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Hip to be Square:
Disruption in the U.S. Mobile Payment Market

Founded in San Francisco in 2009, Square finished 2012 as the darling of Silicon Valley; flush with more than $340 million in funding, the firm had grown to several hundred employees in just three short years. It processed more than $10 billion annually in credit and debit card payments for small business owners that used Square's smartphone-enabled card swipe device wherever cellular or wireless Internet service was available.

However, Square's success had attracted new entrants into the mobile payments processing space, both in the United States and abroad, threatening to derail the company's remarkable trajectory. With its latest financing round valuing the company in excess of $3.4 billion, management and investors were considering which strategies would continue—even accelerate—the company's growth.

Industry Overview

The earliest references to credit and debit cards date back to the 1890s. Their popularity increased greatly in the 1920s when they were used as vendor-specific customer loyalty programs by department stores, hotels, and gas stations. The 1950 advent of the Diners Club card—originally issued on cardboard stock rather than plastic—that could be used at twenty-seven different restaurants in New York City was a key development that led to the cards' current ubiquity. The development of software that could analyze consumer data to help issuing banks identify and target the most profitable customers—those likely to carry balances and yet unlikely to default—further accelerated adoption in the 1970s and 1980s.[1]

At the end of the twentieth and beginning of the twenty-first century, credit and debit card transactional volume skyrocketed, reaching a combined $3.5 trillion in the United States in 2011. Most of this growth came in debit card transactions, which grew 80 percent from 2006 to 2011. Credit card transactions grew only 7 percent over the same period, but total credit card volume was $2.0 trillion in 2011.

[1] M. J. Stephey, "A Brief History of: Credit Cards," *Time*, April 23, 2009.

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Paying with a credit card in the United States involved the following five parties (see **Exhibit 1**):

- *Cardholder*—An individual who applied for and received a credit card
- *Merchant*—A retailer that accepted one or more credit cards as payment for purchases made in person, online, and via telephone
- *Acquiring bank*—A bank that processed credit card transactions for merchants and deposited payments into their accounts
- *Issuer* (also called *issuing bank*)—A financial institution that issued credit cards to cardholders, billed cardholders for repayment, and assumed the risk of fraud and non-payment
- *Credit card association*—An association that developed and marketed credit card brands such as Visa, MasterCard, American Express, and Discover. The association performed transactional operations on behalf of its members, including transaction authorizations and processing, interchange settlements, and fee processing. Credit card brands were licensed to issuers for a fee based primarily on the volume of transactions. In 2011 Visa and MasterCard accounted for more than 70 percent of total transactional volume and had a combined total of 1.6 million cards and 1.4 million active accounts.[2]

Innovations in Mobile Payment Processing

Credit card processing historically required a merchant to have a landline phone connection in order to transmit the information necessary to finalize a transaction, but the proliferation in wireless connectivity—both cellular and Wi-Fi—promised to free merchants from a fixed, wired connection point. For example, by 2000 many taxi companies in major American cities used a traditional card reader with a cellular connection so that the driver could accept credit and debit card payments. Further development in the cellular market had subsequently enabled payment with mobile phones.

There were four primary models for payments using a mobile device: (1) premium SMS-based payments; (2) direct mobile billing; (3) mobile web payments (WAP); and (4) contactless NFC (near field communication) payments.

Premium SMS-based transactional payments allowed users to send payment authorizations via text messages. The payment was then added to the payer's monthly bill or debited from the prepaid account. Once a successful payment was posted, merchants authorized the release of goods or service agreements.

Direct mobile billing, also called direct to bill, was widely used in Asia and Europe to charge purchases to a mobile phone account. At checkout, purchasers selected the mobile billing option on their smartphones and followed a two-step authentication procedure, which usually involved a PIN (personal identification number) and one-time password. After authentication, the purchaser's mobile account was charged for the amount of the purchase, plus applicable taxes

[2] PaymentsSource, "Statistics," http://www.paymentssource.com/statistics (accessed April 30, 2013).

and, in some cases, a processing fee. Direct mobile billing did not require advance registration and did not involve credit cards or bank accounts.

With WAP, consumers made payments by using a web browser or an application downloaded and installed on a mobile phone. The transaction typically required the use of a credit/debit card or pre-registration with an online payment solution such as PayPal.

More recent innovations attempted to eliminate the need for a card reader entirely by relying on NFC technology. NFC used an RFID (radio frequency identification) chip in either a plastic card (with a form factor similar to that of a traditional credit card) or smartphone device to communicate with a radio frequency receiver. The interaction emulated two walkie-talkies communicating with each other at a range of just a few centimeters, such that a light physical touch of the card or phone registered the RFID signal, which eliminated the need for customers to swipe anything through a magnetic stripe reader. The RFID chip contained all of the same information as a magnetic stripe, but communicated it wirelessly. Although many believed that NFC technology would become the leading alternative, the technology was missing from Apple's iPhone 5S smartphone. "It's definitely troublesome for any developer looking to support NFC that it is not in the iPhone," said Jordan McKee, an analyst with researcher Yankee Group. "It's not going to reach massive scale without Apple adopting NFC."[3]

The growth in mobile transactions was expected to accelerate as a result of further innovations: mobile transactional volume was anticipated to reach $670 billion by 2015, with more than 80 percent of point-of-sale systems projected to accept mobile payments by 2016.[4]

Mobile Payment Competitors

With the proliferation of smartphones and ubiquitous Internet access, incumbents and new competitors began innovating in the mobile payment processing space, some on the merchant side and others on the consumer side.

