

The Apple venture into NFC payments Payments 2.0 and what it means for banks

On October 20, 2014, Apple® released its Apple Pay™ mobile payments solution. Following the release of the iPhone® 6 mobile device and iOS 8¹ on September 9, Apple has added the last component for an integrated mobile payments solution with near-field communication (NFC) technology.

Certainly, both financial institutions and the general public have been very interested in this development since its announcement more than a month ago. How might this launch represent a change in the dynamic surrounding NFC-based mobile payments in particular, and what barriers may remain for NFC payment adoption to present a disruptive change to the incumbent payment players: banks, card issuers, merchants, payment networks, and financial services-oriented technology companies?

Is the Apple Pay solution different than other forms of mobile payments?

Until now, Apple proceeded more slowly than some of its competitors in the NFC payments space. Indeed, Apple may have been conspicuous among major handset manufacturers for not having an NFC-ready device and not being part of the NFC Forum, which is comprised of a group of mobile payment companies dedicated to the development of NFC standards and payment products. With the launch of the latest generation of Apple mobile devices (iPhone 6 and iPhone 6 Plus, iPad Air™ 2, and iPad mini™ 3) combined with its Touch ID™ fingerprint sensor and Passbook® application program, Apple may provide all recent iPhone device buyers with access to NFC-enabled point-of-sale (POS) payments, as well as secure online payments. Today, some 70 million iPhone devices are in use in the U.S.,² and conversion and upgrade trends suggest that adoption of the new mobile devices may be proceeding more quickly than in previous model releases. Indeed, early sales figures for the two new phones indicate "first weekend" sales of more than 10 million devices, which is an increase over the iPhone 5S and iPhone 5C devices from a year ago, and double that from the iPhone 5 device two years ago.³

Apple's Touch ID sensor allows consumers to make physical payments securely by authenticating their identity using a fingerprint — and completing an efficient transaction. Additionally, fingerprint data is stored on the phone's chip in a dedicated area known as the Secure Enclave, rather than in the cloud. Similarly, the payment card information is not on the device; rather, a digital account number unique to the device is stored locally in the Secure Element within the user's device.

Another security feature Apple integrated into the Apple Pay solution is tokenization. This is progress for payment security, because tokenization allows for a unique code to change hands between the customer and the merchant — not the actual card number. The unique code, or "token," is only good for that transaction, so if a fraudster were to intercept the transaction, he/she would only get access to the token, not the card number. The token is useless outside of that one transaction. The Apple Pay solution only keeps the tokens on the phone, not the card number, further securing the payment system. Thus, the combination of biometric authentication, embedded Secure Element, and tokenization provides a more robust security approach than card swipes, which may help revive NFC-enabled mobile payments.

Apple has negotiated transactions over its protocol to be treated as "card present" transactions, which carry a lower interchange rate than some other forms of payments.⁴ But the security methods embedded within the Apple Pay solution may provide further attractiveness to merchants. Payment card security standards from the Payment Card Industry (PCI) Data Security Council require merchants to improve the security of customer card data, which have been costly for many merchants. With the tokenization approach described above, the merchant will not have access to the card data itself. Therefore, this approach may both reduce fraud and data protection costs, which may further incent merchants to accept NFC payment solutions.

Finally, merchants face deadlines beginning in October 2015 to upgrade all of their card readers to accept Europay, MasterCard & Visa (EMV) cards, which replace the magnetic stripe with an integrated circuit, or chip, for improved security. Banks are under the same deadline to issue EMV cards. After October 2015, merchants that have not upgraded card readers will be responsible for the costs in event of fraud. So, the deadline does have some teeth. Most merchants upgrading to EMV terminals will likely decide to add NFC capability in order to accept a large spectrum of payment solutions.

Is NFC set to disrupt the retail payments landscape? Perhaps not yet.

Before we explore the potential for NFC to disrupt the incumbent payments ecosystem, it may be helpful to size the challenge. In a recent report, Gartner predicted that “mobile payment transactions will grow at a 30 percent compound annual growth rate in 2013 through 2018 and reach more than \$900 billion in 2018” on a global basis.⁵ This includes both money transfer as well as mobile commerce, defined as payments made by short message service, unstructured supplementary service data, mobile Web, and mobile apps.

