White Paper

The "Less Paper" Office: How to Reduce Costs, Enhance Security and be a Better Global Citizen.

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François Ragnet
Managing Principal,
Technology Innovation
Xerox Global Services

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The "Less Paper" Office: How to Reduce Costs, Enhance Security and be a Better Global Citizen.

This is a white paper on how to use paper more responsibly, reduce the amount of paper that your organization uses and effectively drive business improvement from a cost, communication, and environmental standpoint.

Paperless or Less Paper?

As long ago as the late 20th century, people began talking about the possibility of a "paperless office." The first prediction of the paperless office was actually introduced in an article in Business Week in 1975 on "The Office of the Future." It became a buzzword in the 1980s. It coincided with the advent of the personal computer, and the hope was that all documents could be processed electronically and that paper would become irrelevant.

Since then, a number of technologies have made it seem within our grasp—chief among them desktop publishing, the web, e-mail, XML, content management systems, e-books, and more. Today, digital information flies around the world and into, through and out of our organizations, is managed and secured in digital repositories and drives business at lightning-fast speeds.

But has paper disappeared? Not at all. Actually, paper consumption is still increasing, soaring to extremely high levels.

Paper continues to predominate in activities that involve knowledge work, reading and collaboration. Paper is becoming a more temporary medium as people print, use and discard documents rather than keeping everything they print. Paper has become a display medium for human collaboration. In *The Myth of the Paperless Office*, Sellen and Harper claim, "We are not headed towards offices that *use* less paper but rather towards offices that *keep* less paper."[1]

So, despite all of the advances and all of the talk and promises, we're still using a lot of paper, and the vision of a paperless office is looking more and more like an illusion.

The numbers are staggering.

We use desktop publishing to produce digital documents by the billions each year, but we still print them in astounding numbers. Lyra Research estimated that in 2006, 15.2 trillion pages were printed worldwide. IDC suggests that between 2007 and 2010, more than 10 trillion pages will be printed in offices in the U.S. alone. But HP tops them all, predicting that by 2010, 53 trillion pages will be printed worldwide (including graphic arts applications such as transactional printing). That's trillion with a capital T.

That's a lot of trees and a lot of dollars. And a lot of information in a form that is great for reading and reviewing, but also one that is too easily lost, damaged or, worse, stolen.

It's also a form that moves too slowly for today's global business clock.

Good news and bad news on paper.

The good news is that growth in the use of paper appears to be under control at a relatively flat 3 % per year, actually declining in some regions already. The bad news is that paper use is still growing while it should be declining.

The consequences for businesses are still serious:

Paper is expensive. It represents a significant cost for office printing and commercial printing (more than 20 percent of the total cost). It adds up quickly when you consider that document-related activities consume up to 15 percent of a company's annual revenue.

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[1] *The Myth of the Paperless Office*, Abigail J. Sellen and Richard H.R. Harper, MIT Press: Cambridge, MA. 2002.

Paper is an information management nightmare. When information exists only on paper, it is extremely difficult to store, manage and share. Those storerooms with labyrinthine rows of filing cabinets are a drain on time and productivity as people go on daily quests for missing information.

Those warehouses full of printed matter represent the most stale and stagnant form of information, slowly decaying to an inevitable fate of unplanned obsolescence. It is estimated that 30 to 40 percent of offset-printed materials go to waste.

And what about all of the ideas, notes and knowledge captured on paper and never shared? That's a travesty for any organization.

Paper represents a compliance and security risk. There are other impacts as well. Regulatory compliance issues require businesses to keep accurate records, provide thorough documentation on a number of business operations, and handle personally identifiable information appropriately. Information on paper tends to be easily misplaced, or simply left lying around where people who shouldn't have access to it, do.

Security issues have to be part of the conversation as well. Information on paper is harder to keep track of. The fact is, every day companies around the world are vulnerable to their most valuable information walking out the door in someone's briefcase. Just Google "stolen trade secrets" to see what I mean.

Paper is a finite resource. Then there are the trees to consider. Trees are more than just beautiful to look at; they are a vital part of our ecosystem. We have to be conscientious and produce paper in ways that are sustainable. That's something that we at Xerox take very seriously.

As one of the world's leading providers of document output solutions, we take great strides to reduce and manage the impact of paper consumption on the environment. All Xerox paper is sourced from responsible foresters and we make extensive use of recycled paper. That is a commitment backed by a $1 million investment and three-year partnership with the Nature Conservancy to advance sustainable forest management.

We're innovating in the area of paper manufacture as well. Our High Yield Business Paper ™ is produced by mechanically grinding wood into pulp instead of using chemicals. This environmentally friendly process produces twice as much paper from the same amount of trees.

What to do about paper?

Start by using less. There are a number of very basic and simple strategies for using less paper, significantly less.

