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No Way to Run a Culture

Steven Meloon 02.13.98

LOS ANGELES - Civilizations have preserved their historical, scientific, and cultural heritage for thousands of years, with only the language and storage media changing in the process. Carvings in stone slowly evolved into clay and wood, then to paper and quill, and from there to the printing press, and finally to the computer hard disk.

While most consider digital data to be the ultimate repository of information, participants at last weekend's "[Time and Bits: Managing Digital Continuity](#)" gathering at the Getty Center, warned that in reality, society is courting disaster. Where stone tablets could be expected to survive for tens of thousands of years, a floppy disk or magnetic tape may only last 10 years. The hardware and software required to perceive or experience the information will be lucky to survive even that long.

"Time and Bits" brought together a group of forward thinkers to ponder the fate of our fragile cultural heritage in an increasingly digital era. The conference culminated Tuesday in a panel discussion, including such luminaries as conference co-organizer Stewart Brand, cofounder of The WELL and founder of the Whole Earth Catalog; Doug Carlston, cofounder and CEO of Broderbund Software; musician and artist Brian Eno; Wired magazine executive editor Kevin Kelly; Internet archivist Brewster Kahle; and Disney's chief of research and development, Danny Hillis.

On the academic side, Peter Lyman and Howard Besser, who jointly authored the gathering's background paper, represented the University of California, Berkeley's Information Management and Systems department.

Silent Spring revisited

Many of the conference participants liken themselves to the environmentalists of the 1960s and '70s and compare film maker Terry Sanders' recent documentary on digital preservation, *Into the Future*, to Rachel Carson's conservation landmark, *Silent Spring*.

"Historians will look back on this era," said Hillis, "and see a period of very little information. A 'digital gap' will span from the beginning of the wide-spread use of the computer until the time we eventually solve this problem. What we're all trying to do is to shorten that gap."

Brand said he sees the "Year 2000" crisis as a welcome wake-up call to the high-tech world.

"It alerts us to our civilization's sensitivity to computer-based issues," he said, "where a single decision made in haste - to store dates using two digits - can later threaten to produce financial collapses and plane crashes."

While some might see the World Wide Web as the likely solution to many of the participants' fears, Brewster Kahle pointed out that research at his Internet Archive foundation finds half of the World Wide Web disappearing every month - even as it doubles every year. As Kahle puts it, "the Net has no memory."

"The mean life of a Web page is about 70 days," he said, "it just goes away. And there's no one behind it. The traditional role of a library, taking care of things when the publisher isn't interested in it anymore - there simply isn't one of those yet."

"This is not a good way to run a civilization," Brand quipped.

Finding a way forward

There *are* plans afoot to find a better way.

Employing a two-pronged plan of attack, the recently formed [Long Now Foundation](#) suggests a trial run of archiving the 10,000 most important books in human history (a list to be determined - stay tuned for the debate). Striving for data longevity closer to what Babylonian lawgiver Hammurabi (c. 1,750 years before the Christian era) achieved on clay tablets than what digital technology can typically guarantee, the goal will be to find a way of preserving the texts for 1,000 years.

The first storage project will use current technology and will be distributed broadly (perhaps on the Net), while being recopied or refreshed with newer technologies in regular 10-year intervals. In this way, a document will be kept alive, exercised, reviewed, and annotated by people who care about it - providing ongoing meaning and cultural context.

The second storage approach will be an optically etched copy - placed on either mylar or stainless steel. This will be visually readable using a simple microscope, and will act as a primary standard against the evolving and annotated "living" copies.

Cultural loss natural?

Some argue that the loss of cultural information is a natural process, a means by which a society determines that which is

worth saving.

Musician Brian Eno agreed that "forgetting can be just as important as remembering" within the natural process of "cultural memory," but asserted "there simply won't be time for that selection process to occur, because we're building our castles on such unstable land."

In reality, digital archiving is already occurring at grass-roots levels. Various Internet "hobby tribes" have often spontaneously taken it upon themselves to develop emulation environments in order to maintain and resurrect obsolete videogame environments of eras gone by.

Kahle's [Internet Archive](#) is storing all the World Wide Web's mushrooming store of data (currently about 4 terabytes) at regular intervals.

Kahle brought along a four-monitor hardware sculpture that offered hypnotically flickering renditions of its massive repository. Ben Davis, of the [Getty Information Institute](#) and a co-organizer of the event, described the pre-conference arrival of the glowing monolith.

"I explained to the installation person that it contained the entire World Wide Web," Davis said, "and he said, 'Gee, I thought it would be a lot heavier.'"

The awareness conundrum

As with the original environmental movement, the issues are apparent and solutions are probably achievable. But simple awareness is often the real problem.

The technicians who might help provide solutions "are often involved in other things, and the people who care - librarians and archivists - don't always have the technological know-how," said filmmaker Sanders.

Disney's Hillis agreed. "We have the technical understanding and the materials," he says. "It just runs contrary to the digital culture to think about these problems."

UC Berkeley's Peter Lyman said he sees the problem as deeper than mere inattention.

"The computer industry often has built into it a planned obsolescence in order to create a cash flow," he said. "That's something that consumers can resist. They can demand that companies engineer software that is compatible with their earlier versions."

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