

payments system research briefing

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Change Is Coming: What the EMV Migration May Mean for Payments Innovation

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Technology constantly alters the ways in which everyday tasks are performed, and making payments is no exception. Growth in tablet and smartphone adoption and the increased popularity of card payments have led to many payments innovations that seek to improve the ways in which payments are made and received. In January, the 2015 Consumer Electronics Show had more than 3,600 exhibits; of those, 167 were classified as e-Commerce, while 156 were classified as Mobile Commerce/Digital Finance.¹ Another technological evolution is on the horizon—implementing chip technology in payments cards based on a global standard called Europay, MasterCard, and Visa (EMV). American Express, Discover, MasterCard, and Visa have each released roadmaps for migrating to a chip-based payments infrastructure in the United States by October 2015. This *Briefing* considers how the upcoming shift from magnetic stripe to chip technology may affect the survival of card-based payment innovations.

The Belated Arrival of EMV

Though some card brands began migrating to the EMV standard in the early 2000s, magnetic stripe payment cards are still the norm in the United States.² With magnetic stripe card technology, authentication involves using static information stored on the magnetic stripe (Punch 2013). Because some payment information—such as the primary account

number—never changes, stolen card data captured through processes such as skimming can be used by counterfeiters to commit payments fraud. In contrast, cards with an EMV chip use dynamic data: the chip creates a unique transaction code for each payment transaction. The ability to use dynamic data provides valuable security as a transaction is initiated and processed at a point-of-sale (POS) (Sullivan 2014).

In October 2015, the United States will begin the shift from magnetic stripe payment cards for POS transactions to cards that contain an EMV chip.³ The shift is not mandatory, however, so EMV cards issued in the United States will have both an embedded chip and the standard magnetic stripe. While merchants are being encouraged to adopt EMV-compatible POS technology, and issuers are being encouraged to issue chip-enabled cards, not all will have done so by the October 2015 migration date. Consequently, the effect of EMV on payments innovations based on traditional magnetic stripe cards remains to be seen.

Effect of EMV on Innovations for Merchants

Payments innovations for magnetic stripe cards typically target either merchants or consumers, and EMV migration may affect these groups in different ways. The proliferation of mobile devices, for example, led to greater innovation focused

on merchant acceptance of magnetic stripe payment cards. Nonbank providers such as Square, PayPal, Heartland Payments Systems, and others offer products enabling mobile phones and tablets to accept magnetic stripe payment cards. These innovations have facilitated card acceptance by merchants of all sizes, including those that otherwise would have been unable or unwilling to accept such payments given the complexity of the associated fees. According to a 2015 study, 15 percent of retailers surveyed reported they had mobile POS installed, 43 percent planned to implement mobile POS within the next two years, and 13 percent intended to pursue implementation sometime after two years (Boston Retail Partners 2015).

Intuition may suggest that payments innovations must become EMV compatible to survive. Though merchants are being encouraged to upgrade their POS equipment as fraud liability shifts from the issuer to them, considerations such as susceptibility to fraud, type(s) of merchandise sold, and chargebacks factor into their investment decisions. If merchants find the benefits of upgrading their POS equipment do not outweigh the costs, providers of magnetic stripe acceptance devices are safe from being shut out of the market completely. However, to remain competitive in an EMV card environment, innovators will also have to decide whether upgrading their POS equipment offerings is cost effective.

Heartland, which offers a tablet-based POS system called Leaf, has already announced its plans to halt future sales. While Heartland will continue to support existing users of its Leaf tablet, it cited the cost and complication of supporting hardware devices able to accept EMV compatible chip cards as the reason it will cease development of its Leaf hardware (Woodward 2015). In contrast, Square has announced it is developing a chip card reader in preparation for the EMV migration. Square's new reader will accept both magnetic stripe and chip cards and will work with iPhone, iPad, and Android devices. Square also plans to offer an accessory that will allow its iPad Stand to accept chip cards. Square says it will start delivering the chip accessory in early 2015.

