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INside

Microsoft's Smart Card Play

With Smart Card For Windows, Microsoft intends to lower card costs and introduce a standard operating system.

By Brian O'Connell

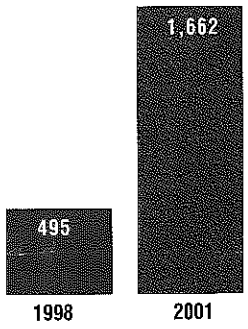
Microsoft Corp.'s knack for making wise bets at opportune times is why the company is on top of the computer world. It dumped the archaic DOS operating system for Windows 95 at a time when PC prices started plummeting. Microsoft then bet its entire future on browser technology just as Internet usage began to soar.

It remains to be seen whether Microsoft's entry into the smart card market will have as profound of an effect on the market as those previous efforts. But there's no question that the Redmond, WA-based company's participation will shake up the moribund smart card industry, particularly in the United States.

In The Cards

Despite the lack of a standard operating system, issuance of chip-based cards in the U.S. is expected to explode by 2001. By then, the focus will shift from closed to open-system cards.

Number Of Smart Cards Issued In The U.S. (In thousands)



Source: Forrester Research Inc.

Three months after Microsoft announced its Smart Card for Windows rollout, the news still reverberates throughout the smart card world. Of course, there are cutting-edge technologies like MasterCard International's Multos operating system, Visa International's Visa Cash and Sun Microsystems Inc.'s Java Card. But none of these organizations have the power to move entire industries the way Microsoft does.

Indeed, while many of the existing smart card programs have focused on stored value applications, Microsoft expects its card technology to cover the industry like a blanket, providing secure network authentication, secure corporate transactions, such as online banking and electronic cash. Already key smart card innovators have signed on to the Microsoft effort. CyberMark, a Tallahassee, FL-based smart card developer, will test the card at customer sights across the U.S., with key customers like Florida State University, Villanova University and Huntington Bank participating in the pilot project.

"We first looked at the smart card market three years ago, and the economic model just didn't exist," says Mike Dusche, Microsoft's Windows Card product manager. "When we looked at it again, we recognized that there's a tremendous opportunity for using smart cards to provide security in corporate networks. Beyond that, smart cards can be used to provide security for buildings, or to store personal information. We recognized that if we could get the cost of cards down to $2 from about $30, and the price of readers down to $30 from $200, people will pay for that infrastructure to improve the

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State Farm, Nordstrom

Priming The

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developed by Digicash, is an important and inevitable payment solution in the world of global electronic commerce."

Loftesness told the *San Francisco Chronicle* in a recent interview that he believes eCash was ahead of its time. "Everybody feels [electronic cash] is going to happen," he said. "It's just a question of time, money and the participation of some big banks."

Bank bows out

But given the experience of St. Louis-based Mercantile Bank, the only U.S. bank to use eCash as part of an experimental pilot, it may be a long time before another U.S. bank gives eCash a shot.

"We dropped eCash because it was not popular with our clients," says Larry Kirschner, senior vice-president of the St. Louis-based bank. "I think that credit cards proved to be much more popular than eCash, or at least more than Digicash expected." Mercantile inherited the eCash pilot when it acquired Mark Twain Bank in 1996. "Those people [who green-lighted the eCash program] are no longer with the company," Kirschner says.

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>
> *Larry Kirschner*
> *Mercantile Bank*

Industry observers agree with Kirschner that consumer interest doomed Digicash's future in the U.S. Lack of customer attraction made the decision easier for banks to bypass the technology, coupled with growing increasingly skittish over security issues surrounding the technology.

"It's an example of security and encryption experts developing an electronic payment system rather than payment systems experts developing it," says David Stewart, vice president of Norcross, GA-based Global Concepts Inc., a research and consulting firm specializing in electronic payments. "Was there a market for this type of product? No."

is that the technology would comprise the at-home ATM machine—disposable money when you needed it," Stewart says. "But eCash, because it required the validation, couldn't function as a true cash product."

Shopping for a market

The concept of electronic cash—the ability to store value either on PCs using special software or on chip cards that can plugged into PCs—was fueled by fledgling Internet start-ups like Digicash and CyberCash Inc., a Reston, VA-based online payments technology firm. Both companies have carried the technology's banner, espousing the advantages of electronic money to consumers who want to shop online and to merchants eager to sell their products online.

The technology isn't complicated—money is downloaded from a bank account onto either a PC or a smart card. The advantage of electronic cash is that it can be used in the physical and online worlds. Consumers can use electronic cash to purchase books online at Barnes & Noble.com, or at Barnes & Noble's store at a local shopping mall.

Customers using electronic cash need a bank account with a participating bank that provides customers with e-cash software, complete with an account ID and set-up password. Consumers and banks were both attracted to the idea of using electronic cash in smaller, more nimble fashions. Transactions too small for credit cards, like buying a news article from Sports Illustrated Online for $1.50, were deemed perfect for the technology. Consumers also rallied to the notion that, with electronic cash, they could remain anonymous. Unlike credit cards, electronic cash transactions allowed the money to go straight from the consumer to the merchant, with a third party skimming some of the transaction fee, and without a computerized record of the transaction.

While consumers are understandably attracted to a technology that combines the ease of electronic cash with the safe anonymity of cash, banks harbor a different point of view. The inherent lack of security and ability to track electronic cash transactions is anathema to an industry that likes to track its customers' transactions and doesn't want the specter of digital counterfeiting to rear its ugly head.

"The more such innovations succeed, the less the public has to rely on central banks as direct sources of exchange media," says George Selgin, a University of Georgia economics professor. "This seems to me to be particularly obvious in the case of e-money."

Uncle Sam's support

Although bankers have their doubts, Uncle Sam is bullish on digital cash. So much so, political leaders say that the Federal Reserve Bank, which monitors currency flows and places a priority on keeping tabs on how money is used in the economy, should accommodate the technology and adjust its computer tables to include digital cash.

"I think anonymous digital cash, much like the use of regular cash, is an important part of commerce," Ira Magaziner, a White House senior advisor, stated in a September interview with *The Wall Street Journal Interactive*. "I think that the Federal Reserve and other institutions can adapt their systems to allow for online digital cash without disrupting their work."

That's music to the ears of Digicash rival CyberCash. Richard Crone, a CyberCash vice president and general manager of PayNow, the company's electronic check