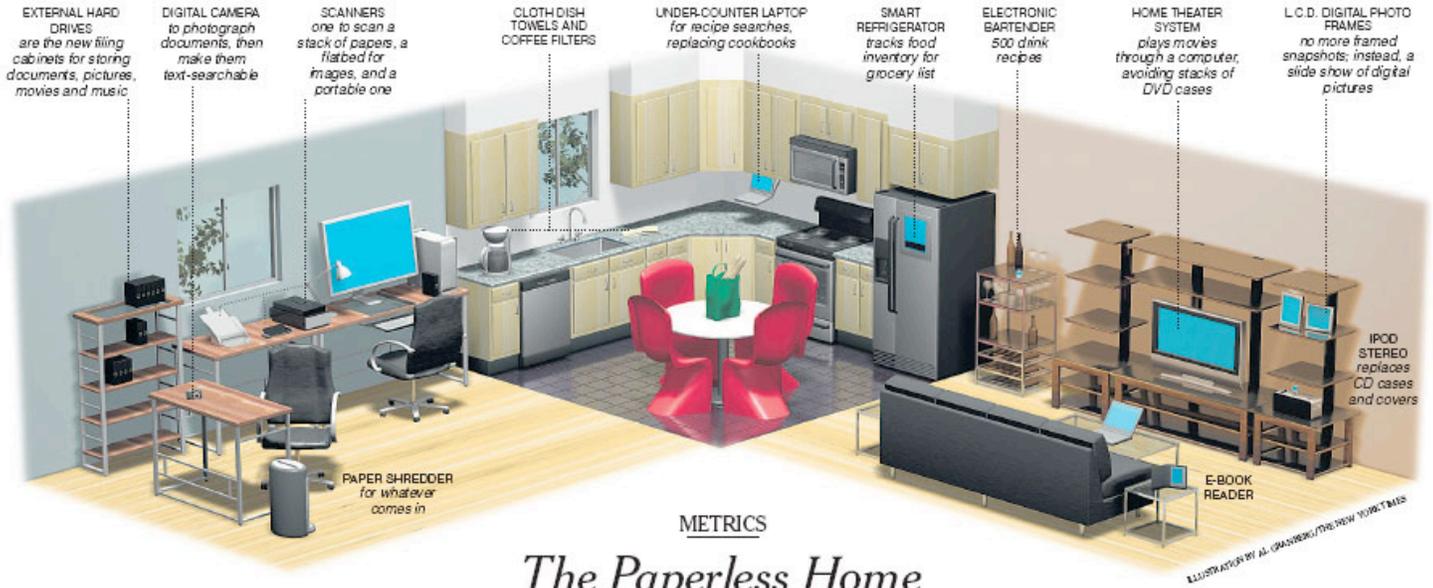


Hannah Fairfield/The New York Times

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Why are many homes starting to curtail the use of paper, while most offices are still flooded with the stuff? New technologies and products designed to keep homes more efficient and clutter-free have hit the market in recent years, with a new generation of scanners and cheap memory storage. The collaborative nature of offices means that documents are often printed and shared at work, while they stay onscreen at home. And finally, paper and ink can be pricey, and it's more tempting to print at work when the company picks up the bill.

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METRICS

Pushing Paper Out the Door

By [HANNAH FAIRFIELD](#)

CHRIS UHLIK'S children can be found in their home computer lab almost every morning. Nicole is writing a story about her two lizards. Tony is playing an interactive spelling game, while Andy is learning multiplication tables. Even 5-year-old Joceline is clicking away at a storybook game.

Mr. Uhlík, an engineering director at [Google](#), and his family live a practically paper-free life. The children are home-schooled on computers. Other sources of household paper — lists, letters, calendars — have become entirely digital.

Going paperless was a conscious decision by the Uhlíks. But many families may be closer to entering a paperless world than they realize. Paper-reducing technologies have crept into homes and offices, perhaps more for efficiency than for environmentalism; few people will dispute the convenience of online bill-paying and airline e-tickets.

“Paper is no longer the master copy; the digital version is,” says Brewster Kahle, the founder and director of the Internet Archive, a nonprofit digital library. “Paper has been dealt a complete deathblow. When was the last time you saw a telephone book?”

Some homes may no longer have phone books, but many have scanners — and, increasingly, more than one. Flatbed scanners, which most people use for photographs, offer high resolution but are cumbersome for scanning large volumes of paper. New, cheap document-feed scanners that can digitize a stack of papers, receipts or business cards in seconds are becoming popular. Add multiple computers, digital cameras and maybe an electronic book reader, and suddenly paper seems to be on the endangered-species list.