MasterCard

MasterCard was the first company to introduce a contactless payment system. Tested in 2003 in Orlando, Florida, and later rolled out in the United Kingdom, PayPass was launched in the United States in 2005. PayPass technology used a standard RFID-powered NFC chip that replaced the swiping mechanism of regular cards with the NFC "tapping" function. MasterCard approached issuing banks with accounts bearing the MasterCard name and asked them to issue PayPass-enabled cards. Generally the cards were issued with the PayPass capabilities only upon the customer's request, although some banks—particularly in the United Kingdom—issued PayPass-enabled cards without customer consent or notification.

[3] Greg Bensinger, "Apple's New iPhone Deals a Blow to NFC," *Wall Street Journal*, September 12, 2013.

[4] Jennifer Van Grove, "Kuapay Lets Mobile Users Pay with QR Codes," *Mashable*, August 15, 2011, http://mashable.com/2011/08/15/kuapay.

As of March 2011, approximately 92 million PayPass-enabled cards had been issued worldwide, with a total of 311,000 merchants accepting the cards.[5] By mid-2012, MasterCard Advisors indicated that PayPass adoption had not only driven an increase in spend of approximately 30 percent across low-, mid-, and high-spending consumer target segments but also had increased consumer loyalty to the card.[6] That traction among issuers helped drive merchant adoption of the system; by the end of 2012, there were 700,000 active merchant accounts, a 27 percent increase from the end of the prior quarter. This growth was significantly concentrated overseas, with nearly 40 percent of accepting locations in Europe.[7]

Google

In May 2011 Google launched Google Wallet, an Android mobile application that incorporated PayPass technology. After installing the app, users with NFC-enabled phones[8] could add any of their current major debit or credit cards and link them to a virtual MasterCard account issued by the bank Bancorp. When the user initiated a transaction, the virtual MasterCard facilitated the payment and charged the original issuer of the linked credit or debit card. Like NFC-enabled credit cards, Google Wallet required only that users wave their phone over any PayPass terminal to pay for purchases. As an extra layer of security, however, Google required users to enter a PIN to activate the application for each transaction.

Google had elected not to collect fee revenue from Google Wallet transactions. Instead, its plan was to collect data. Google Wallet attempted to enhance the value of its offering beyond the convenience benefit of not having to use a card or "carry a wallet" by partnering with large retailers such as The Gap and Macy's to offer its users special discounts and targeted advertising. The discounts and ads used transaction data and locational information to attempt to make customers' shopping experience much more than a card swipe.[9] As of August 2013, however, iPhone had not adopted NFC and Wallet worked only with a subset of Android phones, which limited its potential market to the approximately 60 percent share of the U.S. mobile market held

[5] MasterCard, "MasterCard® *PayPass*™ Performance Insights," http://mastercard-mobilepartner.com/performance_insights.html (accessed April 30, 2013).

[6] MasterCard press release, "New MasterCard Advisors Study on Contactless Payments Shows Almost 30% Lift in Total Spend Within First Year of Adoption," May 3, 2012, http://newsroom.mastercard.com/press-releases/new-mastercard-advisors-study-on-contactless-payments-shows-almost-30-lift-in-total-spend-within-first-year-of-adoption.

[7] Kiona Smith-Strickland, "MasterCard Reports 700,000 Merchants Worldwide Accepting PayPass," *NFC Times*, February 8, 2013, http://nfctimes.com/news/mastercard-reports-700000-merchants-worldwide-accepting-paypass.

[8] As of April 2013, the Wallet app was available only on certain phones (Samsung Nexus S 4G, Samsung Galaxy Nexus, LG Viper™ 4G LTE, LG Nexus 4 GSM/HSPA+, and HTC EVO 4G LTE at Sprint; Samsung Galaxy Nexus GSM/HSPA+, Samsung Galaxy Victory 4G LTE, and LG Optimus Elite™ at Sprint and Virgin Mobile; Samsung Galaxy Axiom at U.S. Cellular; Samsung Galaxy SIII at Sprint, MetroPCS, and U.S. Cellular) and tablets (Asus Nexus 7 and Samsung Nexus 10).

