

INNOVATION & TECHNOLOGY

This Is Your Lifelog

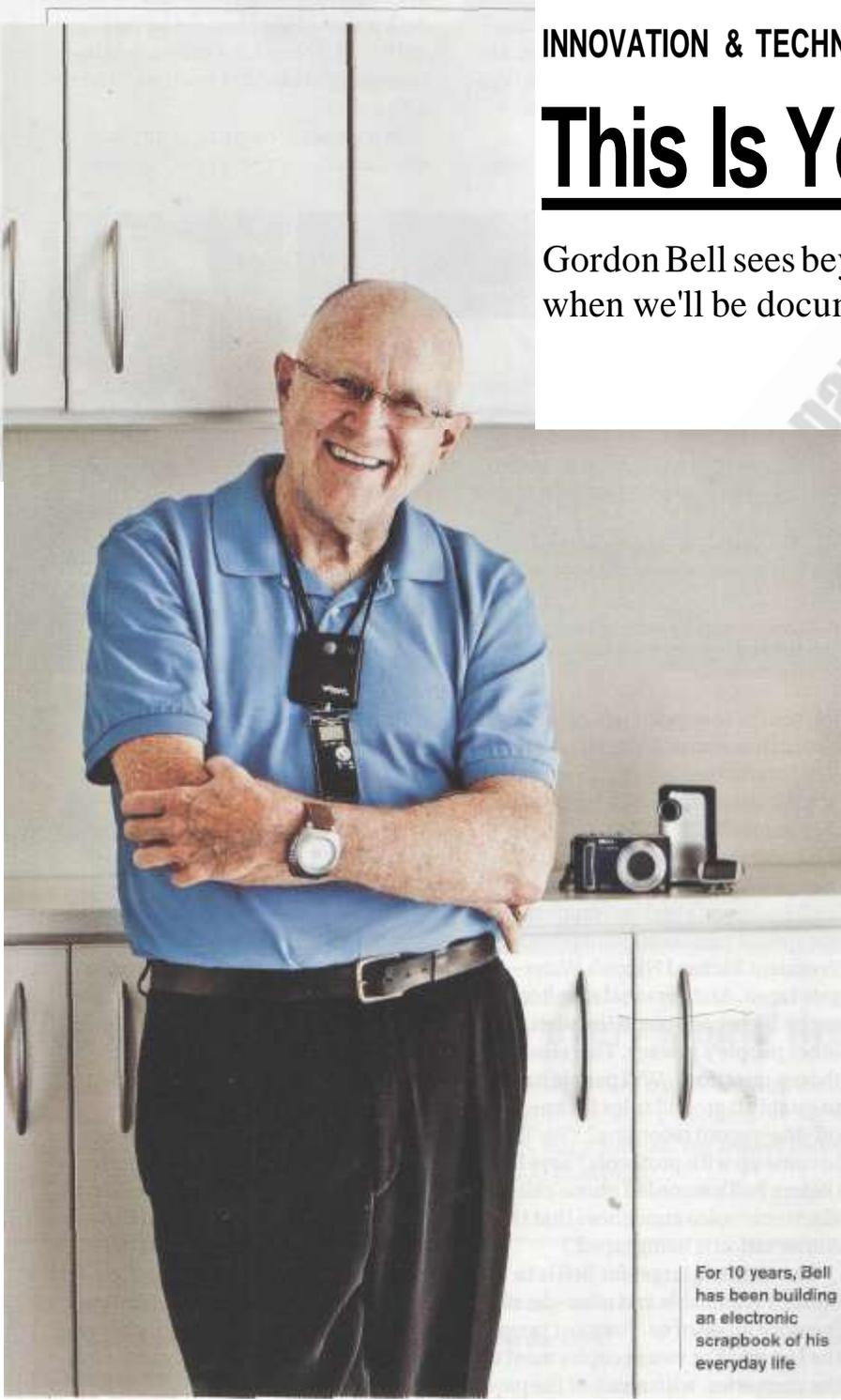
Gordon Bell sees beyond the Twitterverse, when we'll be documented in digital detail

By Stephen Baker and Arik Hesseldahl

Gordon Bell, a 75-year-old legend of computer science, strolls around the San Francisco offices of Microsoft Research wearing what looks like a heavy black necklace. It holds a camera the size of a deck of cards. It's called a SenseCam, and it snaps photos every few minutes, or whenever a change of light signals that Bell has stepped into a different room. Sometimes Bell reaches down and takes a picture himself. One more image for his enormous memory bank.

