

# Image Archiving - Digital imaging's 'dirty little secret'.

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Photographic images are used in many different ways, so the term “archiving” when applied to photos can mean different things to different people. For some commercial applications, photos may just need to last a year or so. However, consumer photography is all about sharing and preserving memories and most people probably assume that the photos they take today will still be viewable by future generations. Just how valid is that assumption?

Archiving wasn't a major photo industry concern historically because B&W images lasted for many generations. In 1954, the Kodak Consent Decree increased consumer use of color prints by opening the color photofinishing market to thousands of photo labs and consumer color photography took-off and consumer B&W photography disappeared.

Consumer color print permanence issues didn't receive much attention until the late 1970's. Thanks to that attention, 30 years later, traditional silver-based color image stability is much improved.

Consumer photography has now reached the point that digital capture has pretty much replaced film because it offers immediacy, convenience and ease of sharing. Digital camera users have many digital print options such as conventional silver halide based materials, thermal dye transfer, and inkjet. The long-term image

stability of these different digital printing methods can vary greatly and digital print lifetime continues to receive a lot of attention in the photo press.

In the past we never had to be concerned about our film originals and put our negatives in envelopes in a shoebox. Since the image format was human eye



readable, even with little or no attention to organization, we found them to be fairly easily to search through.

People have

been buying digital cameras, but little or no attention has been given to preserving consumer digital source files – the digital equivalent of film. Unfortunately, this has created consumer digital imaging's 'dirty little secret' that industry leaders haven't said much about and few other people want to talk about – the lack of a really long-term archiving method for digital file originals.

When the industry was trying to sell the

up-side advantages of digital technology during the early days of digital imaging, it was easy to understand why the photo industry didn't want to talk about this "down-side" of consumer digital capture. With digital capture taking over, we've reached a point that the problem can't be ignored and needs to be talked about and solved.

I must admit that the digital file archiving issue hasn't gone completely unnoticed because there have been a few articles in the press. One of my favorites is by David Weinberger. In an October 2004 article in Wired Magazine, he said "Point. Shoot. Kiss It Good-Bye. Your hard drive is overflowing with gazillions of digital pics. DSC00234.jpg might as well be labeled DON'T\_KNOW\_DON'T\_CARE.jpg."

The archiving issue has also received some attention in imaging industry technical meetings.

Sue Kriegsman and Lee Mandell, of the Harvard University Library, wrote for an IS&T Archiving Conference in April 2004 "if the industry doesn't act, consumers will loose photos". They did an informal, nonscientific poll about consumer beliefs and found that 80% believed digital images would last as long, or longer, than film.

I led a panel discussion at the I3A 2004 Leadership Conference in November 2004 titled " The Shoebox of the Future: In 50 Years Will I have Photos on CD's or Drink Coasters?" The session produced lots of interest, but no

solutions. It was interesting to note that during the discussion, the newer people in the industry were more resistant to admitting there was a problem than industry old timers.

In archiving digital image files, there are three main issues that need to be addressed: lifetime of media, lifetime of format, and durability of retrieval method. All three are equally important. Having thousands of digital images on long lasting media would amount to "write only memory" if the format couldn't be opened or if there was no media reader or image retrieval strategy in place.

MEDIA: Digital data media changes frequently as does computer technology. Have you tried reading a 5 1/4 floppy disk recently?



Right now, the focus of those involved in archiving commercial image collections has been on

using writable media for long-term image file archiving because it's the only solution available. Most involved would agree that writable media - CD-R or DVD + or - R - should be considered only "transitional" storage.

FORMAT: Eastman Kodak, Fuji Photo Film, and Konica Minolta Photo Imaging have formed the Picture Archiving and Sharing Standard (PASS) Group. They intend to develop a new standard that will: define the requirements of digital media authoring/archival, playback, and print enablement for a new generation of products and services; provide interoperability for pictures, motion images, audio and related content among such future systems; and utilize and unify multiple existing standards, to better meet the consumer's desire to easily store, organize, print and share for generations to come.

I must admit to being a little skeptical that another new format or effort like PASS by itself will really solve the consumer archiving problem. Remember, digital formats have come and gone - Photo CD and FlashPix, just to name two.

RETRIEVAL: Digital images may not “age”, but digital image recovery mechanisms do and digital media readers won't last forever.

Since digital image files aren't human readable, unless you've managed to duplicate  
Johnny Carson's



Carmac the Magnificent skills and can hold a disc up to your forehead to 'see' what's on the disc, you'll need some form of image cataloging system if you expect to find the images you are looking for. The PASS effort may help a little here.

As I've mentioned, commercial image collections have accepted the reality of needing to migrate their holdings to new storage methods every 10 to 20 years to keep them viable. Unfortunately, consumer photographers probably won't do this and their precious memories will be lost forever.

The retail photo industry can help with the migration. Transferring consumer digital files for archiving purposes will be a real opportunity for photo specialty shops and dealers. At the moment, the only available approach is to offer a short term archiving solution based on writable media. We need to work to get the photo industry leaders involved to be able to offer consumer photographers a really long-term solution.

Right now, for consumer images, we don't know if the lifetime of the playback device, storage media, file format, or indexing system will be lifetime limiting, but can be pretty certain that with any solely digital technology based archiving method, we are talking of a serviceable lifetime of something like 25 years maximum. It's a given that technology will continue to change.

I think a really long-term solution requires cheap, long lasting, and human readable media. Fortunately, a readably available

solution exists – one that we are all familiar with – silver halide film. It combines and simplifies the media, format, and retrieval issues. Digital image files can easily be written to film for archiving purposes with today's technology.

Image archives on film will last for 100's of years while digital archives will only last for 10's of years. Wouldn't it be ironic if a silver halide based approach were the real, long-term solution for the digital imaging's 'dirty little secret'?

Fred 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 twelve 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. His interest in image archiving goes back to the early 1970s when he worked on color photographic paper at Kodak.

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