[9] Other retailer partners included American Eagle Outfitters, Banana Republic, Bloomingdales, Champs Sports, The Container Store, Footlocker, Guess, Jamba Juice, OfficeMax, Old Navy, and Toys R Us. See Google Wallet, "Where It Works," http://www.google.com/wallet/where-it-works.html (accessed April 30, 2013); Tom Loftus, "Google's Place in Mobile Wallet Wars," *Digits* (blog), *Wall Street Journal*, December 6, 2011, http://blogs.wsj.com/digits/2011/12/06/google-place-in-mobile-wallet-wars.

by Android OS phones.[10] Indeed, two years after its launch, Wallet had been downloaded fewer than 10 million times.[11]

Visa and Isis

Visa launched its own NFC payment system, called payWave, in 2007. PayWave was similar to MasterCard's PayPass offering, but it offered no virtual wallet functionality, such as digital cash. Despite Visa being roughly twice the size of MasterCard, payWave was accepted at only 150,000 merchants worldwide.[12]

After launching payWave, Visa attempted to popularize the service by partnering it with Isis, a joint venture of mobile carriers AT&T, Verizon, and T-Mobile. In mid-2011 the three carriers announced plans to invest more than $100 million in Isis in an effort to make NFC technology the new standard for payment processing.[13] Isis was card issuer–agnostic, working seamlessly with Visa, MasterCard, Discover, and American Express. In response to its exclusion from Isis, Sprint announced that it planned to incorporate American Express's own digital payments platform, Serve, into its Android phones.[14]

MCX

Established in August 2012, the Merchant Customer Exchange (MCX) was a joint venture led by merchants such as 7-Eleven, 76, Bed Bath & Beyond, CVS Pharmacy, Dick's Sporting Goods, Gap, Lowe's, Publix Super Markets, QuikTrip Corporation, Sears Holdings, Shell Oil Products U.S., Southwest Airlines, Target, Walmart, and many others. According to the company's website, "Development of the mobile application is underway, with an initial focus on a flexible solution that will offer merchants a customizable platform with the features and functionality needed to best meet consumers' needs."[15]

PayPal

Not surprisingly, PayPal made clear its desire to replicate the success it had disrupting online payments in the early 2000s. In March 2013 PayPal launched the Here platform. Blue and triangular rather than square in shape, Here plugged into the audio jack of smartphones and tablets and enabled users to accept card payments. Here also included an app that let merchants scan cards and checks using the phone's camera.

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[10] Eric Zeman, "Android, iOS Crush BlackBerry Market Share," *Information Week*, May 24, 2012, http://www.informationweek.com/news/mobility/smart_phones/240001008.

[11] Mark Milian and Ari Levy, "Google Wallet Is Leaking Money," *Bloomberg BusinessWeek*, June 6, 2013, http://www.businessweek.com/articles/2013-06-06/google-wallet-is-leaking-money.

[12] Visa, "Frequently Asked Questions about Visa payWave," http://usa.visa.com/merchants/payment_technologies/paywave_faq.html (accessed April 30, 2013).

[13] Jordan Crook, "Isis: AT&T, Verizon, and T-Mobile's $100 Million Gamble in Mobile Payments," *TechCrunch*, August 29, 2011, http://techcrunch.com/2011/08/29/isis-att-verizon-and-t-mobiles-100-million-gamble-in-mobile-payments.

[14] Mark Hachman, "Isis Carrier Venture Signs Payment Deals with Visa, MasterCard, Others," *PCMag.com*, July 19, 2011, http://www.pcmag.com/article2/0,2817,2388712,00.asp.

[15] MCX, "About Us," http://www.mcx.com (accessed April 30, 2013).

Parent company eBay also launched Android and iOS mobile apps that enabled PayPal users to enact the same transactions they traditionally did through the PayPal website (see **Exhibit 2**). In addition, it acquired a series of companies whose services seemed to support the theory that eBay was assembling a full suite of financial services products that centered on a mobile payment processing system. The acquired companies included:

- Where, a geo-targeted mobile advertising service
- Zong, a mobile payments processing system
- Milo, an in-store product inventory service
- Red Laser, a barcode reader application
- Bill Me Later, a pseudo-credit card microloan service that enabled users to immediately purchase items online and pay for them later through the mail or on their phones[16]

PayPal was also working on a virtual wallet. The product's final form and release date were unclear, as was whether it would simply serve as an extension of the existing PayPal mobile application or constitute an entirely standalone product. It seemed likely, however, that the system would enable users to transfer money from one PayPal account to another by bumping phones together using NFC technology; to purchase items by scanning them in-store and either having them shipped or checked out at a register; and to pay for purchases using a PayPal balance, a PayPal-linked bank account, a PayPal-issued credit or debit card, or PayPal-issued retailer-specific coupons or gift cards.[17] Though the product's future was unclear, there was great enthusiasm about the project; in a June 2011 press release that challenged five Bay Area residents to conduct all of their transactions digitally for an entire year without using cash, PayPal president Scott Thompson confidently declared that the physical wallet would soon become a thing of the past.[18]

Merchants that accepted Visa or MasterCard paid on average fully loaded fees of 3 to 7 percent, compared with 1.9 to 2.9 percent for PayPal.

