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In Digital Age, A Clash Over Fading Photos

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The boom in digital photography has sparked a backbiting squabble over the longevity of pictures made on home printers.

The clash pits printer makers eager to market their own lines of expensive specialty photo paper against big paper purveyors like retailer **Staples Inc.** and photo giant **Eastman Kodak Co.**, neither of which makes inkjet printers of their own.

As more people use digital cameras, many are making homemade prints. Yet many shutterbugs could end up disappointed by the shelf life of their photos.

Wilhelm Imaging Research, a testing lab in Grinnell, Iowa, that was hired by **Hewlett-Packard Co.**, **Seiko Epson Corp.** and several other printer makers, recently publicly criticized Staples' top-of-the-line photo paper as a "disaster," saying photos printed on it fade rapidly from exposure to ozone pollution.

Meanwhile, Kodak last year claimed prints made on its special paper with printers manufactured by H-P and Epson would last more than 100 years. Scientists from H-P and Epson -- which market their own photo paper -- disputed Kodak's claim. "Eastman Kodak uses significantly lower test criteria than industry-accepted practices to achieve this rating," Epson scientists wrote in a paper published on its Web site.

The hostilities underscore how important paper remains in the age of digital photography. The market for inkjet photo paper will grow 23% to \$1.2 billion this year, up from \$972 million in 2004, estimates Cathy Martin, an analyst for Infotrends, a market-research concern based in Weymouth, Mass.

For Kodak, the king of traditional film-based photo paper, gaining market share in ink-jet paper is important to its efforts to adjust to the era of digital photography. And at a time when big retailers such as **Wal-Mart Stores Inc.** are luring consumers to print digital pictures in their stores, printer makers are trying to hold on to their lucrative market of selling photo paper and ink cartridges to consumers. Printer manufacturers reap most of their profits from such "consumable" supplies.

Kodak says it suspects the complaints from printer makers about its paper reflect their desire to boost revenue by selling their own paper. "The competitors aren't very happy about the fact that we have the solution" in the form of a photo paper that will work with all printers, says Rowan Lawson, head of home printing systems at Kodak, which started selling its Ultima photo paper a year ago.

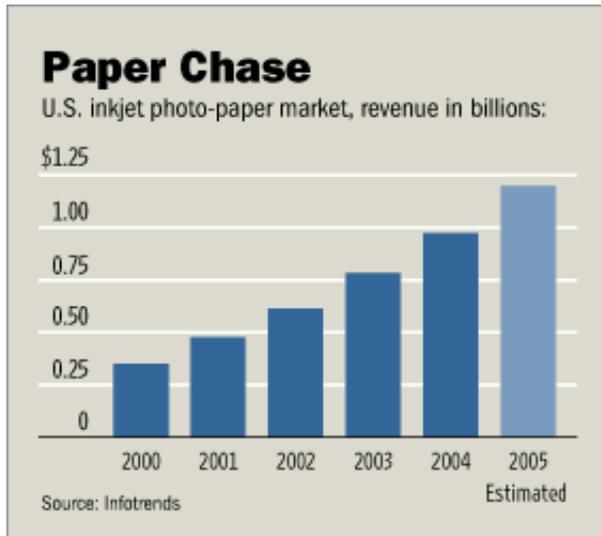
Printer makers, meanwhile, are irked by the claims of Staples and Kodak that their papers work fine with any printer, in part because they realize that consumers are likely to blame the printer itself for any problems. Printer

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makers say they have spent years and millions of dollars fine-tuning paper that works specifically with their own ink. "When you put paper out there to be used with multiple brands, it's difficult to say you'll get any specific results," says John Lamb, marketing manager for printers at **Canon Inc.**, which sells its own paper.



From a consumers' point of view, digital photo fading shouldn't be a big problem -- provided the consumer kept a digital copy of the picture on a CD or online photo-storage site. But with software standards, Web sites and storage devices constantly changing, a print on paper may be the best way to assure that your great-grandchildren see what their ancestors looked like.

