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THE EDITORIAL VIEW

A New Era for Photography...and Me

By Michael Slater {7/31/00-02}

As followers of my columns have no doubt noticed, my interests in the past few years have shifted from microprocessors themselves to their applications, especially in consumer products. I have been particularly excited about the prospects for information appliances, and for digital photography.

Drawn once again by the siren call of entrepreneurship, I have launched a new business—after 13 years at MicroDesign Resources—to pursue both information appliances and digital photography: PhotoTablet, Inc. We are developing hardware, software, and services to make it possible to effectively use a digital camera without a PC. I will continue to contribute occasionally to Microprocessor Report, primarily in the area of information appliances, and I will work with the MDR team to ensure the successful continuation of the Microprocessor Forum and Embedded Processor Forum conferences.

I've written in the past (see *MPR 7/12/99-sp* "Digital Photography Coming of Age") about the advantages inherent in digital cameras, most notably the instant viewing of pictures and the elimination of film and processing expense. The cameras have advanced another generation since I wrote that column, with three-megapixel cameras now available from all the major vendors. Resolution has ceased to be an issue for most consumer uses; prints from these cameras have great detail, even at 8 x 10 inches, and vanishingly few consumers ever make larger prints.

The cameras still have some drawbacks. The biggest quality issue is dynamic range; compared with film, it is more difficult to capture detail, in both shadows and highlights, with a digital camera. Usability is improving, but the user interfaces are still too cumbersome. The delay between pushing the button and capturing the picture is getting shorter, but it is still annoyingly long on most cameras. And the price premium remains substantial: a $300 film camera is superior in most respects to a $999 digital camera. If you want interchangeable lenses, the premium skyrockets.

I believe there is little doubt, however, that digital cameras will continue to improve, and that it won't be long before they become attractive to mainstream consumers. The tougher challenges lie in everything that happens after the pictures are taken, and that is where today's PC-centric solutions fall woefully short. Storing, printing, and sharing digital pictures offer great potential benefit but are just too cumbersome today for most consumers to accept. To make effective use of a digital camera, a consumer must master an assortment of PC applications, which vary in design quality from pathetic to barely acceptable, and must also learn to navigate several Web sites and endure tedious uploads to access printing and sharing services.

In the new world of digital photography, pictures are collections of bits, not arrangements of silver halide molecules. This is the first fundamental shift in photography since its invention—and certainly the biggest change since George Eastman introduced roll film 120 years ago. Just as digital representation is now shaking up

the music industry, it will also lead to a reshaping of the photography industry. The issues are quite different than for music, however, since most photos are taken by the user, whereas most music is purchased from a recording company. Sharing photos will become much easier, especially over a distance. Shoeboxes will be replaced by disk drives. And preserving photos will become a matter of safeguarding bits, not physical media.

As digital photography becomes mainstream, an entirely new infrastructure will be required. Already we see Web-based printing services, countless photo-sharing sites, and a few digital picture frames. In time, there will be many more devices on which people will want to view their pictures. As add-ons to a complex PC-based solution, however, additional devices and services only add to the already daunting complexity.

Consumers need solutions that make digital photos as easy to work with as film pictures while retaining all the advantages of the digital world. Five or ten years from now, the vast majority of the photographic infrastructure will have been replaced with new approaches, new technologies, and new companies. Massive transitions such as this create tremendous opportunities to create new businesses—and this is an opportunity I feel compelled to chase. ◇