For the past 10 years, Bell, a senior researcher at Microsoft, has been leading the life of a digital pack rat. He has been recording the twists and turns of his existence and storing all this information in vast digital files. Bell takes pictures and records his phone conversations. He maps the path of his footsteps and scans every shred of paper worth saving. All this effort is to build an electronic memory, a digital adjunct to the faulty and often delusional one between our ears. In an engaging new book, *Total Recall*, which Bell wrote with colleague Jim Gemmell, he argues that growing numbers of us—strange though it may sound—will soon be following his lead.

It would be easy to dismiss Bell as an outlier. Even with technical help from Microsoft, the digital docu-



For 10 years, Bell has been building an electronic scrapbook of his everyday life

menting of a single life—"lifelogging," Bell calls it—is immense work. Yet Bell, a key figure in the development of microprocessors and the Internet, points out that millions are already pouring their lives onto social networks and Twitter. He says that lifelogging "is the next step."

Technology is evolving to support his case. Millions of us already carry a rudimentary lifelogging tool, the cell phone. And as phones add more features, from video cameras and e-mail to global positioning technology,

bypass operations, has analyzed his own data to draw correlations between his diet, exercise, and symptoms of angina—and to fine-tune his regime. Esther Dyson, a technology commentator (and an Evernote board member), predicts that markets will open for software to "extract order and meaning from the chaos of proliferating data."

In many areas, electronic memories could provide lifeloggers with an edge. Already, parties in divorce or workplace harassment suits use location data from cell phones and electronic

largely fading from our minds. Entire months, or even years, can be reduced to a few dinners, trips, or songs. But a record such as Bell's brings back every hour and every encounter. In his book, Bell points to Cathal Gurrin, a lifelogger at Dublin City University who has in a rotating digital photo album on his desk a shot of the moment he met his girlfriend. "Not that I knew she'd become my girlfriend at the time," Gurrin tells Bell.

In a sense, lifelogging is already afoot inside corporations. Faced with

THE TOOLS OF LIFELOGGING

Pioneers such as Gordon Bell use new gadgets and Web sites to record and measure their lives.

NAME	PRICE	DESCRIPTION
Zeo	\$399	A monitor records brainwaves and charts the patterns and quality of each night's sleep. A Web service helps users optimize their Zs.
Bodybugg	\$199	Calorie-counting system mounted on an armband. It estimates energy burned; user has to record food consumption and upload it to the Web.
Livescribe	\$149– \$199	A digital pen that turns notes and sketches into image files. It also records the sound of conversations, meetings, and lectures.
Fujitsu ScanSnap Scanners	\$300– \$500	Copies important documents by turning them into digital files. Text-recognition software makes them searchable.

Data: BusinessWeek



Bell's goal is to create a searchable memory for everyone

their potential to record daily activities grows.

At the same time, companies are developing a host of specialized gadgets and Web services to sell to the growing ranks of self-observing datahounds.

A new sleep-monitoring device called Zeo provides a minute-by-minute record of each user's deep sleep and rapid eye movements. A pen-shaped gadget from Livescribe turns notes into digital images and records audio from conversations and meetings. And a popular data service called Evernote allows people to pile anything they read or see online in to a vast digital drawer. For some of the 1.5 million users, it amounts to a record of their intellectual life. "We want to be a permanent repository of your memory," says Evernote CEO Phil Libin.

One goal for the early lifeloggers is to track and optimize performance, from the bottom line to the waistline. Bell, who has undergone two heart

toll booths to supplement or contradict human memories. Data zealots could take this further by producing records of their conversations, e-mails, and dinner meetings.

Yet data could be used against those who collect it, too. Courts conceivably could subpoena lifelogs, much the way the special prosecutors subpoenaed President Richard Nixon's Watergate tapes. And personal monitoring by lifeloggers could threaten other people's privacy. This raises thorny questions. Will people have to establish ground rules for on- and off-the-record recording? "We'll have to come up with protocols," says Bell. (Before Bell's recorded phone calls, an electronic voice announces that the conversation is being taped.)

The ultimate target for Bell is to create a searchable and ultra-detailed memory for all of us. For most people, the last week or two occupies most of the memories, with much of the past

tighter tax, legal, and compliance regimes, companies are storing ever greater quantities of documents. But the march of digital data is bound to go much further, with each worker generating growing streams of information. Already, the Pentagon is looking into using such data to profile workers and soldiers and to teach others how to do their jobs. Similar research is taking place at tech companies, including IBM.

Of late, Bell has eased back on lifelogging. Microsoft opted not to develop its own suite of commercial lifelogging products given other priorities, so he and Gemmell moved on to other projects, such as building databases for cancer research. But even as he walks the streets of San Francisco, Bell still wears his Sense Cam and feasts on the data of his life. "Did you know," he asks, studying a lunch menu, "that there are only three calories in a seedless grape?"