Banks

According to Dan Wiegand, senior analyst at Corporate Insight, "The banks are wary of mobile payments, but aren't sure of how to get more deeply involved."[19] Not wanting to be left out but not daring to bet on which technology would prevail, most banks were only

[16] Rachel King, "PayPal Offers Sneak Peek of Upcoming Virtual Wallet Offering," *ZDNet*, September 15, 2011, http://www.zdnet.com/blog/btl/paypal-offers-sneak-peek-of-upcoming-virtual-wallet-offering/58145.

[17] Jill Krasny and Lauren Brown, "Walkthrough: PayPal's Mobile Wallet Looks Like an Awesome Tool," *Business Insider*, November 17, 2011, http://www.businessinsider.com/pros-cons-paypals-mobile-wallet-2011-11.

[18] Ben Parr, "PayPal Predicts the End of the Wallet by 2015," *Mashable*, June 29, 2011, http://mashable.com/2011/06/29/paypal-100-million.

[19] "Who Will Win As Mobile Payments Go Mainstream?" *Business Insider*, February 13, 2013, http://www.bullfax.com/?q=node-who-will-win-mobile-payments-go-mainstream.

experimenting with mobile payments. JP Morgan Chase had an equity stake in Square and helped it process credit cards. Citibank, which ran the pilot for Mastercard's PayPass in 2003, offered a payment tag that could be attached to the back of any cellphone and used with a PayPass terminal. In late 2012 Bank of America launched a Square-like merchant solution called Mobile Pay on Demand for Android and iPhone devices.

QR Codes (Kuapay, Starbucks)

An alternative to NFC payments arose from an unexpected source—the assembly lines of Japanese automakers. First used to track vehicles through the assembly process, quick response (or QR) codes were two-dimensional barcodes that could hold several hundred times as much data as a traditional one-dimensional barcode.[20] This inexpensive, secure, durable technology allowed a smartphone owner to use the device's internal camera to scan a QR code, which automatically linked to a webpage, application, or other online interface.

Launched in early 2011, Spanish startup Kuapay enabled customers to pay for any purchase by activating a Kuapay virtual wallet, which generated a QR code for the merchant's barcode reader to identify. The QR code linked the participating merchant to the customer's Kuapay account, which was in turn linked to his or her credit and debit cards or bank account. The service, originally available only in Spain and Argentina but later introduced in the United States, allowed users to view and manage all of their purchases across multiple cards in one place. Unlike PayPal's current and rumored systems, Kuapay did not completely bypass MasterCard or Visa but offered mobile carriers an alternative to NFC technology that required little to no new infrastructure. To use QR codes, consumers needed only a smartphone capable of generating and displaying a QR code and vendors needed only a camera and scanning software, which most already had in the form of barcode scanners.

Finally, some merchants launched their own efforts rather than waiting for the payments industry to sort itself out. Such an endeavor only made sense for merchants with massive scale, a high volume of transactions, and expertise in developing consumer-focusing applications. One such merchant was Starbucks, which launched its own QR-code payment system at stores in Seattle, San Francisco, and New York City in 2011. Using its proprietary mobile application, customers were able to activate a QR code to pay for products using their Starbucks Card accounts, which as of July 2011 accounted for approximately 20 percent of Starbucks in-store transactions.[21]

[20] "What Is a QR Code?" http://www.qrcode.com/en/about (accessed October 7, 2013).

[21] Jennifer Van Grove, "How Starbucks Is Paving the Way for Mainstream Mobile Payments," *Mashable*, June 28, 2011, http://mashable.com/2011/06/28/starbucks-mobile-pay-tech.

The History of Square

Founding

In 2009 a chance interaction between a seasoned Silicon Valley entrepreneur and his artist friend was the genesis for a completely different approach to mobile payments. Born in St. Louis, Missouri, and educated at New York University, Jack Dorsey first experienced entrepreneurial success by co-founding Twitter with Biz Stone and Noah Glass.

While still the chairman of Twitter's board of directors, Dorsey heard his friend James McKelvey, a glass blower who sold high-end decorative glass faucets and home furnishings, express frustration with his inability to accept credit cards. McKelvey and Dorsey began to brainstorm ways to make it easier for small, low-volume merchants to accept credit and debit cards without paying exorbitant fees.[22]

Small merchants in the United States typically began accepting credit cards after they were contacted by independent sales organizations offering to set them up in exchange for a monthly fee, a gateway fee, and the cost of a card reader, which could run several hundred dollars. In addition, the issuing card company would charge a percentage fee on every transaction; the fee typically ranged from 1.79 percent to 4 percent. Approximately 70 percent of applications for merchant processing accounts were either never completed (largely because of the cost of purchasing a credit card reading terminal) or were rejected by the acquiring bank because of insufficient transaction volumes or inadequate creditworthiness. As a result, the Federal Reserve Bank of Philadelphia estimated that just 20 percent of the 30 million U.S. businesses with sales of less than $100,000 accepted credit cards in 2009.