Gartner expects that “mobile commerce will become the second-largest driver of mobile payment, following money transfer, and contribute to about 45 percent of total transaction value in 2018.”⁶ This may be a positive indicator for the future growth of mobile purchases overall, but perhaps not for NFC. Indeed, Gartner forecasts that “NFC payment will remain a minority factor throughout 2018, accounting for less than 6 percent of total transaction value in 2018,” suggesting slow share increases across a rapidly growing overall market.⁷ On the domestic front, another estimate of payment volume from Yankee Group pegged NFC transaction volume at \$188 million in 2013, which is a small fraction of the estimated \$5 trillion consumer retail expenditures in the United States alone.⁸

Mentioned above is the notion of merchant penetration and ability to accept NFC payments. Indeed, the major stumbling block at this point may be found at the POS. To cite one example, there are at present about 220,000 retail establishments set to accept the Apple Pay solution.⁹ This figure represents something less than 2.5 percent of all merchants, based on data from the Electronic Transactions Association showing that more than 9 million U.S. merchants accept some form of payment card today.¹⁰

Smaller merchants may also fall behind the curve on NFC adoption. History suggests that universal acceptance will be critical in driving adoption, and so NFC payment schemes in conjunction with the bank merchant acquiring business will need to accelerate the deployment of NFC-capable POS terminals before the heralded disruption has a chance of coming true.

This shift will not come cheap: the cost of EMV conversion — including card replacement, ATM upgrades, and POS terminal upgrades — will likely be significant. Here’s where it can get tricky for the merchant. EMV payments can be enabled either through a contactless transaction similar to NFC payments, or via a “contact” transaction that involves the consumer “dipping” the card into a reader that authenticates the transaction via a direct connection to the integrated circuit embedded in the card.

As stated above, if contactless EMV transactions are enabled, the communication protocol also facilitates NFC transactions. This may set up a conflict in the merchants’ minds about the best upgrade path for their needs if consumer demand for NFC payments become a reality in the coming years. Merchants, too, will have some additional enticements arising from mobile payments based on an improved ability to provide promotional offers to customers at the POS.

Indeed, competing mobile payment frameworks that have merchant support (such as MCX) may provide another challenge to NFC adoption. Some merchants, for example, want access to consumer spending data for their own use, while others have taken steps to disable NFC payment acceptance capability at the POS due to the costs associated with enabling that function for a relatively small set of transaction volume.¹¹

Another concern for NFC payments is security. Some in the industry continue to question the security of NFC technology, which remains relatively unproven in the United States at mass scale. There is no shortage of players working on tokenization schemes beyond those incorporated into two mobile phone operating systems (Android and iOS). Indeed, the Federal Reserve Bank’s Mobile Payments Industry Workgroup is evaluating a variety of tokenization approaches from EMV, The Clearing House, PCI Security Standards Group, and others to identify potential inconsistencies that may impact the development of a common set of tokenization standards.¹²

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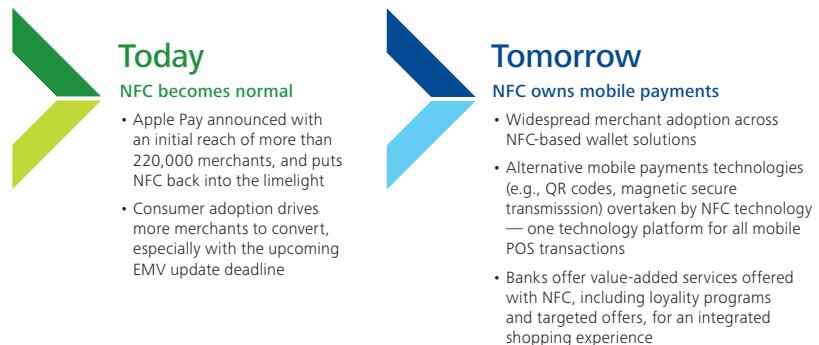
NFC and the Apple Pay mobile payments solution: The next step in the development of "Payments 2.0?"

As recently as a few months ago, NFC-enabled payments didn't appear to be a viable alternative to other mobile payment types in the United States, at least in the near term. Apple's entrance into this arena may not be so much a revolution as a tipping point. The company's solution set may be well-positioned in mobile payments with an integrated hardware and software capability that could enhance the consumer experience enough so that, instead of being driven by mobile carriers or merchants, NFC-enabled payment choice may be driven by shoppers themselves. With that said, the company may need to develop a compelling offering that emphasizes both value and ease-of-use to spur acceptance by merchants and preference for NFC-enabled payments over both other forms of mobile payments as well as traditional payments like credit and debit cards. While the added data possible from mobile transactions is attractive to networks, issuers, and merchants, consumers have little incentive on that front.