Even with upgraded offerings, Square may face another—perhaps unexpected—challenge. The migration to EMV in the United States may open the door to competition by European companies such as iZettle, SumUp, and Payleven that, for years now, have created merchant acceptance products that use the EMV standard. The Payments Security Task Force, a cross-industry group focused on driving discussion to enhance

payment system security, has forecast that 575 million chip cards will be issued by the end of 2015, representing about 71 percent of credit cards and 41 percent of debit cards (Visa 2014). As EMV cards increase in the United States, European companies may find an opportunity to chip away at their U.S. competitors' market share. iZettle, for example, acknowledges that Square's EMV POS reader is more or less the same device iZettle has been working with for the past few years. At present, iZettle's stated long-term position is that the U.S. market is already overcrowded. SumUp has been equally reserved about its possible entry into the U.S. market (PYMNTS 2014). Yet both SumUp and iZettle raised millions of dollars of capital in 2014, \$10 million and \$55 million respectively, which could foreshadow plans for expansion.

In addition to innovations enabling physical acceptance of card payments, other innovations enable merchants to accept mobile payments. LevelUp provides POS terminal equipment and processing services that enable merchants to accept mobile payments in conjunction with a corresponding consumer component. Through a mobile application or "app," consumers can link a debit or credit card to a unique quick response (QR) code displayed within the app.⁴ When the consumer does business with a LevelUp merchant, the QR code becomes the method of payment. Merchants that don't intend to upgrade their POS systems for EMV payment cards do so knowing they will bear liability for fraudulent transactions associated with EMV cards. Continuing to accept LevelUp transactions will thus have little if any effect on these merchants. However, merchants that do plan to upgrade must soon decide whether to continue accepting QR code payments.

Effect of EMV on Innovations for Consumers

While several card-based innovations have been facilitated through mobile or smart phone devices, a few innovations on the consumer side have attempted to combine all of a consumer's cards onto a single card or device. Nonbank providers such as Coin, Placst, Wocket, and Stratos have introduced products focusing on card aggregation—creating a digital card solution to the proverbial "Costanza Wallet," a wallet so stuffed that its owner, the Seinfeld sitcom character George Costanza, was forced to sit with a tilt. In 2014, the average credit card-owning consumer had 3.7 cards (Ray and Ghahremani 2015). Many consumers have at least one

debit card, a key ring or wallet full of loyalty cards, and perhaps even the odd gift or prepaid card or two. Coin can store up to eight magnetic stripe cards, Placstc as many as 20, Wocket up to 10,000, and Stratos an unlimited number.

These “card for all cards” devices rely on magnetic stripe technology to create a single device that stores the information of multiple cards and functions as a proxy for those cards at the POS. Coin generated a lot of enthusiasm during its beta testing and began taking pre-orders in 2013. However, its product launch has been delayed until spring of 2015, only a few months before the EMV migration. As of this writing, Coin does not plan to make its initial card EMV compatible; though consumers may link their EMV chip cards, the Coin card will only work where POS payments by swipe continue to be accepted. Wocket and Stratos are following similar paths. Still, the lack of an EMV chip may not deter consumers from adopting these card innovations because the EMV liability shift does not directly affect them. At present, the liability shift’s underlying incentive structure only affects merchants and issuers and therefore may not play a significant role in consumer choice.

In contrast, Placstc responded to the impending EMV migration by creating a product that EMV POS terminals can read using “a rewritable chip technology.” This technology will modify the Placstc Card depending on which EMV card a consumer uses to pay (Placstc 2015). To transfer the EMV card information onto the Placstc Card, Placstc created an EMV card reader. Assuming consumers opt to use a digital card, those concerned about payment card security may gravitate toward Placstc given that it contends to provide a more secure device.

Another card-based consumer innovation, LoopPay, consists of two parts: a mobile app and a LoopPay device that can be read by any magnetic stripe reader.⁵ The app can manage and securely store various payment cards—including credit, debit, loyalty, and gift cards—on the device. The device, which may be a snap-on case for a mobile phone, a fob, or a card, transmits the selected payment card information using magnetic technology at the terminal. To pay, the consumer just holds the device near the POS terminal’s magnetic stripe reader. LoopPay in its current iteration is not EMV enabled, but the company has stated it is trying to develop a compatible solution.

