

## ***Payments on the go:*** Making sense of the evolving mobile payments landscape

*Mobile payment systems have had trouble gaining traction and acceptance, but now may be the time to cash in.*



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## The heart of the matter

*Despite an estimated \$142 billion market for mobile payments by 2019, few solutions have gained traction in the US.<sup>1</sup> Scattered successes among a few providers have revealed what may be the logical direction for success, but the landscape is still fragmented and unknown. To succeed, a mobile payment system will have to solve multiple issues that have stymied adoption in the past. How should merchants and technology innovators work out the best plan for moving forward?*

Mobile phones have already revolutionized our lives, often taking the place of cameras, calculators, and paper tickets from airlines. What they haven't replaced—yet—is money. The mobile trend has also spawned countless mobile payment systems, but most have gained little or no traction among merchants or consumers in the US.

With the stakes rising, this is about to change. As seen in Figure 1, Forrester Research projects that the mobile payments market will jump to \$142 billion by 2019.<sup>2</sup> These stakes have driven innovators to keep trying with unflagging zeal.

Nevertheless, it remains difficult for merchants who want to save money and better serve customers to figure out the best plan for participating in this increasingly important arena. While other international payment options, such as M-Pesa, have established a foothold in regions where payment alternatives were slim, the challenge in the US and other developed countries is different. In these countries, innovators need to figure out more than just delivering a convenient and secure payment solution. They need to offer a broader, more satisfying customer experience—one that encompasses a much larger value chain that could involve loyalty rewards, discounts, and other incentives, and perhaps even perks and experiences no one has considered yet.

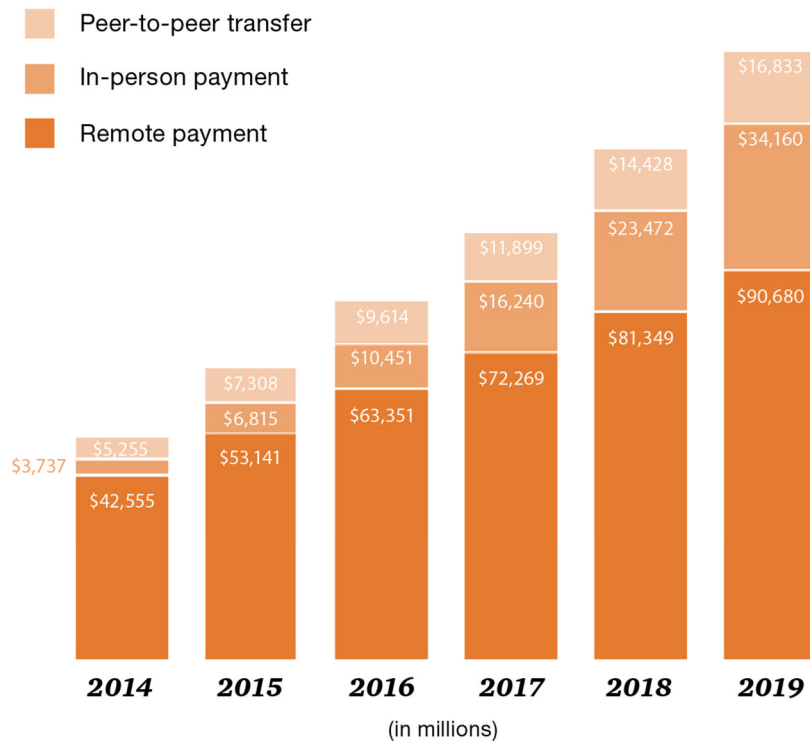
Whichever mobile payment system succeeds, it will have to entice adoption on both sides of the equation; that is, it must appeal to both merchants and customers. It will have to solve multiple issues that have so far stymied adoption. These range from convenience and user experience to security and cost.

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<sup>1</sup> Forrester Research, "US mobile payments forecast, 2014 to 2019," November 17, 2014.

<sup>2</sup> *Ibid.*

**Figure 1: US mobile payments expected to hit \$142 billion by 2019.**



Note: Forecast does not include purchases made on a tablet or card payments made at mobile point of sale (mPOS) or with a mobile card reader.



