CHAPTER 1

Consumer Empowerment Knocking at the Door

How Mobile Is Reshaping Consumer Expectations in Financial and Retail

"The smartphone revolution is underhyped—more people have access to phones than access to running water. We've never had anything like this before since the beginning of the planet."

—Marc Andreessen, Andreessen Horowitz

"Our job is to make mobile the answer to everything."

—Eric Schmidt, Google

What happens when you equip billions of people with a computer in their pocket? Financial services and commerce will forever be reshaped. There are certain catalytic events that have such a major impact on consumer behavior that the downstream opportunities that come about create change at a much faster rate. Mobile is just such an event. Consumers are rapidly shifting to mobile as their primary computing device, with a staggering 51 percent of their Internet time happening through a smartphone or tablet![1] Yet we are still in the early stages of more dramatic changes that will come about as a result of the innate software and hardware combinations associated with mobile and tablet devices. The microphone, the camera, low-frequency Bluetooth, and biometrics will all have a significant and dramatic impact for financial institutions.

Aman Narian, global head of digital with Standard Chartered Bank, sums up this vast uncharted territory well:

> *We are at the beginning of the beginning when it comes to mobile . . . we have still not used the hardware and software integration of a mobile phone—voice message tags, talk to your mobile banking app . . . biometrics with touch ID coming to iPhone . . . there is much to do. . . .*"[2]

Aman sums up how much of the banking industry thinks about mobile—as a vast uncharted territory. Consider ING DIRECT Canada (recently renamed Tangerine). Eighteen percent of today's banking transactions are happening on mobile phones; that number was zero two years ago. More than 12 percent of all money transfers, 18 percent of all bill payments, and 17 percent of e-mail money transfers are now conducted using mobile phones.[3]

Mobile devices are becoming consumers' primary computing device, and with that, a new set of possibilities open up for financial institutions interested in capturing new markets. These new markets come about as a result of the unique software and hardware attributes associated with a mobile device.

Customer expectations have skyrocketed now that mobile can bring rich, personalized experiences to any smartphone. And as a result, it's more important than ever for financial institutions and commerce companies to operate with a "mobile first" mind-set. We are already seeing examples of how users are leveraging their mobile devices to disrupt the traditional retail commerce paradigm in the form of "showrooming." Consumers will look in physical stores, and then simply look up the item on the mobile phone and order it. The Comscore survey shown in Figure 1.1 helps explain why people are showrooming—72 percent simply find a better price online.

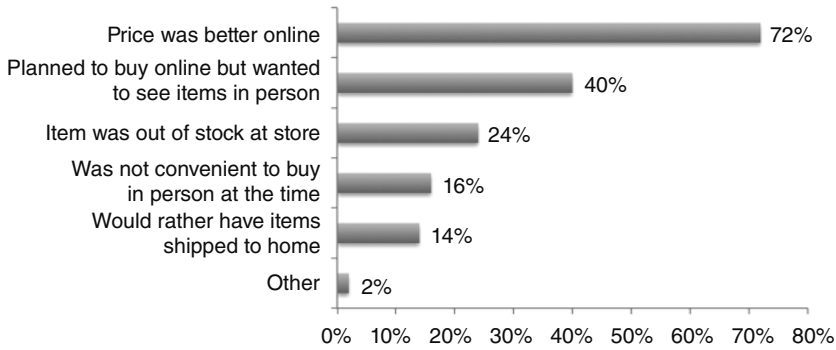

FIGURE 1.1 "Showrooming" Is Driving More Spending Online
Source: Business Insider, Comscore.

Increasingly, retailers that don't have a mobile presence will lose out to the Amazons of the world, who provide consumers with the ability to scan any item they see, and can facilitate the payment and shipping of the item with one click. Moreover, prior to even stepping foot in a store, most surveys suggest that close to 50 percent of consumers are researching products and services before they buy. As a result of consumers' using mobile devices to shop in these new ways, they have completely disrupted the traditional retail shopping paradigm. Aside from simply researching products, comparing competitors' prices, and buying goods from online sellers, consumers expect to review ratings and know their budget and bank balance—all while standing in the aisles of brick-and-mortar locations. Real-time access to products is the one significant competitive advantage physical stores have over digital ones, enabling consumers to head to a local store rather than order online and wait for the item to be delivered in days. Who needs to wait!

This disruption certainly isn't confined just to physical retailers. Most people can't remember the last time they were in a bank branch now that you can deposit checks, pay bills, send individuals money, and manage your personal budgets all from the comfort of your mobile phone. As a result, bank branches are going through similar radical changes, as is the overall mobile financial services experience. It's not just the bank branch that is affected; why go into a bank when you can instantly get approved for credit through your mobile phone?

