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E-mail from the grave? Microsoft seeks patent on 'immortal computing'

By TODD BISHOP
P-I REPORTER

In this culture of instant information, some Microsoft Corp. researchers are pursuing a radical notion -- the concept of saving messages for delivery in decades, centuries or more.

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[Read Microsoft's immortal computing patent filing.](#)

The project, dubbed "immortal computing," would let people store digital information in physical artifacts and other forms to be preserved and revealed to future generations, and maybe even to future civilizations.

After all, when looking that far in the future, you never know who the end users might be.

"It is definitely a long-term project," said Andy Wilson, the Microsoft researcher whose musings on the ephemeral nature of digital information inspired the research initiative.

One scenario the researchers envision: People could store messages to descendants, information about their lives or interactive holograms of themselves for access by visitors at their tombstones or urns.

And here's where the notion of immortality really kicks in: The researchers say the artifacts could be symbolic representations of people, reflecting elements of their personalities. The systems might be set up to take action -- e-mailing birthday greetings to people identified as grandchildren, for example.

The previously undisclosed project came to light through a newly surfaced patent application in which the researchers explain some of the concepts they're exploring. The project seeks to address the fact that large amounts of valuable information are stored on media with limited life spans, in formats that could be rendered obsolete. Consider how quickly floppy disks disappeared.

But the researchers aren't just thinking about the informational legacies of individuals.

"Maybe we should start thinking as a civilization about creating our Rosetta stones now, along with lots of information, even going beyond personal memories into civilization memories," said Eric Horvitz, a Microsoft principal researcher who also is working on the project.

Where the project will end up isn't clear. In some cases, Microsoft Research projects ultimately lead to products, or contribute to them, but in other situations they don't. The researchers declined to say whether they have a working prototype of an "immortal computing" artifact.

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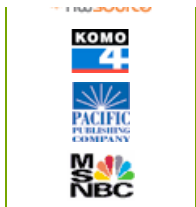
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This is just one of multiple projects for each of the involved researchers. But the patent application, filed in June 2005 and made public this month, at least shows that they've given the concept of "immortal computing" considerable thought.

Among other things, the filing describes the potential use of durable data storage, such as advanced imaging techniques, to make sure the information survives over time. One key will be to avoid storage devices that require movable -- and potentially breakable -- internal parts.

The filing says the information could be retrieved through a separate interface, independent of the individual artifact, in part to allow the method of display to evolve with changing technology. People who store information would be able to decide in advance when and to whom it would be disclosed, using DNA or biometrics to confirm identity.

The application also cites the potential use of alternative energy, such as thermal or inductive power, to run the interface.

The artifacts also would be designed to make the process of accessing the information clear, in case those who discover them aren't sure just what to do with these strange objects from the 21st century. Among other things, the patent application cites the possibility of accompanying instructions, in multiple languages or hieroglyphics.

In that way, the instructions would be "self-revealing," the researchers say. The concept is similar to the symbolic instructions with the Golden Record on board the Voyager spacecraft launched in the 1970s -- they gave details on how to build a player for the record, which contained greetings in various languages.

To be sure, the Microsoft researchers aren't the first to see the growing need to preserve information in the digital age.

One existing online approach is called the Handle System. Launched more than a decade ago, it assigns unique identifiers that, unlike traditional Internet addresses, can be used to find online information and media even if they're subsequently moved. The system grew out of the work of Bob Kahn, the technology pioneer who was separately responsible for the system design of the Arpanet, the forerunner to today's Internet.

"I'm delighted when anybody takes interest in this," Kahn said in an interview last week, when asked about the Microsoft Research project. "More and more information is being generated, and everybody, whether it's a corporation or individual, from time to time wants to go back and find something and they don't know where to look.

"I think there's a generic issue here that's really important for the future," he added. However, he said, there's no reason that the Handle System by itself can't be used to reference any type of informational resource.

And the fact that Microsoft has applied for a patent could raise eyebrows in the industry.

"I think it's great that they're pursuing it. If they feel like they have to patent it in order to pursue it, I guess that's a business decision they have to make," said Mark Anderson, publisher of the Strategic News Service technology newsletter. "But I would hope they wouldn't try and do it in a way which would preclude others doing the same thing."

The Microsoft researchers talked generally about their project, but the company says it doesn't comment on pending patent applications, as a

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policy.

Anderson proposed a similar concept several years ago at one of his Future in Review conferences, suggesting that someone offer an Internet storage and communications service that people could use to pass along vital knowledge to descendants, in a way that rarely happens today.

The Microsoft researchers say they also are interested in ways of preserving information online, not just in artifacts. At the same time, researcher Horvitz said, there's something to be said for keeping the information in one place in some cases.

"The whole reason to go to a cemetery could be transformed," he said. "The idea of a locus in physical space where this information exists ... makes that much more of a meaningful location to actually travel to."

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