“Peer-to-peer” transfers occur when one person pays another person using a mobile device. The device uses either a preloaded app or a browser-based app to initiate, authenticate, and transfer funds.



“In-person” purchases are initiated using a mobile device where the buyer and seller are in-person, usually at a brick-and-mortar retail location where the product/service is immediately delivered.



“Remote” payments are made when a buyer purchases goods or services using a mobile device, but the buyer is not physically present with the seller and the goods are not immediately delivered (as with eCommerce).

Source: Forrester Research, “US mobile payments forecast, 2014 to 2019,” November 17, 2014.

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## An in-depth discussion

### ***A short history of mobile payments***

Several years ago, as we noted in our 2011 FS Viewpoint, *Dialing Up a Storm*, financial institutions were at risk of losing their place in the payments value chain to telcos, technology innovators, and device manufacturers, among others. That threat is still alive today, but it's become clear that mobile payment solutions are part of an evolution, rather than a revolution, in a changing payments landscape.

Even what we think of as “mobile payments” is changing. As early as the 1990s, oil companies began developing RFID chip-enabled devices that customers could wave at the pump to buy gasoline. Charities have raised millions of dollars by enabling givers to send text-message donations that are charged to their wireless accounts and passed on to charities by their carriers. More recently, companies like Square have given food truck vendors and other small businesses the ability to accept credit card payments with a small card-reading device that works with smartphones and tablets. Although these are all forms of mobile payments, in this article we focus on the “in-person” solutions that enable customers to use their smartphones to pay for goods and services at brick-and-mortar locations.

For years, companies have tried to figure out ways to make mobile payments simple, almost all without widespread success. Startups such as Bling Nation, FaceCash, FonePays, and Obopay have come and gone.<sup>3</sup> Even larger, established companies have had trouble with mobile payment systems. In 2010, AT&T Mobility, T-Mobile, and Verizon Wireless announced the Isis Mobile Wallet (renamed Softcard in 2014), eventually teaming with major card companies. By leveraging near-field communication (NFC) technology, users were able to pay by tapping a payment terminal with their mobile device. However, as with other efforts, its potential for success was unclear. While Google shut down Softcard's operations after it acquired the company in 2015, it is leveraging certain aspects of the technology in Google Wallet.

### ***In the face of complexity, success remains elusive***

Why is success so elusive? There is no single answer, because mobile payments are elbowing their way into an established, complicated ecosystem. Getting financial services players, card networks, merchants, smartphone manufacturers, and telcos to collaborate was never easy. The question of how best to avoid fraud risks was also difficult to answer.

Now, efforts have been made more difficult by the entrance of innovative technology players. Merchants are also hesitant to invest. New payment solutions may require costly new point-of-sale devices and software implementations or, if handled by another party in the process, merchants may lose insight into which customers are buying which items.