Next, we'll discuss some of the models that are being developed to take advantage of the inherent capabilities associated with mobile and how they can ultimately benefit forward-looking financial services providers.

HOW MOBILE IS CHANGING CONSUMER BEHAVIOR

Globally, we now have more mobile connected devices on earth than people![4] As smartphones, data plans, and bandwidth continue to improve, those pocket computers, otherwise known as smartphones, have become a significant way for consumers to interact with the Internet. A few notable statistics from the Pew Research Center on U.S. consumers[5]:

- Sixty-three percent of adult cell owners use their phone to go online, doubling since 2009.
- Forty-four percent of cell owners have slept with their phone next to their bed because they wanted to make sure they didn't miss any calls, text messages, or other updates during the night.
- Thirty-four percent of cell Internet users go online mostly using their phones, and not using some other device such as a desktop or laptop computer.

- Twenty-nine percent of cell owners describe their cell phone as something they "can't imagine living without."
- Twenty-one percent of all adult cell owners now do most of their online browsing using their mobile phone—and not some other device such as a desktop or laptop computer.

Smartphones are expected to account for close to 70 percent of all smart connected device shipments by 2015. Mobile phones are not the only devices changing behavior-tablets are also impacting how consumers and businesses use technology. In fact, as of this writing, it appears that we will see more tablets shipped worldwide than personal computers.[6] A growing number of consumers are looking at two screens when they're home, such as watching TV while they use their tablet, and we are seeing a growing number of consumers who watch television and movies on their tablet or mobile phone.[7]

So what do all these statistics tell us? Given the ubiquity of these devices, consumers are entering a world in which transparency, information, and access are a given. Goods and services become commoditized unless the consumer experiences something more, whether it is convenience, loyalty, insight, or service. Banks can't possibly offer their customers a premium experience with their lending, payments, and deposit products unless they are offered in a way that adds context to the experience. For example, securing a traditional line of credit or bank account requires a fair amount of paperwork and certainly is not a real time. In a world where security and price are table stakes, consumers expect to be able to secure an instant auto loan if they are at a car dealership, pay someone in another country without walking into a branch, and deposit their checks by simply taking a picture of them. Young customers that grew up with a mobile phone in their hand will check the phone as part of their morning routine. Consumers will increasingly look to their mobile devices for insight, and to save time and money. Jack Dorsey, founder of Square, has often referred to design and simplicity as the cornerstones of any good customer experience:

> *. . . And that's something we've always believed strongly in building our technology, building our product: is that we can fade the technology away, we can fade the mechanics away so that the people can focus on a very human, natural, personal interaction and a very simple exchange.*[8]

Those companies that can help with this insight will be the companies worth partnering with!

MOBILE IS BLURRING THE LINES BETWEEN DIGITAL AND PHYSICAL

A few years ago, in the developed world, the distinction between e-commerce and commerce was fairly clear. E-commerce related to all those things consumers purchased using their desktop or laptop computer, or whatever device they used to shop online. "Physical" commerce was the art of buying something at a physical location—a retailer with real "brick and mortar," a cash register, large point-of-sale machinery, PIN pads, card swipers, and receipt printers. This clear distinction has made it easy for the U.S. Department of Commerce to report out the percentage of e-commerce sales that contributes to "total" retail sales. Judging by this measurement, the total impact online commerce has had on the economy seems quite paltry—less than 10 percent of total retail sales.[9]

Over the next few years, it will become very difficult to make this same distinction. Why? People are changing their shopping patterns in physical stores based on their mobile behavior. Purchasing something "online" and "offline" is very hard to judge now that retailers have been moving quickly to a multichannel environment. A customer may initiate a purchase online or pickup in a physical store. Or, increasingly, they may purchase something while they are in a store, and "check out" through their mobile phone. This is giving rise to what the retail and banking industry is calling multichannel commerce. Customers will use a channel most convenient to them to complete part of their experience, whether it is to research, purchase, or take ownership of an item. Kareem Al-Bassam, a friend and former PayPal colleague who headed PayPal's Point of Sale Business Development uses a nice analogy:

> *The current paradigm of large-format retail is focused on the retailer's wants and needs. Like large-scale cattle operations, consumers roam the aisles and eventually to the chute for their final moment—checkout and payment. The checkout process has been optimized for the retailer's needs: through-put, lower cost (i.e., staff), and high-margin add-on sales. It's not a very nice process for the cow. The new paradigm will force retailers to treat their consumers more like free-range chickens. If you've ever tried, it is hard to force a chicken to do much—they scratch and eat as they want. Today, empowered with technology, consumers roam the fields of retail, physical and online, creating complex and nonlinear shopping patterns. They are also in control of when, how, and where they actually finalize the purchase.*

