Kim, a reporter for TechTV, had this to say about a new Nikon model: "Its magnesium alloy body is heavy at 3 pounds, but it's nearly bulletproof ... at times became a pain to lug around." Digital media is not feasibly priced to overtake conventional photography ... yet. As with all other technology, once it has been on the market for a while, the price will probably come down to a range that can appeal to the average consumer. Until then, higher-end digital cameras will appeal to professionals, while the average consumer is likely to become increasingly sold on the simplicity and features that are exclusive to digital cameras.

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