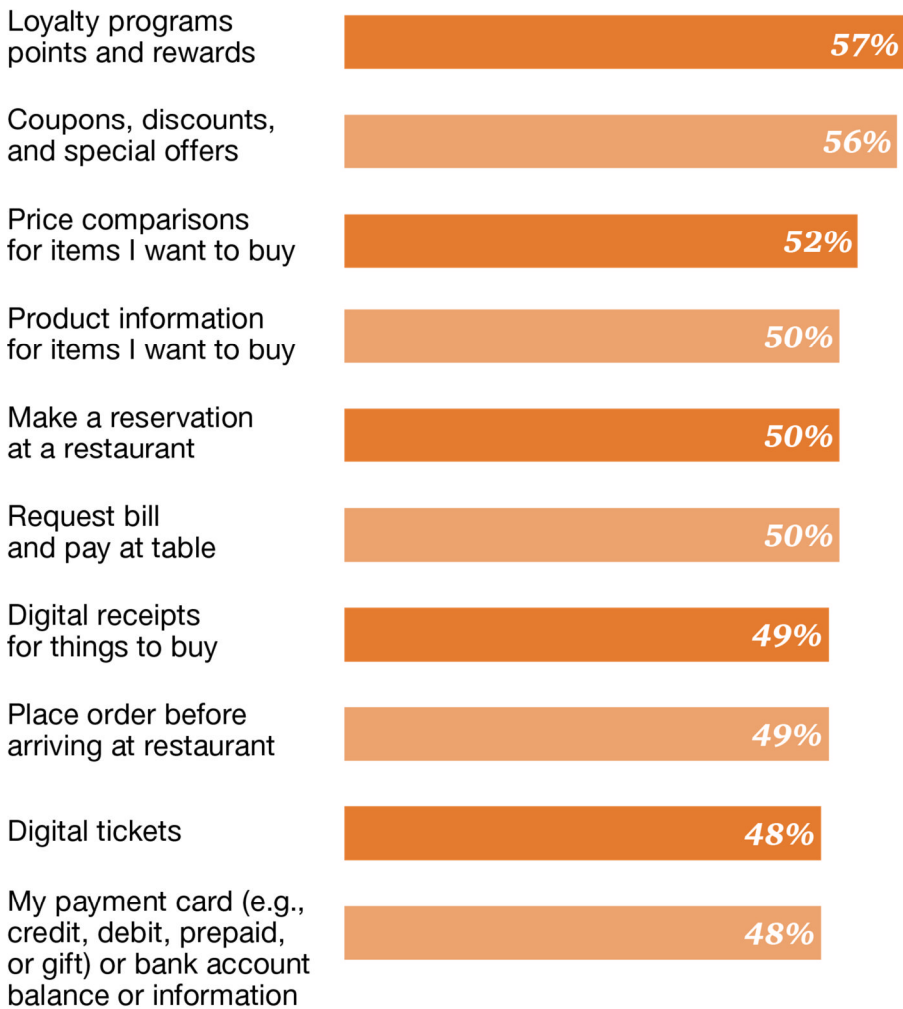
At the same time, consumers are reluctant to switch to a payment system that has not been proven to be more convenient or more secure than what they already use. Indeed, lacking additional incentives, consumers have little reason to switch to something that requires downloading a new app and shifting ingrained habits from a card swipe to a relatively more complicated smartphone. As seen in Figure 2, consumers expect many services to be included in a mobile wallet.

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<sup>3</sup> Adams, John. “Why Great Mobile Payment Ideas Fail.” American Banker Bank Technology News. [www.americanbanker.com](http://www.americanbanker.com), accessed March 1, 2015.

Figure 2: Consumers expect many services to be included in a mobile wallet.

*Which of the following are you interested in having in a mobile digital wallet?*



Source: Forrester Research, "US mobile payments forecast, 2014 to 2019," November 17, 2014.

The fundamentals of debit and credit transactions in and of themselves are complex, too. The payments ecosystem encompasses issuing and acquiring banks, networks (such as Visa and MasterCard), processors (First Data, Global Payments, and others), merchants, and, of course, consumers. The ecosystem is muddled by players such as American Express and Discover,

which double as issuers and networks. With mobile payments, mobile phone manufacturers are continuing to enter the fray—as evidenced by Apple Pay and Samsung Pay.

***The increasing importance of data***

Another crucial aspect hovers over the mobile payment ecosystem: the importance of data revolving around the transaction. It's no longer a discrete question of what was bought and where. With data from many mobile devices, merchants can now unearth a variety of insights: whether consumers are responding to a promotion, or if they patronize a particular establishment at a regular time each day. Mobile payments deliver more context about a transaction than ever.

