



Out of mind, out of sight, gone forever

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Our history - records of vast historical, legal, social, personal and economic significance - is at the mercy of the elements, crooks, obsolete technology, the push for a paperless society, ignorance and mishaps.

A book with an ants' nest inside. Mouldy video tapes. Melted audio cassettes. Tangles of tape ribbon. Obsolete punched paper tapes. Warped records and discs.



CSU Professor of Library and Information Management, Ross Harvey.

Our history - records of vast historical, legal, social, personal and economic significance - is at the mercy of the elements, crooks, obsolete technology, the push for a paperless society, ignorance and mishaps.

All are part of a bizarre collection of botched record keeping devices hoarded by Charles Sturt University's Professor of Library and Information Management Ross Harvey.

This constant reminder of the mortality, vulnerability and fickle nature of media storing the records he has dedicated his career to safeguarding must be humbling.

Therein also lies his challenge and inspiration - protecting an amnesiac society, a society that is not looking after, or remembering, its past.

Simple mistakes like putting the wrong thing on the wrong shelf, entering on a magnetic field, leaving a briefcase in a hot car, spilling coffee, dropping things, trips and tumbles and saving a computer file in the wrong location - where it either can't be found or wrongly writes over another file.

Everyone's done it, but occasionally these errors result in catastrophe. Professor Harvey said American authorities had somehow lost the data that pinpoints exact locations of hazardous waste dumps.

He also collects horror stories of the consequences of letting our digital heritage disappear. In *Notes from a Big Country* (1999), travel writer Bill Bryson gave two startling examples:

"The Pentagon has mislaid - irretrievably lost actually - all but 36 of the 200 pages of its brief but exciting desert adventure [during the Gulf War]. Half of the missing files, it appears, were wiped out when an officer at Gulf War

Headquarters - I wish I was making this up, but I'm not - incorrectly downloaded some games into a military computer. (p. 175)

"I read in US News & World Report that the same computer industry that failed to notice the coming of a new millennium has equally failed for years to realise that the materials on which it stores information - magnetic tapes and so on - swiftly degrade. NASA scientists who recently tried to access material on the 1976 Viking mission to Mars discovered that 20 per cent of it has simply vanished and the rest is going fast." (p. 354)

Professor Harvey said other evidence of the dangers of neglecting this looming global crisis in information management abounds.

He lists four examples of how this problem threatens the accuracy, safekeeping and authenticity of vital electronic data.

- In 1975, the US Census Bureau discovered that only two computers on earth could still read the 1960 census;
- The computerised index to a million Vietnam War records was entered on a hybrid motion picture film carrier that can't be read any more;
- The bulk of the National Aeronautics and Space Administration's research since 1958 is threatened because of poor storage; and,
- Australia's earliest detailed seismic survey results - worth millions to mining, mineral and exploration interests - are in jeopardy as much of the data is stored on magnetic tape and there is only one machine left in the world, in London, which can read it.

Preserving paper used to be one of Professor Harvey's chief interests, until this more consuming problem loomed, with fears computer technology was failing to preserve an accurate record of our history. Historians are already worried about the popularity of email leaving no paper trail surrounding important events.

Remembering and preserving the past seemed relatively straightforward when it was stored in libraries, archives and other dusty collections. But in the digital age, the amount of information has exploded and deciding how to keep it, and which parts to preserve, is a challenge.

Now working as Charles Sturt University's first professor of library and information management, Professor Harvey says there are remedies against the posed dangers, but most of these were expensive and the work needs to be prioritised to get critical jobs done before it's too late.

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Professor Harvey said that because of the information technology revolution, records traditionally preserved on paper were now kept digitally.

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Professor Ross Harvey



"We've come to a crisis point where we depend heavily on electronic records and we have to find new ways to protect them or we're not only going to lose heritage and memories, but vital data needed to maintain our health and safety," he said.

"This presents worldwide dilemmas as to how we can ensure that electronic business, government and personal records that we have to and want to keep won't be lost when a computer is upgraded, or if someone deliberately or accidentally changes that data. There are pharmaceutical testing results, national defence and intelligence reports and mining exploration survey data being considered as examples of electronic records that could be in jeopardy."

He said the issue of preserving data had enormous implications for business if they had no copies or permanent records of business transactions.

"Hackers are getting into websites and data can be maliciously destroyed," Professor Harvey said. "Legally some business records have to be kept five to seven years, but if they're stored on tapes there is no guarantee they will last.

"Even poor quality newspaper will last a few decades and high quality paper can last five to 600 years, but with computers, the magnetic way of recording means tapes will disintegrate fast after five to 10 years.

"The computer drives needed to read the tapes are also quickly outmoded ... eight-inch floppy discs are really rare now and you don't easily buy a PC for a five-and-a-quarter inch floppy disc now. The present generation is for three-and-a-quarter inch floppy discs and CD-ROMS."

Professor Harvey said a lot of work was being done on good storage conditions, such as controlling temperature and humidity, to make tapes last longer. Even so, it might only extend the life of the tapes to 20 or 30 years, whereas ordinary paper easily lasts a hundred years.

Because of the vast amount of data stored digitally, it's also not feasible to simply print out the information and file it away for safekeeping, he said. Many specialists are working on preserving information by designing ways to manage electronic data migration - transferring data from one system to an updated model.

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"We still have to address questions such as who takes responsibility for this preservation," Professor Harvey said.

"Even a lot of academic and scientific journals are now published electronically. If the online publisher goes out of business, who takes responsibility for keeping that information? Currently the publishers are not letting go of that control. There are a whole lot of legal and copyright questions."

An international team of archivists and library professionals is addressing the dangers identified in the InterPARES Project - the International Research on Permanent Authentic Records in Electronic Systems. Professor Harvey is part of the four-member Australian InterPARES team, and as such attended the project's conference held in Canada in February 2000 their concerns.

Ed. For more information on the InterPARES project, see the [project website](#).

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