Review: Chip-based credit cards part of bigger change in payment system

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You may have gotten some new credit cards in the mail lately that look a bit different from your old ones.

That's no accident, but instead part of a big shift in how we make card-based payments. The new cards, notable for the gold-colored chips embedded in them, are designed to eliminate the most common form of payment-card fraud. But the move to the new cards may hasten the day when we don't use physical cards for payments at all.

The new cards store their account number and expiration date on their chips. When you make a payment with them, the chips transfer your account information and generate a one-time-use code to confirm that the card and account are legitimate.

That one-time-use code is part of what makes the cards more secure than their predecessors, the ones that depend solely on the magnetic stripes on their back to store information including a fixed security code. If the card's account information is compromised, criminals can easily create a counterfeit card by storing the stolen information on a blank or erased magnetic strip. Because the security code is always the same, the counterfeit card appears to be just as legitimate as the original.

Chip cards have been used in Europe for more than a decade. What has spurred their adoption in the United States has been the rise in fraudulent transactions due largely to large-scale hacking attacks that have compromised millions of payment cards at a time.

In order to accept a payment made with a chip card, merchants need to put in place new card readers that can accept them. More than half of all merchants likely won't have the new systems in place by the beginning of next month, according to Jason Oxman, who is CEO of the Electronic Transactions Association, the payment industry's trade group.

That date is important, because it's when responsibility for fraud starts to shift. Up to this point, the financial institution that issued the payment cards has been solely responsible for losses due to fraud. If a thief, after stealing your credit card or creating a counterfeit version of it, starts charging things or getting cash advances, the bank that issued your card is responsible for the charges.

Starting next month, the party responsible for swallowing losses will depend on who is using the more advanced technology. If a merchant can accept a chip card payment, but a consumer only has a magnetic stripe card because their bank hasn't sent them a new chip card, the bank will be responsible for fraud losses. If a bank has issued a chip card, but the merchant hasn't upgraded its card readers to accept chip cards, the merchant will now be responsible for fraud losses.

As before, we consumers won't be responsible at all for losses caused by fraud.

The shift in liability has been spurring merchants to upgrade their terminals. While many small retailers and restaurants don't yet have the new card readers, most of the largest retailers, who represent the vast majority of all payment card transactions, have already upgraded their systems, according to Oxman.

For you and me, the most obvious change the new cards will bring - other than their new look - is in how we use them to make payments. Instead of swiping a card's magnetic stripe through a payment terminal

reader, we'll generally have to insert the cards, chip first, into a slot.

The new cards will generally have a magnetic strip you can use at older payment terminals. However, if you try to swipe the magnetic stripe on a chip card at a terminal that can read the chips, don't be surprised if terminal prompts you to insert the card into its chip reader instead.

But the cards will likely entail two other changes that could affect us consumers. For one, they're expected to significantly cut down on fraud. According to Oxman, some two-thirds of all payment card fraud in physical stores was made using counterfeit cards. Because of the one-time-use codes they generate, the new cards are going to be much more difficult to duplicate.

Reduced losses due to fraud could be passed on to consumers in the form of lower prices. Even if that doesn't happen, the new chip cards should mean that consumers don't have to spend as much time scrutinizing their statements each month for fraudulent charges.

But the chip cards could have an even more significant effect on the way we purchase things. The same basic standard underlying chip cards also underlies mobile payment systems like Apple Pay and Android Pay. Because the technologies are so related, some 80 percent of all the new terminals that merchants are installing to accept chip-card payments will also accept mobile phone payments, according to Jordan McKee, a senior analyst who covers that payments industry for 451 Research.

The biggest problem with Apple Pay and its rivals to date has been the relatively few number of merchants that accepted them. Because of the move to chip cards, you've likely already seen a bunch of new places start to accept mobile payments in recent months. And you'll soon see a lot more.

So it could well be that the technology designed to make payment cards more secure could help end the era of using physical cards at all.

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A big change in the way we pay

Companies are issuing new chip-based payment cards to try to reduce fraud. But the move to the new cards is a big one for the industry.

More than $7 billion. The value of fraudulent payment card transactions made in 2014.

Less than $6 billion. The value of fraudulent payment card transactions made in 2013.

Two-thirds. The portion of payment card fraud that's due to counterfeit cards.

1.2 billion. The number of payment cards in use in the United States.

200 million. The approximate number of older payment cards that have already been replaced with chip cards.

600 million. The estimated number of payment cards that are expected to be replaced with chip cards by the end of the year.

8 million. The approximate number of merchants in the United States that accept payment cards.

45 percent. The estimated portion of merchants that are expected to have upgraded their payment terminals to accept the new cards by the end of the year.

80 percent. The portion of new chip-reading payment terminals that can also accept mobile payments.

-Electronic Transactions Association, EMV Forum, 451 Research

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