After rising steadily in the 1980s and '90s, worldwide paper consumption per capita has plateaued in recent years. In the richest countries, consumption fell 6 percent from 2000 to 2005, from 531 to 502 pounds a person. The data bolsters the view of experts like Mr. Kahle who say paper is becoming passé.

Businesses like [Fujitsu](#) and [Hewlett-Packard](#) that focus on transforming print documents into digital data are beginning to exploit a largely untapped market.

A paperless world isn't automatically a boon for the environment, though. While these digital toys

reduce dependence on one resource, they increase it on another: energy. Some devices are always plugged in, eating electricity even when not in use, and gobbling huge amounts of power when they are. Others, like digital cameras and laptop computers, use electricity while they are recharging.

And the shift might not happen as fast as some technology gurus predict. The paperless office, which some experts had said would be the norm by the 1990s, has so far failed to materialize. Employees are reckless about printing long e-mail messages, reports and memos, largely because the company picks up the bill for the laser printers, photocopiers, ink and paper.

But at home, where printers are slow, noisy and devour expensive ink cartridges, people are more cautious about hitting the “print” button. What little paper comes into the home — receipts, bills, invitations — can be scanned and then shredded. Filing cabinets can be emptied, the data kept, the paper gone.

“Some people are happy to throw away their past. Not me,” says Brad Templeton, who has founded an Internet newspaper and a software company and is the chairman of the Electronic Frontier Foundation. “I’m a digital pack rat. I have phone bills from 1983 and taxes from the 1990s. But I have everything scanned, so it takes up no physical space. For me, scanners provide the magic of still having all my documents without the clutter.”

Although he would like to scan his entire book collection, Mr. Templeton, who is based in Silicon Valley, instead typically reads e-books when he is delayed at the airport or caught in a line somewhere. “It’s not as pleasant as reading a paper book,” he said. “But the e-book you have is better than the book you don’t.”

Many companies, like H-P, Fujitsu, and [Canon](#), have leapt into the paperless home market with new scanners for personal and home use, which is the fastest-growing sales segment. Worldwide shipments jumped to 623,000 in 2007 from 354,000 in 2005, and sales are expected to top 1.1 million by 2010, according to IDC, a market research company.

Fujitsu introduced a document-fed scanner called the ScanSnap in 2003, expecting to sell it mostly to businesses. But the company quickly realized that there was a huge market for inexpensive, fast household scanners. Its small, portable ScanSnap was introduced in November, at a price of \$295, well below the \$495 price of the larger original.

Worried that you won’t be able to find what you need if it’s digital? That’s generally not a problem. Most scans can immediately be turned into text-searchable documents, so the information is just a few keystrokes away.

Some people prefer to bypass the purchase of a scanner and instead farm out the scanning — to India, where it can be done on the cheap. ScanCafé, which specializes in digitizing and retouching photographs, has an office in the San Francisco Bay Area, but most of its employees are in

Bangalore. They will take a shoe box full of prints or a photo album and return the originals with a CD and your own online digital library. They scan paper documents, too, for about 40 cents a page.

Those services are useful for getting rid of accumulated paper, but the trend is not to produce the paper at all. Students and professors at colleges have traditionally used large amounts of paper, but they are moving away from the bulk of it as readings, papers, problem sets and exams are posted online.

Robert Burdock, a student at the University of St. Andrews in Scotland, carries a digital camera to class so he can take a picture of any handout and immediately turn it into a text-searchable document on his laptop.

“Say I’m writing an essay on Edward III. A quick input of the term in Google Desktop and I’m presented with everything I have on the subject,” Mr. Burdock wrote in an e-mail message, which had a note at the bottom asking the recipient to consider the environment before printing. “This is a massive time saver when compared to manual searching and sifting.”

IN the desire for efficiency — to find exactly what you need the moment you need it — paper is being left behind. Mr. Uhlik, who also worked on Google’s Book Search, the book scanning project, has scanned about 100 of his reference books to try to make his home library digital and searchable. Because he wants to keep the house nearly paper-free, most of his remaining 1,000 books are in a shed. He occasionally pays his children to help scan them.

“Once the books are all scanned and backed up on several hard drives, I’ll never have to worry about the shed roof leaking and ruining them,” he says. “I’ve preserved them forever if I put them on the computer.”

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