

the virtually paperless office

Paper. It's the flotsam and jetsam of modern bureaucracy, but it can also be the vehicle for vital business agreements. It's not particularly friendly to our environment, and technologists have told us for years that we can do without it. But are we willing to let go of paper entirely?

Since the explosion of personal computing and email in the late 1980s and early 1990s, the production and use of paper has grown exponentially, rather than slowed. The State archives are a testament to the Government's love affair with paper as a record format over the last 215 years, and there's more on the way.

Software developers have attempted to entice us into greater use of electronically presented information by coming up with virtual paper and electronic 'post-its', with limited success. They claim to provide the readability and navigational features of their paper counterparts, but users are still choosing to print to paper.

Abigail Sellen and Richard Harper, in their book *The Myth of the Paperless Office*, (The MIT Press, 2002) suggest that paper offers us several things that online information cannot, not only for reading purposes, but for collaborative work, drafting and other information-based activities. Sellen and Harper employ the notion of 'affordance' to test their ideas.

'Affordance' is the idea that sometimes it is the physical properties of a thing that suggest its use. For example, a pointed object 'affords' piercing. The authors asked: what are the physical properties of paper? What uses do these properties 'afford'? And conversely, which uses does paper definitely not afford?

To find out, they looked at information workers in fields as diverse as medicine, the law, business administration, policing, air traffic control and real estate, and studied their behaviour and use of various media when they were drafting, collaborating, sharing and reading information.

Not surprisingly, Sellen and Harper discovered that it is combinations of paper and digital technologies that best support information workers. Some of the things

that people love about dealing with paper are: marking up (adding handwritten notes to documents); laying out (arranging paper on a desk, to order work and trigger reminders); and flexible navigation (using both our eyes and hands to move through and around a book or document).

They also found that some record creation events, such as the completion of a crime report by a police officer interviewing a victim, were not suited to digital technologies, because of the difficulties experienced by officers in attempting to watch closely and respond to an often distressed and confused victim while taking notes.

Sellen and Harper stress that these results do not mean that we should return wholesale to a use of paper. Paper simply cannot meet our demand for instant and shared access to information. Nor is it a sensible solution to print electronic records for long-term retention as, for example, State archives. The original, electronic document is the record of Government business, and it is that format which is now retained.

The authors argue, instead, that organisations must first understand how and why paper is useful in business processes and then design their technological infrastructures accordingly. They suggest that scanning of handwritten notes and annotated documents will become more commonplace as a means of enabling access and long-term retention of these records in digital form. Technologies, such as optical character recognition, will allow the scribbled note to be more easily captured and, so, reduce the 'double handling' involved in transcribing. They argue against the disappearance of printers from offices, where workers achieve greater productivity and real quality improvements by using and working on printed out works-in-progress.

Ultimately, the message of *The Myth of the Paperless Office* is this: paper is an excellent temporary medium for our thoughts, our plans, our shopping lists, our comments or our doodles. Use paper, recycle it, but have it complement rather than replace the use of digital technologies that can make our 21st century business and personal lives so much easier.

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