Over the past 150 years, the nature of photography has changed greatly. Photography began and in fact derives from the Greek words for “writing with light.” With digital imaging, the production of photographs is not dependent on light. Photographs may now be produced by many techniques, including electrophotography and ink jet. Is the resulting image still a photograph?

The Oxford English Dictionary explicitly recognizes the change that has taken place and has removed the requirement for exposure of a light sensitive material followed by chemically processing. This updated definition is consistent with typical consumer views.

Most consumers do not care how their photographs are produced, and in fact the technology can be quite different. Light-sensitive silver halide salts are used to form three dyes in traditional photographic processes. Electrophotographic printers, on the other hand, require fusing at least four toners, yellow, magenta, cyan, and black, to paper to produce the final image.
Page Prints are available in 12x12 and 8x8, although 12x12 represents 90% of sales. The 12x12-inch is a popular scrapbook size and cannot be produced with most home printers. The Nexpress textured clear coat and glosser allow us to offer matte and glossy options. In this case, sales are more evenly divided, with matte Page Prints representing 60% of sales.

The change in technology from silver halide to electrophotography changes product appearance and is obvious to customers. When we changed the Page Print we clearly communicated the change to our customers and had to answer a number of questions. Specifically, does the quality meet expectations and are customers pleased with the results? After all, sample prints are not necessarily the same as customer orders.

In this project, we addressed “non-photographic appearance” of digital prints. After all, customers had become quite accustomed to the appearance of photographic prints over the last 150 years. “Non-photographic appearance” has two main causes: the image structure from the half-tone process that is used in many digital printing processes and the gloss differential that results from the presence of different amounts of toner in different areas of the image.
The difference in image structure is illustrated by this comparison. The halftone dot structure affects image quality even though it is not generally perceptible at normal viewing differences. Differences are particularly apparent in human faces and may translate into dissatisfaction with overall print quality.

Gloss also influences photographic quality. In this case, the absolute gloss value, which can vary significantly from matte to glossy prints, is less important than gloss differential. Gloss differential results when different areas of the print that have different amounts of toner have different levels of gloss. In a traditional photographic print, all areas of the print, including snow, green trees, blue sky, and text have essentially the same gloss. Consumers have the same expectation for digital prints.

Gloss differential is measured following the procedure given in ISO 19799, which involves comparing the gloss of 40 color patches. For glossy prints, the Nexpress actually shows lower gloss differential than traditional photographic prints. In this respect, the prints are actually more photographic than traditional photographic prints. For matte prints, the Nexpress does have a higher gloss differential than traditional photographic prints, but this difference was acceptable for our market.

Page Prints also contain text and artwork. Here the improved edge sharpness that results with electrophotographic printing is an advantage. Edge blur and line blur show significant improvements compared to traditional photographic prints. This improvement translates into significantly clearer journaling text and artwork.
Image stability is the final concern. After all, we cannot control how customers will display or use their prints. Prints may not be properly stored in albums or otherwise protected from light and atmospheric pollutants. Instead, prints may be placed on a refrigerator or otherwise displayed. Photos may fade or the colors change. Fortunately, in tests with high-intensity xenon arc light, electrophotographic prints were more stable than traditional silver halide prints, even with new reduced particle size toners designed to improve image quality.

As this chart of monthly sales illustrates, sales of Page Prints were unaffected by the transition. This data does not mean that all customers agreed with the change. Some customers preferred traditional photographic prints and clearly communicated their preference. However, the majority of our customers continued to purchase Page Prints from Creative Memories and these prints met their expectations for high-quality prints.

On July 1, 2009 we also made online templates available for Page Prints. These proved unnecessary and contribute to only 2% of product sales. The lesson is very clear. Creative Memories customers want custom Page Prints.
Page Prints highlight the importance of the printed image to the future of digital imaging. Sales of Page Prints continue to grow as customers transition to digital scrapbooking. Page Prints have the benefits of traditional prints in that they are easy to handle, share, and preserve. They make it easy to include the stories behind the photo that will be lost if photos remain on hard drives, memory cards and camera phones.

In an interesting twist, recent studies have also highlighted the environmental benefits of printing. After all, once a print is produced, it is permanent and no further effort is required to preserve it. In fact, images that are printed are the ones likely to be preserved for the future.

Traditional photographic prints are different from electrophotographic prints. It is not that one technology is necessarily better or worse. Each technology has advantages and disadvantages. For Page Prints the transition time was here. For other products that time will come.