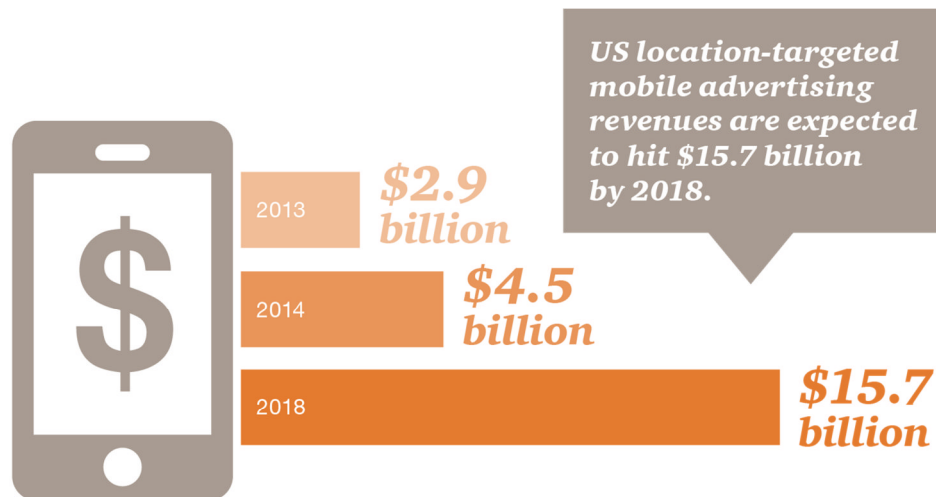
The availability of this data creates challenges. Every participant in the ecosystem understands the value of data, but they've been forced to deal with incomplete views. For instance, merchants know how often customers come in and what they buy. They don't know how often customers shop at competitors, though some card issuers and larger processors do. Issuers, however, may have visibility into the *where* but not necessarily the *what*. Knowing this information provides the ability to digitally influence and measure sales. As seen in Figure 3, analysts predict that location-targeted mobile ad spend in the US will triple between 2014 and 2018. Each participant in the value chain—merchants, issuers, acquirers, processors, and carriers alike—is scrambling to stake its claim.

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**Figure 3: Location-targeted mobile ad spend will triple between 2014 and 2018.**



Source: BIA/Kelsey, "U.S. Local media forecast – mobile edition (2013-2018)."

The most salient underlying question for success lies in who controls the relationship with the customer and, therefore, who has access to transactional data. While other participants within the value chain have a variety of views around transactional data, only the merchant has a direct relationship with the consumer—knowledge of *who* Joe Smith is, as well as *what* he is purchasing. Thus, any successful mobile payment solution must start with a strong foundation of merchant support, and it must address merchants' concerns about potential fraud risks.

That means mobile payment solutions must take into account the cost to merchants of new technology. Point-of-sale (POS) hardware and software can cost several thousand dollars per checkout lane; even for a national merchant getting a volume discount, that represents an investment of millions of dollars.<sup>4</sup> And that's just for POS hardware and software: installation, implementation, certification, and back-end integration not included.

A solution that requires significant financial investment without providing a clear benefit to merchants is likely to stall. But one that helps them further solidify the customer relationship—by extending the transaction beyond the payment into the associated realms of loyalty, convenience, coupons, rebates, and other tools—has a greater chance for success.

Merchant support, however, is only half the equation. Customers must be willing to adopt new technologies. Experience shows that they will do so only when it is convenient, enhances their overall experience, and makes them feel confident that their financial information and transaction data are protected from fraud. Consumers took years to warm up to credit and debit cards, only doing so once they understood the convenience these cards provided, along with additional protections through regulation. Customer adoption of mobile payments will require new capabilities beyond the status quo.

<sup>4</sup> CostHelper. "How Much Does a Point of Sale System Cost?" <http://smallbusiness.costhelper.com/point-of-sale.html>, accessed March 1, 2015.

## A snapshot of current technologies

*Do the latest offerings meet our criteria? A look at four major competing solutions reveals their strengths and limitations.*