How will the banks' role evolve, in the near term as well as over a longer period? At present, the largest U.S. card issuers have already signed up with the Apple Pay solution, and 500 more banks were announced on October 16, 2014.¹³ Given that these issuers represent the large majority of total cards issued, they will need to reexamine how they differentiate to achieve "top of wallet" status. The industry generally understands that they need to take part in order not to "lose out," and many issuers need to decide how to differentiate their product now, as card design will likely remain within mobile wallets themselves. Design has not necessarily been a differentiator, as compared to rewards (and other loyalty-based programs) and rates. This trend should continue as payments migrate to an NFC-enabled environment.

Further, rewards and perks may themselves be limited due to unknowns surrounding the evolving economic model associated with mobile payments. Increased security will likely lower interchange rates. Issuers may not be able to command a premium for their brand and security as emerging NFC-enabled payment products offer both consumers and merchants alternatives to plastic. Merchants will, however, likely increase their demand for bank services that help grow sales, offer instant credit to consumers, and exploit the availability of predictive, real-time analytics using payment and bank-owned data.

Figure 1: The "real" start of NFC in the United States



There are of course broader implications for payment incumbents as NFC payments capabilities mature. The extended ecosystem is increasingly taking over the consumer experience and newer, technology-based players may take share that has been traditionally dominated by payments networks, acquirers, processors, and issuers (see Figure 1). In a similar fashion, as plastic gives way to mobile payments, the consumer experience in transactions may involve less of the banks' brands, expectations, and willingness to pay the credit card industry for use of their pipes (interchange/processing fees), and retailers' relationships will transform.

In the longer run, though, banks may evolve to serve Payments 2.0 in a much more valuable role. While traditional banking institutions should participate in solutions such as the new mobile payments innovations managed by others, they should not allow these solutions to become the only transaction channel to the customer, or a significant loss of customer relationship and relevance will likely occur. The traditional players should turn to solutions that focus on helping merchants grow sales, offer instant credit to qualified consumers, and exploit the availability of predictive, real-time analytics using payment and bank-owned data.

By working more closely with merchants, this role offers banks an alternative path to achieve more sustainable consumer engagement. The new path can create significant opportunities for banks to partner with merchants and merchant consortiums that will welcome not only a more cost-effective solution, but also the opportunity to safely use consumer data to create strong value propositions through analytics. To that end, banks should evolve to serve this new era and capitalize on the opportunity to develop stronger merchant and consumer value propositions. The opportunity is as significant as the threat.

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Endnotes

¹ IOS is a trademark or registered trademark of Cisco in the United States and other countries and is used under license.

² comScore, Inc. "comScore Reports May 2014 U.S. Smartphone Subscriber Market Share," comScore press release, July 3, 2014.

³ Gregg Keizer, "iPhone 6 Sales Top 10M on Opening Weekend, 11% More Than in '13," *Computerworld*, September 22, 2014.

⁴ Bailey Reutzel, "Apple Pay Takes a High-Tech Approach to Mobile Security," *PaymentsSource*, September 9, 2014.

⁵ Sandy Shen, "Market Trends: Cloud Solutions and Digital Commerce Will Drive Mobile Payment Adoption," Gartner, Inc., September 23, 2014.

⁶ Ibid.

⁷ Ibid.

⁸ Daisuke Wakabayashi and Greg Bensinger, "Will Stores Warm Up to Apple Pay?," *Wall Street Journal*, September 10, 2014.

⁹ Nathan Olivares-Giles, "Apple Pay Begins Monday at More Than 220,000 Retail Locations," *Wall Street Journal*, October 16, 2014.

¹⁰ Daisuke Wakabayashi and Greg Bensinger, "Will Stores Warm Up to Apple Pay?," *Wall Street Journal*, September 10, 2014.

¹¹ Matt Hamblen, "Isis CTO Accuses Retailers of Turning Off NFC and Smartcard Payment Tech," *Computerworld*, March 17, 2014.

¹² Susan Pandy and Marianne Crowe, "Discussion on Tokenization Landscape in the U.S.," Mobile Payments Industry Workgroup Meeting, Federal Reserve Bank of Boston, September 23, 2014.

¹³ Robin Sidel, "Apple Pay Draws Hundreds of Banks," *Wall Street Journal*, October 16, 2014.

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