Within a month, Dorsey and McKelvey had built a prototype device: a small square block, roughly the size of a quarter, containing a magnetic stripe reader that plugged into Android and iOS mobile devices through the headphone jack. Using the device (whose shape gave the fledging company its name), a card could be swiped and a credit or debit transaction securely processed anywhere using the mobile device. After presenting the product at the 2009 Allen & Company Sun Valley conference, Square raised a reported $10 million at a $45 million valuation, lofty even by the standards of the day.[23]

Square acted as a payment aggregator, which is to say that it owned its own merchant account and charged fees in exchange for allowing other businesses to accept credit card payments and bank transfers on that account. Square's value proposition offered two benefits to merchants. First, it offered a more transparent fee structure and lower cost of entry. Square was effectively an acquiring bank and had reached a sufficient scale of transactional volume that it could extract price concessions from the card association. As a result, for any transaction processed with a

[22] Noah Robischon, "Square Brings Credit Card Swiping to the Mobile Masses, Starting Today," *Fast Company*, May 11, 2010, http://www.fastcompany.com/1643271/square-brings-credit-card-swiping-mobile-masses-starting-today.

[23] Michael Arrington, "Square Worth $40 Million Before Launch," *TechCrunch*, December 1, 2009, http://techcrunch.com/2009/12/01/square-worth-40-million-before-launch.

Square reader, merchants paid a flat $0.15 fee plus 2.75 percent of the transaction value, which eliminated hidden fees. Perhaps more important, Square gave away its reader at no cost to anyone interested in using it. Later, Apple Store, Best Buy, Target, and Walmart began selling readers for $9.95 that included a $10 credit for the purchaser's Square account.

Square used its Series A funding to finance a 50,000-user pilot program in January 2010. By November, the pilot had proven so successful that the company was quickly able to raise an additional $27.5 million in a Series B round led by Sequoia Ventures, at a $240 million valuation. Square launched in November 2010 and soon was processing millions of dollars of credit card transactions per week. In April 2012 Square received a strategic investment from Visa. (Square declined to reveal the amount Visa invested.)

Partnership with Starbucks

In August 2012 Starbucks abruptly reversed course on its own QR-code system and announced a partnership with Square that enabled Starbucks customers to pay for in-store purchases with Square's payer application, Square Wallet. (Square Wallet offered functionality similar to PayPal's mobile payment application.) As part of the transaction, Starbucks invested $25 million in the company and Starbucks chairman, president, and CEO Howard Schultz joined Square's board of directors. Square also took over processing for all of Starbucks' U.S. credit and debit card transactions, significantly expanding Square's scale while potentially reducing Starbucks' payment processing costs.[24]

The partnership went live in November, a month after Square announced Square Directory, an online directory of merchants that used Square to process credit card transactions or accepted Square Wallet. Unlike Yelp or Foursquare, the directory offered no reviewing functionality, though it did allow businesses to advertise coupons, discounts, and other special offers.[25] Square Directory offered social networking features that enabled users to tweet, e-mail, text, or post through Facebook links to particular offers or merchants. It also helped users find the Starbucks closest to them and discover new offers on Starbucks products.

In announcing the partnership, Schultz emphasized the companies' shared commitment to build the ideal consumer experience, an objective echoed by a member of Square's communications team:

> *Starbucks' original goal [in launching its own QR-code system] was providing a better customer experience. Coffee is their business; processing is not. And so we started working with them on the back end, because we shared this common devotion to building the best possible customer experience. Starbucks is the only coffee chain—maybe the only business—in the world that does this; they ask you your name, call you by your name when your purchase is ready, and actively try to remember your name for the duration of the time that you're in their store. It's a tremendous reason for their success—their*

[24] Claire Cain Miller, "Starbucks and Square to Team Up," *New York Times*, August 8, 2012, http://www.nytimes.com/2012/08/08/technology/starbucks-and-square-to-team-up.html.

[25] Jordan Crook, "Square Launches a Merchant Directory To Help Customers Discover New Places," *TechCrunch*, October 3, 2012, http://techcrunch.com/2012/10/03/square-launches-a-merchant-directory-to-help-customers-discover-new-places.

ability to create a place where customers feel like a regular—and it lines up with Square's total focus on building the best customer experience in the world.[26]

The Future of Square

In late 2012 Square hit an annual processing run rate of $10 billion in transactional volume excluding Starbucks, but it faced increased competition from fast-follower competitors and an uncertain landscape (see **Exhibit 3**).[27]

Organic Growth

"There are still 26 million American small businesses that don't accept credit cards," one Square employee noted in early 2013. "Obviously, there is plenty of room for organic growth."[28] The advantages to such a strategy were obvious—pursuing it would not require building new products, but rather continuing the execution of a proven model. The more than sixfold increase of sellers accepting Square Wallet (250,000 in 2012) offered hope for such a strategy.[29] Square began putting its enormous war chest to work in mid-2012 with television and online advertising targeted at small businesses still not accepting credit and debit card payments.