Solution and provider	First launched	Strengths	Limitations
Apple Pay (Apple)	October 2014	<ul style="list-style-type: none"> <li>Has not attempted to supplant any player in the current ecosystem, which has allowed Apple to create partnerships with ecosystem participants.</li> <li>Uses a combination of tokenized and biometric security.</li> <li>Strong consumer following.</li> </ul>	<ul style="list-style-type: none"> <li>Its NFC contactless technology is only accessible to iPhone 6 users.</li> <li>Disabled by some merchants aligned with CurrentC.</li> <li>Less than 3% of retailers currently support NFC on their POS terminals. The October 2015 EMV chip card compliance deadline will inevitably expand the number of compatible terminals as merchants upgrade to newer systems.</li> <li>Currently is not integrated with merchant loyalty programs.</li> </ul>
CurrentC (Merchant Customer Exchange, or MCX)	2015 (scheduled)	<ul style="list-style-type: none"> <li>Uses QR codes and scanners rather than NFC terminals.</li> <li>Is device-agnostic and works with Android and iOS operating systems.</li> <li>Uses tokenized security.</li> <li>Points customers earn at one store are usable at others within the MCX network.</li> <li>Lower transaction fees for merchants.</li> </ul>	<ul style="list-style-type: none"> <li>Privacy concerns over CurrentC's intentions to share purchasing data with developers, app stores, and phone manufacturers may deter consumer adoption.<sup>5</sup></li> <li>Requires multi-step payment process: opening the app, and then scanning and confirming the codes.</li> </ul>
Google Wallet (Google)	September 2011	<ul style="list-style-type: none"> <li>Stores loyalty cards, gift cards, and coupons.</li> <li>Allows funds transfer through Gmail.</li> <li>Works on hundreds of Android phone models, arguably giving it the broadest global reach.</li> </ul>	<ul style="list-style-type: none"> <li>Limited traction with mobile carriers and merchants.</li> <li>Impact of February 2015 acquisition of Softcard unclear.</li> </ul>
Samsung Pay <sup>6</sup>	2015 (scheduled)	<ul style="list-style-type: none"> <li>Partnerships with major credit cards and financial institutions.</li> <li>Proprietary security tokenization technology called Magnetic Secure Transmission.</li> </ul>	<ul style="list-style-type: none"> <li>Available only on limited number of Samsung phones.</li> </ul>

Source: PwC analysis.

<sup>5</sup> Constine, Josh. "CurrentC Is The Big Retailers' Clunky Attempt To Kill Apple Pay And Credit Card Fees." TechCrunch. <http://techcrunch.com/2014/10/25/currentc/>, accessed March 1, 2015.

<sup>6</sup> Samsung Mobile Press. "Samsung Announces Samsung Pay, A Groundbreaking Mobile Payment Service." [www.samsungmobilepress.com](http://www.samsungmobilepress.com), accessed March 15, 2015.

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## ***The importance of customer experience***

At the heart of many technology solutions—especially those relating to mobility—is the question of customer experience. It's particularly important because smartphone apps give many enterprises direct access to customers they have never had before, for example through indirect selling or distribution models. How can enterprises make customer interactions so smooth and frictionless that they become a competitive advantage, especially in a digitized world where differentiation is harder than ever to achieve?

Clearly, replacing an action as simple as the swipe of a magnetic strip (or soon, a chip-and-pin dip, tap, or wave) is not sufficient. Just as merchants have to derive an advantage in a mobile payment solution, so do consumers. Some app-based payment systems have already been widely adopted by consumers, and those successes highlight some key lessons that may also apply to other payment solutions:

**Starbucks.** Consumers benefit because they can use the app to find locations, order drinks for pick-up, get product offers, and see nutritional information. They can pay for the transaction using a scanned QR code, and do so with stored payment credentials, taking advantage of rewards points that can be used at the time of purchase.

**OpenTable.** Customers can use the app to search restaurants, make reservations, and even pay for the meal (plus tip) at its conclusion. Their rewards points are stored in the system for later use. The app can also e-mail receipts for expense reimbursement.

**Uber.** In addition to ordering pick-ups, customers can see the fees they'll pay ahead of time. Because they pay with stored payment credentials, there's no back-and-forth with the driver at the end of the ride. Customers can give feedback to drivers, and vice versa.

The key point to remember: to spur customer adoption, the transaction must be experience-driven, not device-driven. In fact, the best transactional systems might just be device-agnostic. If customers can choose from systems that help them beat waiting for taxis or waiting in line for lunches or just generally save time, they'll be intrigued and eventually enticed.

At the same time, to spur merchant adoption, a payment solution must accommodate the collection and analysis of marketing and purchasing data. Apps must link to back-end "commerce platforms" to track data about the customer, from which merchants derive benefits on an ongoing basis. How frequently do customers visit? What do they usually buy? Are there ways to use this information to cross-sell or up-sell? How can this information be used on a macro level to craft marketing campaigns that entice similar demographics?