For ultimate longevity, archivists recommend subzero refrigeration of prints. Prints last much longer when stored in photo albums or even shoeboxes than those displayed on walls, where they are affected by light, pollution, smoke and moisture.

Rebecca Ludens, a Kalamazoo, Mich., homemaker who writes about photo scrapbooks for About.com, an online information service, says that photo longevity is a big

concern for the nation's 31 million scrapbook-keepers. "They're hoping the pictures will last more than decades," she says.

Kodak claims prints on its papers -- whether made with traditional silver-halide technology or on inkjet printers -- can be displayed for 100 years without fading. The company says color photos kept in albums will last 200 years or more.

Kodak bases its claims on assumptions that its prints will be displayed at 120 "lux," a measure of brightness that is equivalent of a softly-lit living room. Moreover, Kodak assumes the prints will be partially protected from ultraviolet light by a special plastic filtered frame. The company says its testing is based on real-world light levels as determined in a study it did of 48 homes around the world. It says it has been using the same light level for 30 years in these tests and wanted to keep the digital-printout tests comparable to those it did of traditional silver-halide prints.

Most other makers of all kinds of photographic paper based their longevity claims on photographs displayed on a wall under clear glass, at 450 lux, the equivalent to a brightly-lit corporate office. "In our testing we go to the brighter room because that will have a more negative impact," says Tom Miller, an ink expert at Canon.

That standard has been promoted by Wilhelm Imaging, a testing facility that H-P, Epson and other major photo companies have hired to forecast print longevity by running accelerated tests under very bright lights. Kodak and Staples have not contracted with Wilhelm Imaging for its services.

Henry Wilhelm, the firm's president, disputes Kodak's claims about photo longevity because of its testing standards. Although Mr. Wilhelm is only now testing Kodak paper in a Hewlett-Packard printer, he says his tests on traditional silver-halide Kodak prints show they only last about 19 years without fading. In contrast, he says, Epson inkjet prints made on Epson photo paper will last 200 years, and top-quality H-P ink on that company's photo paper will last 108 years. Mr. Wilhelm, who has studied photo longevity for more than 20 years and serves as a consultant to photo archive companies such as Corbis, says he isn't biased by who pays him. He says he often conducts studies without being paid and requires clients who cite his data to fully disclose the results.

Epson says its paper is formulated to accept its pigment based-inks, which are less susceptible to pollutants than dye-based inks used by other print makers. H-P says its paper is designed to absorb ink and then seal itself to prevent contamination.

At Kodak, Douglas Bugner, head of inkjet technology, says Wilhelm Imaging overemphasizes the problem of

fading due to light, and underemphasizes other issues. In particular, he says, Wilhelm hasn't done rigorous tests of many papers for susceptibility to ozone and other pollutants. "It's disappointing they've thrown stones at Kodak" over light-fastness, says Dr. Bugner, who adds that Wilhelm hasn't done the work Kodak has to understand how warmth can affect images over time, even in dark storage. Kodak maintains its paper holds up well to heat.

Wilhelm Imaging has also challenged quality claims that Staples makes about its "Photo Supreme" brand paper, which the company promotes "for cherished memories." Mr. Wilhelm says Staples' best paper fades rapidly due to ground-level ozone pollution. At ozone levels comparable to "L.A. in summer, Staples paper is a complete disaster," Mr. Wilhelm says.

Devin Eagle, manager of Staples's branded products, says it is aware of the potential issue of ozone pollution, and its tests show that its papers don't have a problem. He says Staples regularly hires scientists at New York state's Rochester Institute of Technology in Kodak's home town to test the quality of its paper and inks. Nabil Nasr, director of RIT's Center for Integrated Manufacturing Studies, which performed the studies, says it's up to Staples to release results of his studies of the impact of ozone on Staples paper.

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