Use common sense! First of all, only print when you have to. Second, use both sides of the paper whenever possible. Xerox was the first to enable two-sided printing and copying because of the obvious advantage of cutting paper use in half on every print and copy job. You can set two-sided printing as the default on print drivers. Use N-up pages if you don't need a full quality printout. Third, print in color when appropriate. Using color is a much more effective way of communication when used responsibly.

Scan to e-mail, workflow and repository. Scanning is a simple-to-use capability on almost every multifunction device now. It is the fastest way to deliver hard-copy information to a distribution list, ideal for review teams to share markups and revisions, avoiding the cost of overnight delivery, fax lines and the associated cost and use of paper.

Get your organization to implement scanning solutions for everyday tasks. Focus on areas that add the most value such as processing invoices, purchase orders, sales contracts and resumes. Use formats such as searchable PDF and add metadata to make the information easier to find and more useful to a greater number of people.

Use scanning to managed repositories to help project teams collaborate with secure access and greater control of information.

Digitize information as early in the process as possible. Scanning is clearly a key less-paper strategy. Here's some food for thought as to where it can get you. The same digital document can be shared instantly and travel to as many destinations at the same time as needed, whereas paper documents must be duplicated and distributed individually.

Take a look, for example, at what we are doing for the "Digital Mailroom". It focuses on the daily flood of business correspondence that organizations have to deal with. It employs a variety of intelligent scanning technologies that mimic the human processing of incoming mail: read, recognize, categorize, index and forward for appropriate processing. The Digital Mailroom benefits include time (improved processing speed), quality (higher quality service to the client), cost reduction and regulatory compliance.

Optimize the output infrastructure.
Here's another way to get control of paper usage. From our experience performing assessments of our clients' environments, most organizations do not know how many output devices they have. Do you? Sometimes we find more devices than people!

We apply our expertise to bring the ratio of people to devices in line, consolidate assets with a combination of workgroup multifunction devices and local printers, and make sure that people have the right tools in the right places to get their work done effectively and efficiently. We call it, "the optimum office."

The Xerox Office Services Suite includes a technology called Print Infrastructure Mining, which computes print usage patterns to help optimize your print fleet while reducing paper consumption.

By using Social Networking algorithms (a la youtube.com, amazon.com, etc.) this technology developed at the Xerox Research Centre Europe automatically collects print activity, i.e., where you print, and potentially what kind of document formats you typically print in.

This technology enables the administrator to identify the best way to rationalize and right-size your infrastructure, to make it more efficient and less costly, and thus use less power and paper.

Make your documents more efficient and effective.
When you do print, make sure that you are making the best use of available technologies to make your documents more effective.

Here are a few examples.

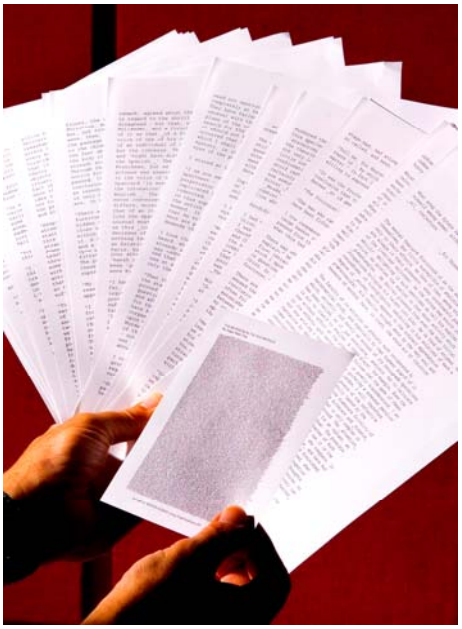
Using *variable information (VI) printing* in your marketing communications can help you deliver more targeted, relevant messages and offers. So instead of mass mailings generating a 1 to 2 percent response rate, you can use full-color VI printing and leverage client data and increase response rates by a factor of four! Print less. Generate greater return on investment.

The same goes for your transactional documents such as statements and invoices. You can turn these must-read documents into hardworking promotional documents by embedding marketing offers (based on known client history and preferences). *Create a trans-promo document* that helps you up-sell and cross-sell other products and services and avoid those annoying extra inserts that more often than not are printed only to get ignored or tossed.

Make your documents more valuable—make them more interesting to attract your clients' interest. For example, Glossmarks® gives a nice, holographic-like effect to your documents—with a standard printer, standard toner, and the right software, and with Xerox color.

When appropriate, build in records management and security to your printed materials. New marking technologies such as the aforementioned Xerox Glossmarks, plus Microprinting, UV fluorescence and InfraRed Marks enable you to embed security information into documents to create audit trails and prevent counterfeiting, thus decreasing useless copies.

