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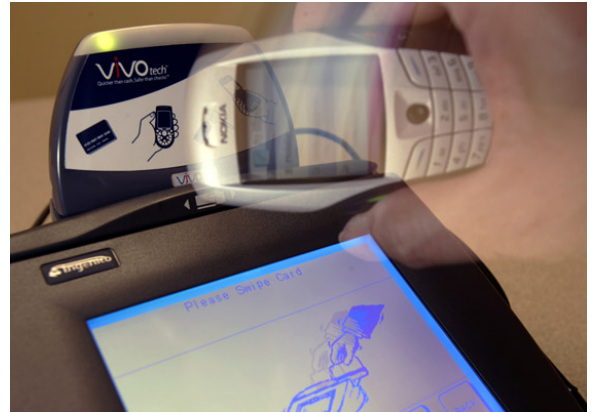
January 10, 2005

TECHNOLOGY; Momentum Is Gaining for Cellphones as Credit Cards  
By MATT RICHTEL

People already use their cellphones to read e-mail messages, take pictures and play video games. Before long, they may use them in place of their wallets.

By embedding in the cellphone a computer chip or other type of memory device, a phone can double as a credit card. The chip performs the same function as the magnetic strip on the back of a credit card, storing account information and other data necessary to make a purchase.

In Asia, phone makers are already selling phones that users can swipe against credit or debit card readers, in much the same way they would swipe plastic MasterCard or Visa cards. Trials are now under way to bring the technology to America, industry executives said.



Ron Brown, executive director of the Infrared Data Association, a trade group representing companies pushing the technology for cellphone credit cards, said that the new handsets could become "a major form of payment, because cellphones are the most ubiquitous device in the world." He added, though, that "cash will never go away."

Advocates say that consumers will readily embrace the technology as a way to pay for even small purchases, because it is less bother than taking a credit card out of a purse or parting with cash.

The impending changes to the cellphone happen to coincide with major shifts taking place in the banking industry. Since credit cards are still considered somewhat inconvenient, particularly for quick, small purchases, major credit card companies have developed "contactless payment" technologies for checkout counters that allow customers to wave their cards near an electronic reader without having to swipe the card or sign their name.

MasterCard, for example, has introduced a system called PayPass that lets cardholders wave a card in front of a reader to initiate a payment, much as motorists use E-ZPass and similar systems to pay tolls and ExxonMobil customers use SpeedPass to buy gas. Several major credit card companies issue PayPass cards; McDonald's has agreed to accept them at some restaurants.

And American Express announced late last year that it would have its system, ExpressPay, in more than 5,000 CVS drugstores by the middle of this year. Judy Tenzer, a spokeswoman for American Express, said the technology made it more likely that customers would use credit cards to pay for small items.

Cellphone makers are hoping these new payment systems will also make it easier to market handsets with credit card functions, although they could just as easily represent competition for the practice of paying by cellphone.

The marriage of cellphone and charge card poses some significant challenges, including security problems. To reduce fraud from stolen phones, consumers may be required to punch an authorization code into their phone each time a charge is made.

For more than a year, phone makers, software companies and computer chip manufacturers have been working to develop secure and reliable payment technology for cellphones. After the phone's chip is recognized by the electronic reader, the credit card account number will be verified, as it is now, and the price of the purchase will be added to the consumer's credit card bill.

The new phones may also be capable of being programmed for a prepaid sum from which payments could be deducted.

But there have been some glitches in the product trials, according to Jorge Fernandes, chief executive of Vivotech, a cellphone software company based in Santa Clara, Calif.

In two trials, one at a corporation in the Midwest and the other at Santa Clara University, Vivotech used infrared technology for communications between the phone and the card reader. Participants had to aim the cellphone at the reader in a certain way for the infrared beam to be picked up.

"People got very upset," Mr. Fernandes said. "Pointing your cellphone at a target is very difficult."

Mr. Fernandes said the company believed it might have solved that problem by switching to a technology that uses low-level radio signals. Last month, Vivotech began testing the technology, which allows users to wave the phone within a couple of inches of a reader, at a sports arena in the Atlanta area.

Cellphones are becoming mainstream payment devices in Korea and Japan. In Japan, NTT DoCoMo, the mobile phone operator, said that it had already sold more than a million phones equipped with chips that include the payment function.

More than 13,000 Japanese shops have electronic readers capable of communicating with the phones. For now, the phones are used mostly to debit a prepaid amount, which is deposited by plugging the phone into a machine similar to an A.T.M. that takes cash and credits the handset.

In South Korea, people are already using cellphones as credit cards, said Sue Gordon-Lathrop, vice president for the consumer products platform for Visa International. She said American consumers would eventually embrace these new functions, but acceptance could be slower than in Japan and Korea, where people are more comfortable with using phones for many purposes.

Also, she said, there are more cellphone operators in America, making it harder to set standard technology and business practices. "The phones are exciting, but it's going to be a long time" before a widespread base of merchants and consumers in America are equipped to use them, she said.

For now, some of the major American cellphone companies are monitoring the technology without committing to it. Jim Ryan, senior vice president of product development for Cingular Wireless, the country's largest cellphone provider, said the company was "closely watching" the progress in this field.

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