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# THE DIGITAL LIFE



Memory man: Microsoft researcher Gordon Bell has spent seven years using a digital recorder and camera to capture and process every last detail of his life

## Total recall becomes a reality

Technology to record what we see, say and surf is set to transform society, says **Graham Jones**

**G**ordon Bell has a perfect memory, which isn't bad for a man of 72. In fact, you can ask him about a phone call made five years ago and he can let you know, word for word, the exact conversation. Want to know what coffee cup he drank from at a meeting in 2001? He can tell you and describe it with complete accuracy.

Bell can quickly and easily recall any aspect of his life and work for the past seven years. Sounds a remarkable fellow, doesn't he? But other than the fact that he is a highly qualified computer scientist he is no different to you or me – except for one thing. Bell uses a range of technologies to record everything he does, every day. The result is that everything he has done in the past seven years – as well as his lifetime's work – is stored digitally and is therefore immediately accessible. Gordon Bell is a "lifelogger".

"It allows the filing of everything that can be accessed or transmitted," says Bell. "It reduces the clutter of physical information. It allows the computer to be a surrogate, a partner to help retain my history and, in a sense, keep me honest."

The key tool in this project is the "SenseCam", a tiny digital camera that Bell wears around his neck throughout the day. It snaps away automatically, taking a picture every 20 seconds or so. Bell also wears a dictaphone that takes continuous sound recordings. His phone is hooked up to his PC, with every phone call automatically recorded. His radio and TV are also connected to his computer, storing a record of everything he watches or listens to. Gordon hasn't deleted an email for over six years – these, too, are squirreled away on his computer, providing a complete record of all his electronic correspondence.

Documents, from his graduation certificate to his electricity bills, are

### HOW TO MAKE YOUR OWN 'LIFE LOG'

You don't have to be a world-renowned computer scientist or a Microsoft guinea pig to digitise your life. There are several ways in which you can create your own "Memex" to store your memories and log details, offloading your human memory to a digital space.

Already, for instance, many people take more photographs than they would have done in the past. Until the invention of digital cameras and mobile phones with camera capabilities, most people merely took pictures on holidays or at family events, like weddings. Now, many snap away with their mobiles or pocket cameras, storing the most mundane of shots forever. Keep them somewhere like Flickr (flickr.com) or PhotoBucket (photobucket.com) and you can access your

memories from anywhere.

Similarly, cheap digital voice recorders mean you can record all your meetings, saving the audio files and even converting them to text using speech-to-text software available in high-street computer stores. Some people do the same with handheld computers and PDAs that allow them to record conversations easily.

With a blog, such as Blogger (blogger.com), Livejournal (livejournal.com), MySpace (myspace.com), Bebo (bebo.com) or Twitter (twitter.com), you can record a journal of your daily life, noting down even the minutest little details. You could even keep a video blog on YouTube (youtube.com). If you don't want to do that publicly there is a plethora of "journaling" software available,

such as Microsoft Notes.

You can create your own memory bank of video, sound and other data at your own MySpace page. You can store your contacts list at somewhere like MyYahoo! (myyahoo.com) And if you're worried you might forget any legal aspects of your life, such as your National Insurance details, the PAOGA service (paoga.com) lets you securely store important documents and information online.

Taken together, such tools mean you can store your life in cyberspace and recall information and visual records at the click of a mouse. All you would need is your own dedicated web page that connected all the bits and pieces of your life together. You could then access your memories wherever and whenever you wished. **GJ**

converted into digital form and stored in cyberspace. Software records details of every website he visits. When he's away from his computer, Bell uses a Pocket PC, storing information on it when he's on his travels and syncing it up to his main computer when he is back home or in the office. He can even tag everything with location details, thanks to a Ricoh GPS device he carries with him that tracks his journeys.

Far from being a crackpot, Bell is carrying out this experiment on behalf of Microsoft. Based in San Francisco at Microsoft's Bay Area Research Centre, he is a participant in the computer giant's "MyLifeBits" research project (tinyurl.com/yuw2b4). This is a

modern-day attempt to fulfil the vision of Vannevar Bush, who in 1945 came up with the idea of a device called a "Memex" – effectively an extended memory, something that would record our life accurately without us having to worry about it.

**W**hile Bell is a willing and enthusiastic guinea pig in the experiment, aren't some of the people he comes into contact with a little nervous about the idea of their conversations and interactions being immortalised in electronic form? "In a few cases, there was a fear of not knowing where the content would end up, so I happily turned the recording

off," he says. "But when I am in 'capture everything' mode, people quickly forget that interactions are being recorded."

"I try to explore the use of these devices with the goal to understand possible usage. When the device becomes a burden, I don't use it."

Bell's colleague, Jim Gemmell, has helped developed the technology by which his memories can be knitted together in the memory bank. Gemmell has used a simple database language called SQL to connect everything, and believes that the constant collation of information could have important applications in the future.

"We hope to see an impact on many areas," he says, "but especially science, education and health. Scientists and students will be better enabled to acquire and reflect on knowledge. We will enter an era of quantitative health, where bio-monitoring takes away the guesswork and spots trends before they become problems."

What Gemmell envisages is a massive memory system that will lead to huge improvements in our lives, and in society. Take health, for example: a monitoring device could record every biological event, providing a huge databank of information that your GP could access without any need for an in-person visit, recommending appropriate medication or even starting pre-emptive treatment of illnesses before they develop.

In a wider, societal sense, MyLifeBits clearly has huge potential. "We have used the system to refresh our memories, prove our points, and just reminisce," says Gemmell. "It has been life-changing. For example, I couldn't now imagine being without recorded copies of all the web pages I visit, and my web-browsing habits are changing by knowing I have that."

The era of effortless total recall may soon be upon us.