

# Personal Tech

The New York Times

## Printers Adapt To World Of the Web

By ERICA TAUB

Now that you can view maps on cell phones, send pictures directly from a digital camera to photo frames and use a smartphone's screen as a virtual airline boarding pass, who needs to print any more?

A lot of us, apparently.

While you may no longer be printing long business reports and have found that it is cheaper to have Costco or Walgreens make your photos than to do it yourself, "the amount of printing has not changed," said Stephen Baker, a vice president at NPD, a research firm. "Ink volume sales are stable. We've seen no drop-off in sales."

But what is being printed, and how consumers are using printers, is changing. Today's printers are being used to create hard copies of theater tickets, downloaded recipes and, yes, even the occasional photograph.

And as consumer behavior has changed, the printing industry is changing along with it, offering features borrowed from the Web and smartphones.

The main change is the addition of wireless connectivity so that documents can be sent from your PC to a printer on your home network. Some printers can receive documents even if they are thousands of miles away from the PC that sent them.

Both Canon and Kodak make models that connect to a home network wirelessly, or via Ethernet. Canon's wireless-capable \$80 Pixma MP495 also allows you to print stills from HD videos taken with certain Canon digital cameras.

Kodak offers home wireless capabilities in four of its five printers, starting at \$130.

Today, every Hewlett-Packard printer priced at \$99 and above comes with its own (nonmodifiable) e-mail address. That means you can take a picture in Paris with your smartphone, and e-mail it to your mother's H.P. ePrint printer in Queens. Because the file goes directly to the printer, her PC doesn't need to be on. She can then print out the image.

If your hotel has an ePrint-capable printer, you can use it to create a hard copy of your boarding pass by e-mailing it from your laptop in your room to the business center in the lobby.

Taking a cue from other Internet-connected devices, like the latest crop of HDTVs, some H.P. printers also come with their own apps, allowing you to directly print Internet content from, say, Nickelodeon or Disney. Rushing out of the house to a party? You can call up map directions directly from the printer using a Bing or MapQuest app that you see on the printer's control panel, and make a copy without using a computer's browser.

Apple and Google also offer products



Hewlett-Packard's Officejet 6500A printer. Photos can now be sent to many H.P. printers directly by e-mail.

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to help consumers print wirelessly.

Apple's AirPrint allows users of most iPhones, iPod Touch and iPad models to wirelessly send print jobs to an AirPrint-compatible H.P. printer that's connected to the same wireless network as the portable device. Currently 18 H.P. models are AirPrint-compatible.

Google's Cloud Print, which is being introduced for Mac, Linux and Windows operating systems this year, will allow users to send documents that are already stored on or sent to Google's servers in the "cloud," to any printer, without worrying about having the necessary print drivers. Unlike H.P.'s ePrint, Google Cloud Print files don't need to be e-mailed. They can be accessed either directly by a Cloud Print-compatible printer from H.P., or through Google's Chrome Web browser from your PC, once a connector plug-in is installed.

Meanwhile, choosing a printer has

become a lot simpler because most printers today, regardless of price, can create good-looking documents. For \$100, you can get models that scan and fax as well. Speed is no longer a consideration; most models are pretty fast.

H.P. leads the industry, with a 49 percent market share, selling more than double the number of printers that Canon, its nearest competitor, sells. Kodak and Epson have lesser shares.

Justin Yu, an associate editor at CNet, a technology Web site, recommended a few models at varying prices: the multi-function Canon Pixma MX870 (about \$150), Epson's Workforce 520 (\$90) or H.P.'s Officejet 6500A (\$75).

A big issue is the price of printing over the long term, especially the high cost of replacing ink cartridges. A new cartridge capable of printing in both black and white and color can easily cost more than \$50, while the printer itself might have cost just \$60.

### ONLINE: PERSONAL TECH

This week's Web features include a video by Sam Grobart on buying the new Verizon iPhone and Gadgetwise posts on useful apps and gadgets. [nytimes.com/gadgetwise](http://nytimes.com/gadgetwise)

Also, you should consider how many documents you can print from a cartridge. Some companies have lowered the price of the cartridge but reduced the amount of ink so that you cannot print as many pages.

Depending on the cartridge, print costs can range from 2 to 17 cents for a black-and-white page, and 10 to 50 cents to print a photo, said Stephen Pociask, president of the American Consumer Institute in Washington.

Kodak charges a bit more for its printers — it now has five models ranging in price from \$69 to \$250 — but a lot

less than competitors for its cartridges. A cartridge with black-and-white ink, which the company says can print 425 pages in the default quality, costs \$10. An H.P. 901 cartridge costs more, \$15, and is rated at only 200 pages.

One way to cut the cost is to buy refilled cartridges from third-party vendors. These are cheaper, but there is disagreement over how well they work.

While printer manufacturers deny doing anything to prevent cartridges sold by third parties from working, reports abound of them malfunctioning. When I tried to use a refilled cartridge from Costco in my H.P. printer, for example, an error message appeared and the printer would not print.

A similar refilled cartridge from Cartridge World, a chain of ink cartridge stores, did work.

"We recommend consumers buy ink from the printer manufacturers," Mr. Yu said. "Otherwise, you'll see degraded print quality and clogged print nozzles. To save money, buy extra-large capacity cartridges."

Mike Stanicek, chief marketing officer for Retail Inkjet Solutions, a California company that supplies Costco with ink refilling machines, said the company was trying to figure out why some printers had problems, and was working on a fix. "There are certain instances where print drivers cause cartridges not to work, but that cartridge may work in another printer," he said.

For those who want to try, Cartridge World sells a refilled version of H.P.'s larger 901XL cartridge for \$22, compared with Costco's and H.P.'s price of \$32; there is no price advantage for the standard-size cartridges.



Canon's Pixma MX870, above left, and Epson's Workforce 520, right, also connect wirelessly to the Internet.