Ultimately, the effect of the EMV migration on consumers’ use of “card for all cards” innovations may be negligible, as none have been widely launched. Instead, consumers may face issues

using their actual payment cards—EMV or magnetic stripe—to pay at the POS. According to research by the Aite Group, of the roughly 10 million U.S. POS terminals, 59 percent are expected to be chip compatible by the end of 2015 (PYMNTS 2015). Some of these terminals will have the contactless, or near-field communication (NFC) functionality enabled, while others will not.⁶ From merchant to merchant, consumers will have to discern when to swipe, dip, or tap their payment cards.

Outlook for Magnetic Stripe Card-Based Innovations

Magnetic stripe card-based innovations offer merchants flexibility and a more predictable cost of payment card acceptance. Merchants that do not find the new EMV POS technology cost effective may be inclined to continue to use these card payment acceptance products. Merchants that do plan to upgrade will have EMV-compatible options such as those Square provides. Though some offerings will fall by the wayside, the effect of the EMV migration on the survival of merchant-focused innovations may be limited. In fact, if European providers enter the U.S. market, they may bring more card acceptance options and greater competition.

For consumers, card-based innovations offer convenience, the ability to aggregate preferred payment methods onto a single device, and, in some instances, couponing and loyalty-based savings. Ironically, the EMV migration may make paying with cards more confusing: do you swipe, dip, or tap? As a consequence, consumers may seek less confusing payment alternatives. EMV may unintentionally usher in the long-awaited broad adoption of mobile payments—tap to pay.

As merchants upgrade their terminals to accept EMV payments, they may erode one of the biggest barriers for mobile payments. A Boston Retail Partners’ (2015) study suggests that while only 10 percent of retailers currently support NFC payments, an additional 35 percent plan to do so by October 2015, the deadline for EMV migration. POS payment technology provider VeriFone reports that virtually all of its EMV terminals include NFC capability. This comes at a time when Apple Pay, the most successful mobile payment thus far, is being aggressively marketed not only by Apple, but by card issuers and the networks that process card payments. In its first three months, Apple Pay accounted for more than \$2 of every \$3 U.S. consumers spent using “contactless” systems

(Auchard 2015). In fairly short order, Samsung announced its intent to acquire LoopPay and suggested LoopPay's technology could be integrated into Samsung phones and other devices (Stein 2015). Google is also attempting to expand the reach of its mobile payment offering, Google Wallet, with the purchase of components of Softcard, the mobile wallet initiative among mobile carriers AT&T, Verizon, and T-Mobile. As part of this acquisition, Google anticipates that later this year, all three carriers will begin pre-installing the Google Wallet app onto the Android smartphones they sell (Alba 2015).

Conclusion

The EMV migration may have a limited effect on the survival of magnetic stripe card innovations. For consumers, however, EMV migration may make paying with cards more confusing. As a result, consumers may actively seek less confusing alternatives such as mobile payments. With

the introduction of Apple Pay, consumers are increasingly adopting contactless mobile payments, and more competition is likely to follow. Many of the new POS terminals merchants are installing in preparation for the EMV migration have NFC capability, removing what has long been viewed as a significant barrier to mobile payments adoption. However, whether a merchant enables the NFC capability is another matter, and will likely hinge on answers to questions about the security of contactless mobile payments relative to EMV and whether mobile NFC payments will be treated by the card networks as card-present or card-not-present transactions. Both influence merchants' potential liability. While it's far too early to call, the big winner in payments innovation after the EMV migration could be mobile payments.

Endnotes

¹Exhibit classifications have some overlap (2015 International CES 2015).

²National rollout of EMV payment cards in the United Kingdom began in October 2003, with a targeted completion date of February 2006 (Sullivan 2013).

³Prior to EMV migration, issuers incur the cost of card-present counterfeit fraud in stores. After EMV migration, liability will shift to the party using the less secure technology. When both parties are using the same technology, the issuer will be liable (Gara 2014).

⁴A quick response code is a type of 2D bar code often used to provide access to information through a mobile phone.

⁵LoopPay uses Magnetic Secure Transmission technology to enable contactless payments at magnetic stripe card terminals (LoopPay 2015).

⁶Near-field communication is a short-range, high-frequency, standards-based wireless communication technology that enables exchange of data between compatible devices in close proximity.

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