Developed at the Xerox Research Center Webster, all of these techniques can print variable data to secure documents at a run length of one and disappear when the document is copied. They can be created on a standard printer, with standard toner and paper.



Microprinting

These Specialty Fonts are backed by several patents and patent applications. Because the Specialty Fonts can be made without special inks or equipment, there are no extra supply costs or additional steps required during printing. Users can embed the security feature as a normal part of their printer's process.

What's next?

For you, responsible use of paper starts with using less and recycling what you use. More and more, people are finding that paper is a temporary medium, ideal for sharing in meetings, organizing our day, reviewing/revising, etc., then discarding.

So if the information on the paper is short-lived, why not make the marks on the paper short-lived as well? Xerox has pioneered a few technologies that will help you do just that.

Temporary documents are part of Xerox's ongoing investments in sustainable innovation—or "green products"—that deliver measurable benefits to the environment, such as solid ink printing technology, which generates 90 percent less waste than comparable laser printers; more energy-efficient printers, copiers and multifunction devices; and other paper-saving innovations.

Electric paper and e-book

The e-paper technology is work that originated in the 1980s and was pioneered at the Xerox Palo Alto Research Center (PARC), before gaining broader adoption over the last few years. The concept of portable, easy-to-use e-paper holds the potential of delivering new forms of incredibly rich content. Embedded video, links to supporting material, dynamic data presentation and e-books would represent a major step forward in how we communicate. However, bringing a usable, affordable version of e-paper to market is still years out. And whether people will readily adopt it as a replacement for paper is still to be determined.

Transient Paper

Two out of every five pages in the office are for "daily" use, like e-mails, Web pages and reference materials that have been printed for a single viewing. Unfortunately printed pages use inks and toners that last indefinitely and require the paper to be recycled in order to be reused.

Wouldn't it be great to reuse the same sheet of paper over and over again? We call this new technology erasable paper. After that, the marks disappear and the paper can be reloaded into the device. I guess you could call it a *remarkable* form of paper.

Erasable paper

Developed at the Xerox Research Centre Canada, this new form of printing for one time use utilizes compounds that change color when exposed to light, and then gradually disappear over the next 16-24 hours.

Now users can print things like daily schedules, e-mails, meeting notices, directions, etc, have them when they need them, and simply place them back in the input tray when they are done.

Xerox has filed for patents on the technology, which it calls "erasable paper." It is currently part of a laboratory project that focuses on the concept of future dynamic documents.

Conclusion

So will paper disappear some day? Can we ultimately achieve the long-promised but unfulfilled vision of a paperless world? And when we do, will we then have to deal with the incredibly messy, cluttered and largely unmanaged world of the expanding digital universe which, EMC-sponsored research from IDC predicts, will reach 988 exabytes[2], increasing six fold from 2006?

It seems more possible now that we may one day find an economically feasible, suitable replacement of the "physical" artifact of a document. But we are not there yet … and in the meantime, it behooves all of us to pursue the very achievable vision of a "less paper" office.

[2] An exabyte is equal to 10^{18} bytes

About the author

François Ragnet

As Managing Principal, Technology Innovation, within Xerox Global Services, François Ragnet leads a team charged with transferring novel technologies into mainstream Xerox solutions offerings. Current initiatives focus on text-, image- or feature-based categorization of documents, as well as identifying deeper semantic analyses which will enable Smart Document generation from traditional legacy formats or paper. His team also focuses on enhancing current offerings within the office environment to improve the efficiency of current products and streamline support processes.

Previously, Ragnet served as program manager and senior project leader for the Xerox Research Centre in Europe where his team provided innovative technologies in support of next-generation Xerox offerings. Their goal was to provide solutions that allow users to filter configure and extract information from documents across advanced platforms that bridge production, printing and scanning. François was also a project leader in wireless technologies, specifically mobility and wireless (Bluetooth), content management, security, print and infrastructure management.

While at the Research Centre of Europe in Grenoble, France, Ragnet was a founding member of the Technology Showroom—a showcase of experimental technologies that hosts international events with clients from all over Europe.

Prior to joining Xerox, Ragnet was a researcher at the National Institute of Standards and Technology in Gaithersburg, MD, where he focused on creation of a demonstration platform for state-of-the-art collaborative work technologies.

He holds a master's degree in telecommunications from the Institut National des Telecommunications, Paris, France.

To learn more about François' work, visit:

www.xerox.com/thoughtleadership_Ragnet

To read his Future of Documents blog, visit:

http://futureofdocuments.blogs.xerox.com/

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Xerox Global Services will help you take a new look at the business challenges you face today. No other company has more experience making your business processes more cost-efficient and secure, from managing your assets in the office to records management to services for large-scale print production. And only Xerox Global Services uses Smarter Document Management℠ technologies to deliver the results that you can see and measure.

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