However, the environment had changed with the entry of fast-follower startups such as iZettle and new offerings such as Intuit's GoPayment, which offered the same services as Square in Europe and the United States, respectively. Square may already have captured early adopters, which meant that ongoing organic growth might not be sustainable at its former rate.

International Expansion

After closing Square's $200 million Series D round, Dorsey disclosed that at least a portion of the proceeds would be earmarked to fund international development. However, just as Facebook found that its success in the United States had spawned Facebook clones in several countries—some of which it purchased, others of which it elected to challenge directly—Square found established competitors in some overseas markets. Payleven and iZettle, for example, had both been recognized by the UK Financial Services Authority as authorized payment institutions. Some overseas competitors were even making plans to expand into Square's home market in the United States.

One potential obstacle to international expansion was differences in the popularity of smartphone platforms. Square's initial penetration in the United States occurred largely among merchants who were iOS users, generally considered a more design-oriented, technologically

[26] Anonymous Square employee, in interview with the author, March 14, 2013.

[27] Owen Thomas, "Square Is Now Processing $10 Billion a Year, Not Counting Starbucks," *Business Insider*, November 14, 2012, http://www.businessinsider.com/square-payments-10-billion-2012-11.

[28] Anonymous Square employee, in interview with the author, Spring 2013.

[29] Ken Yeung, "Square Ends 2012 Processing $10b Annually, 40k Retailers Onboard, Looks To Expand Globally in 2013," *The Next Web*, December 29, 2012, http://thenextweb.com/insider/2012/12/29/square-ends-2012-in-good-position-seeks-expansion-in-2013.

savvy segment. Many emerging markets, on the other hand, had much lower smartphone penetration overall and much higher market share for Android phones.

Expand the Customer Base by Moving into Adjacencies

McKelvey was a good example of Square's original core customer: a single-location merchant selling high-value items in low quantities. In 2012 Square's business shifted toward higher-volume, multi-unit chains conducting a vastly higher number of transactions, best exemplified by the partnership with Starbucks. However, there were two other partnerships that also could be interpreted as evidence of a larger shift toward big business. In December 2012 Square announced a partnership to process transactions for luxury behemoth Burberry, ostensibly in an effort to leverage Square's ease of use to improve an already high-touch sales experience at the haute couture retailer. "Burberry and Cask[30]—these are companies that are *very* focused on the customer experience. They want customers to connect with their business and their brand, and that connection will bring them back again and again and again. The Square user experience on the iPad contributes to creating that kind of magical customer experience, and the Square Wallet really does the same thing."[31]

Several months later, Square announced it would provide all transaction processing for Blue Bottle Coffee, a coffee house with eleven locations in the Bay Area and Brooklyn.[32] Square's strength in customer experience aligned well with coffee shops (as evidenced by the deal with Starbucks), but Blue Bottle's multiple locations may have indicated a shift away from the low-volume merchants that originally adopted Square to chains with lower-value, higher-volume transactions.

It was unclear if Square's business model would work with even higher-volume retailers such as Target and Walmart. Partnerships with those merchants could create conflicts with Square's new monthly billing option announced in August 2012: merchants selling products that cost less than $400 each could forego the 2.75 percent transaction fee in exchange for a flat monthly charge of $275, provided they did not exceed $250,000 in annual sales.[33]

Expand Product Offering to Existing Customer Base

Perhaps in recognition of the possibility that organic growth would be harder to sustain in its core product going forward, Square announced in February 2013 that it would begin offering what it called the Business-in-a-Box product, which consisted of two Square readers, an iPad stand, a cash drawer, and an optional receipt printer, all for $299.[34] The drawer and printer connected wirelessly to the company's iPad app, effectively creating a point-of-sale register;

[30] Cask was a high-end liquor retailer in San Francisco specializing in artisanal spirits.

[31] Anonymous Square employee, in interview with the author, Spring 2013.

[32] Square press release, "Blue Bottle Coffee Adopts Square for Its Point of Sale," February 12, 2013, https://squareup.com/news/releases/2013/blue-bottle-coffee-adopts-square-for-its-point-of-sale.

[33] James Kosur, "Square Announces Flat Rate Monthly Fee with No Swipe or Transaction Charges," *The Inquisitr*, August 17, 2012, http://www.inquisitr.com/304563/square-announces-flat-rate-monthly-fee-with-no-swipe-or-transaction-charges.

[34] Tomio Geron, "Square's 'Business in a Box' Aims To Replace Traditional Cash Register," *Forbes*, February 20, 2012, http://www.forbes.com/sites/tomiogeron/2013/02/20/squares-business-in-a-box-aims-to-replace-traditional-cash-register.

businesses only needed to purchase the iPad separately. It was too soon to measure whether the Business-in-a-Box was selling to merchants who were starting to use Square from scratch, or whether it was selling to merchants who were using it to open new locations without replacing their existing point-of-sale systems at other locations.

