Preserving the Digital Past: The last five generations of electronic records have been lost forever, says UBC expert Luciana Duranti, who heads an international team working on ways to save government and business computer records for posterity.

Peter Wilson, Sun Net Works Editor . The Vancouver Sun ; Vancouver, B.C. [Vancouver, B.C]25 Mar 1998: D6 / FRONT.

ABSTRACT (ABSTRACT)

Now [Luciana Duranti] is the head of an international team -- including representatives of the archives of Canada, the United States, Italy, the Netherlands, Sweden, Ireland and the United Kingdom -- working on ways to preserve our past in an age of computers.

Duranti and her colleagues at UBC have come up with rules for creating reliable and authentic records. Even the U.S. defence department called on Duranti's research team to help it develop methods of preserving electronic records.

Here's where Duranti's field of expertise, diplomatics, comes into play. This system -- developed in the 17th century by Benedictine scholars defending their rights to property accumulated over centuries -- identifies hundreds of components of each record.

FULL TEXT

Computers have made it a snap for governments and business to create records.

A tap on the return key and everything is preserved electronically -- e-mail, spreadsheets, documents, relational data bases, the exact reasons why Linda got that promotion to vice- president, and just how that fishing treaty with Iceland was negotiated.

It's all there. But for how long? Not very, if our immediate past is anything to go by.

We've already lost the last five generations of electronic records, says professor Luciana Duranti of the University of British Columbia's school of library, archival and information studies.

"And the few we have cannot be proven reliable or authentic. It's a tragedy."

Duranti, an expert in the science of authenticating records, called "diplomatics," says digital technology has given us record- making systems but not record-keeping systems.

The rapid obsolescence of technology -- in which operating systems and storage media disappear almost overnight -- has combined with scattershot storage methods to leave us without the essential archives we need to track business and government decisions and how they were made.

But now Duranti is the head of an international team -- including representatives of the archives of Canada, the United States, Italy, the Netherlands, Sweden, Ireland and the United Kingdom -- working on ways to preserve our past in an age of computers.

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The next research step, to be completed in 2001 by the international group -- including experts in such fields as quantum chemistry, mathematical computation and computer engineering -- is to make sure the now-authentic records are themselves saved from oblivion.

And this isn't just something for governments. So concerned is business about these matters that there are representatives of the biochemical, pharmaceutical and mining industries on the team, which begins its work April 1.

After all, keeping good and authentic records of, say, toxic waste dumps or of pharmaceutical notebooks during the development of new drugs is essential.

In the electronic era, Duranti says, records, even those connected with the same decision, are no longer kept all in one place.

Instead, bits and pieces reside on someone's a hard drive here, in a fax there, on paper, in microfiche, perhaps even in a relational database. And there's rarely any way to pull them together once they've been electronically scattered.

"Let's say one of the people who reports to me deserves an increase in salary," Duranti said. "I send an e-mail to the person in human resources in this office, saying I think that such-and- such has done a good job, can we raise his salary? And then she would send a message in e-mail to human resources in the central office. And on it would go from there."

Parts of this dossier would be in Duranti's hard drive, in the human resources hard drives, in the budget and planning hard drive.

"And they'd never be connected. So, how would we ever know what the decision-making has been and how choices have been made?"

Then there are problems of obsolescence. Electronic records don't have a long shelf life. Floppy disks, for example, become outdated as better storage media, like CDs and DVDs, are developed.

As well, the architecture of the operating systems that created the records come and go.

"So, in order to keep these records you have to transfer them to a new environment. But when you do that you may

lose up to 40 per cent of the information.

"And, in fact, depending on what sort of records they are, you lose the ability to authenticate them, to prove by whom they were generated and why."

Duranti says that, before computers, the best way to make sure government and business records were preserved for posterity was simply to put them away somewhere and forget about them.

When archivists stumble across them generations or even centuries late, there the records would be, filed neatly in dossiers in which documents conveniently referred to one another.

"In the past the best clue to understand whether a record had been destroyed within a dossier was the intellectual relationship between the remaining records," Duranti said. "You'd say, `Wait a second, this doesn't make sense. Something is missing here.' "

Now, when records are forgotten they're on a medium that will soon become obsolete and they likely don't connect to one another. Nobody is going to be able to piece them together in the future.

So, what's the solution in the electronic age?

For one thing, Duranti says, there should be a central authority, a neutral third party, within any organization, large or small, government or business, that would make certain that when each record is created it is automatically categorized by its components and, ideally, stored centrally.

Here's where Duranti's field of expertise, diplomatics, comes into play. This system -- developed in the 17th century by Benedictine scholars defending their rights to property accumulated over centuries -- identifies hundreds of components of each record.

"It allows you a level of analysis essential to electronic records which can be placed randomly in memory, with every bit and piece in a different place," Duranti said. "But if you know what the necessary components of a complete record are you can then design a system that automatically links them together."

As well, the organization would develop rules as to who had access to exactly what records and under what circumstances.

Once such a system is established then the methods of preservation can be arrived at.

With textual records created on word processors, the best thing to do might be to simply print them out.

"You don't lose anything, really," Duranti said.

However, a recent court decision in the U.S. held that printouts of records made or received electronically aren't evidence. The actual electronic form has to be presented in court.

With electronic records, then, there has to be a system of "continuous maintenance, monitoring, auditing and control."

And that means, in essence, that, as with individual computer owners, regular backups be made. If a new medium or operating system comes along, then the records have to be transferred and preserved.

For an introduction to the research by Duranti on this subject you can go to http://slais.ubc.ca/users/duranti

Illustration
Graphic/Diagram: Victor Bonderoff, Vancouver Sun / Computer with a file drawer replacing the screen. ;

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