Merchants, in turn, can use the information to offer discounts, rebates, rewards, coupons, or other enticements, essentially creating a priceless loop of customer engagement. Overall, mobile payment solutions must serve both these constituencies to succeed.



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## *What this means for your business*

### *Why mobile payments must move beyond the transaction*

The apps used by Starbucks and Uber offer a high level of customer service and intimacy, and represent real value for the merchant and the customer alike. They solve a real consumer problem in that they remove or reduce the friction in the payment process. But they don't solve the overall mobile payment conundrum simply because they represent high-frequency customer relationships. The mobile payment scenario for casual, infrequent transactions still remains unsolved. There are no clear winners yet, and no clear recipes for success.

That's why we believe the mobile payment solutions market will remain fragmented, much as it is now. New entrants will continue to try to break into this market, and consumers will continue to choose among multiple options when making purchases—cash, debit and credit cards, store cards, gift cards. (They will also retain these options as a backup for the unfortunate moment when their smartphone battery dies and leaves them temporarily impoverished.) Any new payment system must have a number of related attributes to be considered successful: merchant acceptance, customer convenience, loyalty rewards, security, and privacy.

Given all these interwoven dependencies, it's important to identify the overarching goal: to view mobile payments not as a discrete transaction but through the perspective of the customer relationship. It's not the mobile payment technology, per se; it's the opportunity to establish digital engagement with customers. Ideally, that means deep engagement with loyal customers, as well as ways to entice borderline loyalists and prospects, too.

### *What will the future of mobile payments look like?*

The challenge for all the players in this environment is complexity—the sheer spectrum of possibilities, from creating one's own app to figuring out how to integrate with various offerings without setting up one-off, point-to-point solutions with each participant.

**Technology innovators.** For providers in the payment value chain to benefit from this turning point in technology, they must work diligently to reduce complexity. They must figure out how they can retain what makes the payment process work, while still creating ways to integrate advancements. How can solution providers expose back-end payment capabilities to accommodate whatever new technologies might present themselves, and do so in a way that's not only as plug-and-play as possible, but as scalable as possible? And how

can they do it in a way that retains—and even expands, given the increasing use of personal data—the trust that merchants and consumers have in the system?

**Merchants.** In the face of complexity, merchants do not have the luxury to remain on the sidelines when it comes to mobile payment solutions. Smartphones have become extensions of our personas, and the wallet is the most personal of personal possessions. Merchants have an opportunity that cannot be wasted. They can actually sidestep the uproar over mobile payments and take advantage of the fragmentation by crafting their own branded, solution- and device-agnostic options that extend the intimate relationships they already have with customers.

Furthermore, even as mobile technology shines a bright light on new ways to gather data, merchants must maintain a grander perspective, thinking about how to incorporate information from multiple channels—mobile, web, in-store, and more—into their customer engagement models. They must make sure they know that the Jane Smith who's using a mobile device is the same Jane Smith who was sent a promotional ad 48 hours earlier and who then went online to research products 24 hours earlier. This requires a sense of personalization and scale that may be new to many merchants.

At the same time, it will be critical to navigate a regulatory and privacy landscape that is only partially defined and that will continue to evolve along with the ecosystem. Today, consumers typically will accept an application's terms of use when they download it, ceding control of how the data is used. In the future, regulators may create laws that align this "opt-in" model with existing laws for the sharing of financial services data. This means that app developers may have to separate a consumer's ability to use an app from his or her permission to share data. They may also need to make it easy for consumers to opt-out of data collection at a later date. Merchants will need to balance their desires to completely control the experience against potential consumer backlash over privacy rights.

No matter what happens with regulations, merchants and others must be willing and able to answer consumers' questions about how their data will be used, disseminated, and purged. As a result, merchants and others should design applications with these future capabilities in mind.

Ultimately, the path forward for merchants does not solely revolve around the two options of either building an app or partnering with one of the existing mobile payment providers. Rather, it needs to address multiple strategies targeted at gaining a stronger understanding of digital technologies and their potential for improving customer engagement. Those who want to plant the stake of success in this new territory must start formulating their plans now.

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