Square manufactured its readers, outsourcing all manufacturing and assembly of the additional products offered in the Business-in-a-Box. As Jesse Dorogusker, vice president of Square Register, explained, "The feedback we got (from merchants) was, 'Take me the last mile,'" with hardware solutions that matched the turnkey ease of use of the original Square product.[35]

Offer Additional End User–Focused Services

Some market observers suggested that Square should attempt to leverage its network of users to begin offering a suite of services comparable to those allegedly planned by PayPal. Square Wallet allowed users to pay for individual transactions wirelessly, but they could not currently use it to manage all of their credit cards and bank accounts. Square could begin to offer that functionality while offering additional financial services products for basic budgeting, scheduled bill payments, and other personal finance products.

Monetize Transactional Data

As Square's transaction volume had grown, so too had the amount of transactional data it possessed—as well as the potential value of that data. The company currently provided a handful of basic analytical reports to merchants using its readers, with simple metrics such as average transaction size, total customers, total transactional volume, and so on. "Right now we provide three reports to each seller. They can compare days of the week, compare this year to last year, track transactions by time of day . . . Right now we're at an early stage, but the data is incredibly useful and will be increasingly so, as we can eventually predict that on a rainy day, you sell more scones with coffee, or whatever [the case may be]."[36]

[35] Ibid.

[36] Anonymous Square employee, in interview with the author, March 14, 2013.

Exhibit 1: Processing Credit Card Payments

The credit card payment and settlement process in the United States was handled as follows:

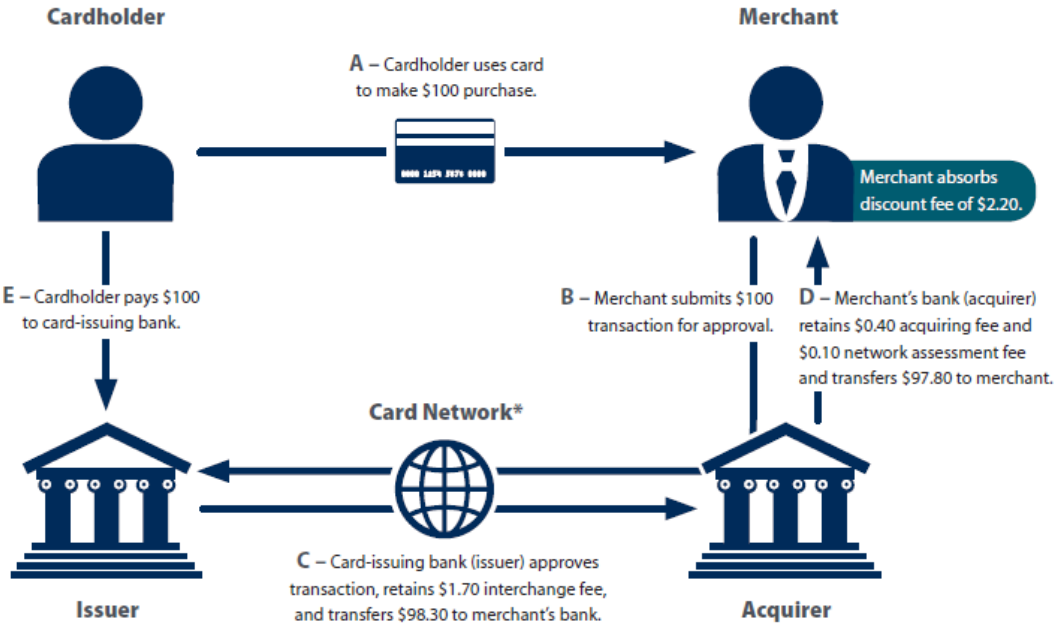
A. A cardholder used a card to pay a merchant for a purchase made in person, online, or by telephone.

B. The merchant submitted the credit payment electronically to the acquiring bank (or the acquiring bank's processor) for approval. The merchant had previously established a credit card processing account with the acquiring bank.

C. The acquiring bank (or processor) used the appropriate card association's network (e.g., BankNet for Mastercard, VisaNet for Visa) to request approval from the issuer, which approved or declined the request based on the cardholder's current balance and creditworthiness. The purchase amount less interchange fee was transferred to the acquiring bank.

D. The acquiring bank relayed the approval to the merchant, deducted additional fees, and deposited the net amount in the merchant's account.

