

## Time to get serious about the paperless office

Espen Andersen

Of all the sayings I dislike, the most vapid is one I have heard as long as I have been working with IT: "We will have the paperless toilet before we have a paperless office." Normally uttered with a dry cackle and a finger pointed towards my office, which does not lack for paper.

But the paperless office is on its way: Most people today (I am speaking about the most affluent third of the planet here) read many more words on screen than on paper every day, Internet newspapers have more readers than paper papers, and grandmothers and their grandchildren communicate via texting and e-mail. Nevertheless, paper is still here, increasingly as an irritant rather than a resource.

What would it take to get rid of paper? To understand that, we need to be a little bit more specific about what paper really is – or rather, what we use it for. Here are the most common uses – and some guesses on their future.

### **Paper as information storage**

You find paper used as information storage in archives, neatly ordered so you can find and consult it when necessary. This use of paper is rapidly disappearing. Paper archives are expensive to maintain, poorly searchable, and hard to access from a distance. In ten years, I do not think there will be any sizeable information-oriented paper archives left – even libraries will largely be monuments to the free word rather than free words, people will access the information digitally – thanks to ever-cheaper hard disks and scanners.

### **Paper as legal vehicle**

Paper archives today, however, are less information repositories than conservatories of agreements made. We sign paper contracts, save all kinds of other legal papers, and still use paper money. In the US, people even use paper checks, which disappeared in Europe in the early 90s. The reason we use paper is because it is indivisible and hard to forge. There are electronic contracts and signatures, but they are still within walled gardens (be they areas of use, such as credit cards, or areas of geography, such as countries), and there are many societal institutions (lawyers and government institutions, for instance) which change only slowly. Many parts of society also want to protect paper as a legal entity – customs offices, for instance, use lots of paper in many countries, less out of habit than because inertia in customs protects domestic producers.

Paper as a legal vehicle will disappear only gradually – we will still have paper money, for instance – but increasingly paper will be the exception rather than the rule. A combination of legally binding public databases, reduction of need for contracts (for instance through simplifying transactions below certain thresholds, much like people leave pennies in the store) and pioneering work by private actors (such as eBay and PayPal) will reduce paper's role as a legal vehicle.

### **Paper as communication**

Paper is used for communication today – just check your mailbox. But this, too, shall pass: More and more people get their news online, we communicate electronically with friends and relatives, and find new products and services online. Gradually, most of what the Post Office delivers (at least on paper) will be things you have not asked for and mostly do not want. In Norway, people still receive a phone book – but only because the company which has the (multi-year) contract on delivering them insist on doing it. Most people carry the phone book straight from mailbox to recycling bin. In ten year's time, we won't be using paper much for communication.

### **Paper as display**

Paper as display, in pure form, is when you print something you have received electronically because it is easier to read on paper than on screen. This is common now – more than you think – but will also disappear, mostly thanks to environmental concerns and larger monitors. Flat-screens are ever cheaper, and having two or more on your desk is no longer reserved for developers and CEOs. A number of studies (some of them, admittedly, financed by computer monitor manufacturers) show that larger and multiple monitors increase productivity. Since documents increasingly contain information elements that cannot be displayed on paper (video and audio snippets, hyperlinks) they will have to be read on screen.

The environment is less a driver than an excuse to hasten this evolution – an increasing number of the emails I have receive have “Before you print, think about the environment” in their SIG lines.

### **Paper as portability**

Paper is so very portable. A book, a newspaper or a printed document is easy to carry, scribble on, read on the bus, and throw away when done. A notebook (preferably expensive, preferably moleskin, it seems) is easy to carry and easy to use. Even though computers with pen functionality as easily available, they have not taken off (though myself I am a tablet PC enthusiast, having used one since 2003.) Electronic note-taking is still too expensive, too cumbersome and has too limited battery capacity to be practical for the unwashed masses.

Replacement for paper as portability will come, driven by mobile communications. With ubiquitous, wireless access and better cellphone/handheld technology, the information access and communication aspects of electronic note-taking will overpower the portability and simplicity issues. A moleskin cover would help, though.

This is an area where schools could lead the way: If given half a chance, most students would prefer having their books in their iPods or cell phones rather than schlepping them around in backpacks. It won't be the students holding up this development – rather, it will be the publishing industry, which is queuing up to take the recorded music industry's role as chief Luddite to the world.

### **Paper as status symbol**

Paper confers status. Thick binders in the office signal productivity. Lots of books in living room and office signal education and expertise. But this, too, is changing. People read paperbacks and throw them away. Once upon a time, a leather-bound encyclopedia could be bought and displayed as a token of learning and competent parenthood, but not even interior designers use books any more – just check out the most recent IKEA catalog, where the living room now sports a sleek Mac, perfect for compact living.

### **Paper as metaphor**

Gutenberg's first bible does not look like a modern book, but as a cheap version of a calligraphed bible, since that was how books were supposed to look back then. A few hundred years later, and books had evolved into something easier to read and easier to make.

And here we have perhaps the most formidable obstacle to the paper-less office: Paper as metaphor. Today we do most of our work electronically, but we still send documents to each other, still have a desktop as our desktop, with a paper basket (sometimes patented) in one corner.

Only when we get rid of the paper metaphor will we release the productivity inherent in the electronic workspace. E-mail, for instance, is ineffective because it is nothing more than automated memos – its chief benefit being that those who started their career in a paper-based world understands the concept. The younger generation, however, have let go of the paper metaphor and communicate through shared personal spaces (such as Facebook), share hyper-documents (wikis) and fast written media (chat, Twitter). As they enter the workforce, they demand the same type of tools, making large companies now experiment with Enterprise Facebooks, Twitters, Nings, wikis and chatting. We of the elder generation still write blogs....

Think about it – how much of the time you spend making a report or other work document is spent fiddling with paragraphs, headings and illustrations to fit a paper format? Whereupon you send it, electronically, to colleagues who may or may not ever commit it to paper.

Time to end this. This article, too, is limited by paper thinking. It was originally written for a newspaper, and the editor wanted to limit it to 6800 characters. That actually forced me to stop in the middle of a sent

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