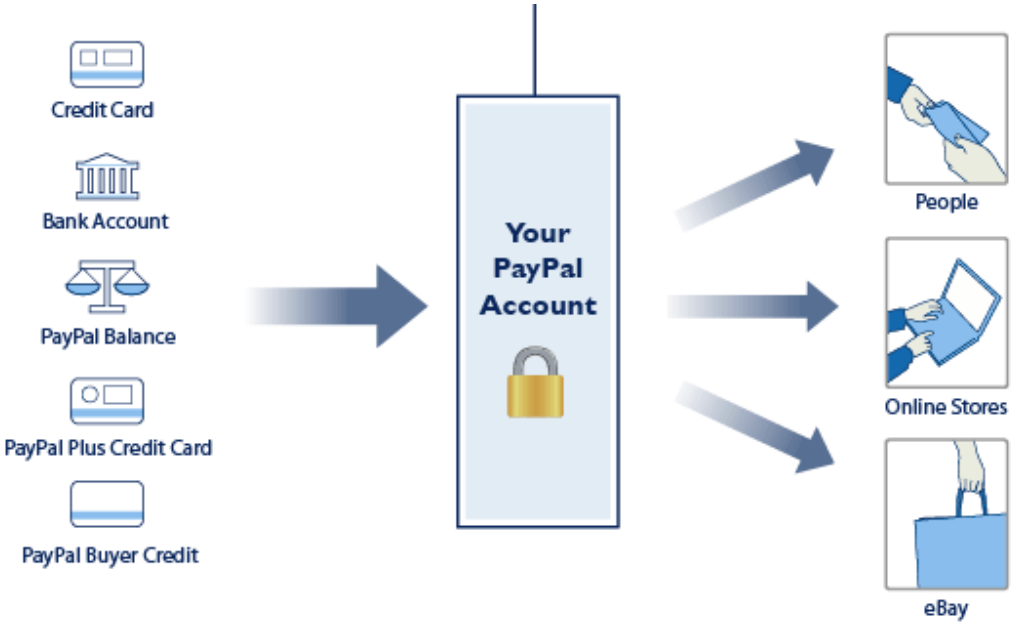
E. The cardholder received a bill from the issuer and paid the amount due without interest immediately or in multiple payments with interest over time.



Notes: Fees in this example are typical but not average. Dollar amounts, except network assessment fee, are from a similar flow chart in U.S. Government Accountability Office, "Credit Cards: Rising Interchange Fees Have Increased Costs for Merchants, but Options for Reducing Fees Pose Challenges," Report GAO-10-45, November 19, 2009.

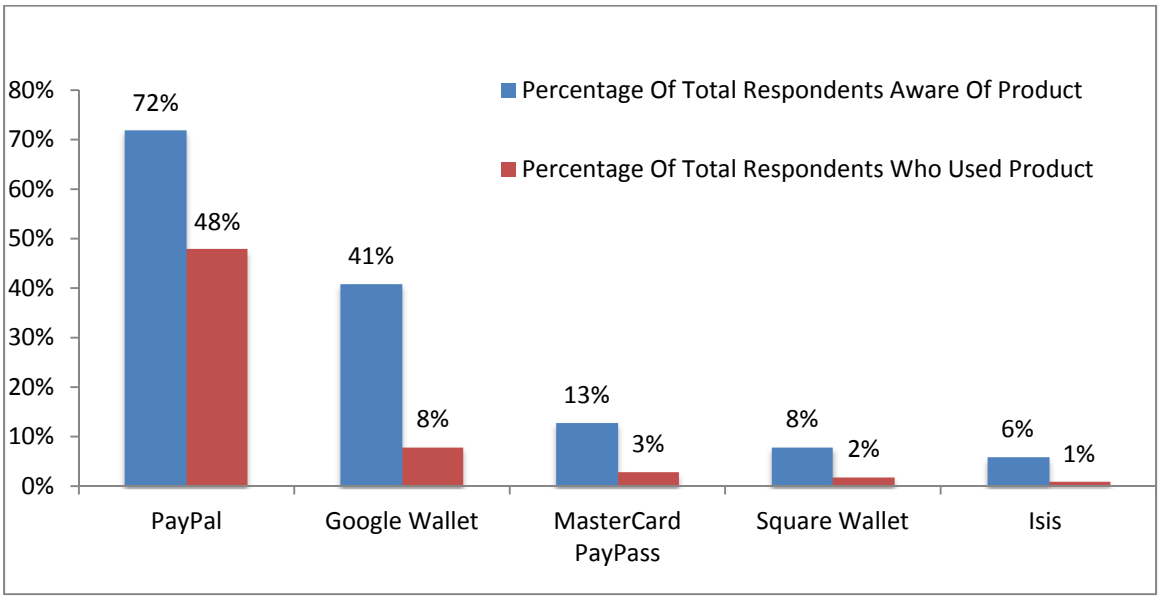
Source: Tim Mead, Renee Courtois Haltom, and Margaretta Blackwell, "The Role of Interchange Fees on Debit and Credit Card Transactions in the Payments System," Federal Reserve Bank of Richmond Economic Brief, May 2011.

Exhibit 2: How PayPal Worked



Source: PayPal, "How PayPal Works," https://www.paypal.com/au/cgi-bin/webscr?cmd=xpt/Marketing/general/NewConsumerWorks-outside (accessed October 7, 2013).

Exhibit 3: Awareness and Usage of Mobile Payment Processing Systems



Source: ComScore Digital Wallet Road Map 2013.