While at PayPal, I delivered a number of presentations in which I often showed the chart in Figure 1.2. This chart shows that revenue derived by

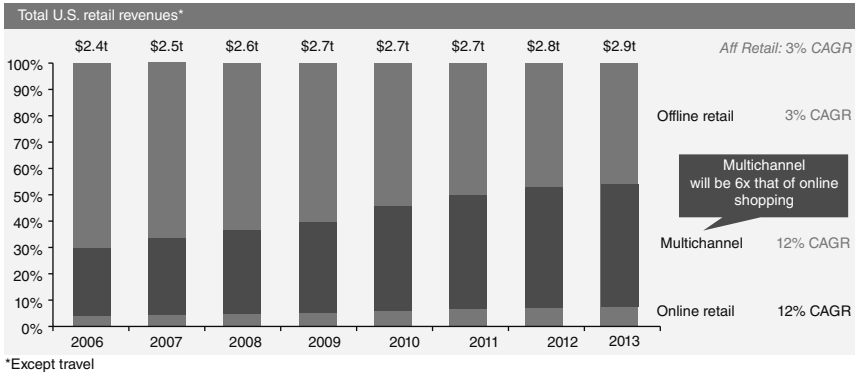

FIGURE 1.2 Total U.S. Retail Revenues
Sources: PayPal, Milo.com, Forrester Report ("U.S. Online Sales Forecast: 2008–2013," February 2, 2009).

pure online retail continues to be very small, and pure offline retail is actually shrinking, although it is over 10 times larger than online shopping today—approximately $3 trillion in the United States. Online shopping, in contrast, will account for just 10 percent of retail sales by 2017 according to Forrester Research.

However, what continues to grow significantly is multichannel shopping, which is six times greater than online shopping. That requires payment providers, retailers, and the financial services and commerce ecosystems to think deeply about how they can unite their channels. Mobile will most often be the connection point, the bridge between the world of physical and digital because, as we've seen, mobile is something that is always with most people, even when they sleep! All of these innovations point to the fact that with the invention of new ways to interact in a commerce context come with fundamental changes in the way we shop and pay for things. The mobile phone can allow the consumer to engage with the merchant when they walk in the store and know significantly more—your potential wish lists, how often you shop, what you shop for, and what promotions might be most relevant to you at the moment. It can make the process of shopping and connecting to the store much more personal. In the process, your card might already be on file, and at some point, as new ways of tagging inventory become available, payment could take place automatically upon leaving.

We also see blurring between offline and online with mobile applications that allow us to complete transactions for things in the physical world. For

example, OpenTable, an application for online reservations and ordering, has recently started its own one-click capability.[10] Consumers order and pay using their mobile phone, while dining or picking up their food in a restaurant. Samsung and PayPal recently released the ability for a consumer to use their fingerprint on their mobile phone to check in and purchase goods at physical locations where PayPal check-in capabilities are present.

What are the implications to the banking world? Today, "card not present" rates that merchants must pay to accept online credit or debit cards is much higher than "card present" rates. The economics of a card transaction will no longer be based on whether the transaction is Internet-based or done at a physical terminal. The justification for higher rates used to be valid—identity thieves could steal credit card numbers and use them online, with merchants and banks none the wiser. With the advent of biometrics on the phone and new ways of making identity verification possible, these distinctions go away. Thanks to mobile, we are in an age when we may coin a new classification of transactions, "human present" and "human not present" transactions that could ultimately better dictate the level of risk a merchant is taking on a transaction. This could then better determine the transaction fees that merchants would ultimately pay for payment acceptance. As technology enables the transactions to become less risky, and authentication can begin to be federated to multiple devices, it will become easier for this to occur. Organizations such as Fast Identity Online (FIDO) are enabling standards for this to occur, which should move mobile commerce forward in the new world of "multichannel" commerce.

Mobile Learnings from PayPal and Square

While the banking industry and press love to view PayPal and Square as competitors capable of disintermediating a bank's customers, in reality, nothing could be further from the truth. Both have unlocked a significant portion of economic growth and profit for financial institutions as they have made it much easier for merchants to collect electronic payments that ultimately come from the banking industry. As a result, billions of dollars in credit and debit card volume have been generated over the years by these institutions that have contributed to interchange revenue for the banks. Both of these institutions understand that if you eliminate payment friction in a commerce-like setting and combine these things with offers and incentives, it can contribute to significant growth of commerce on the mobile phone. Both institutions recognize how consumers are changing the way they *buy* and *interact* with merchants and how that can significantly deepen the relationships and lead to better engagement. I would argue that both of these companies have been good at seeing what could exist around the corner,

recognizing that mobile is the convergence point among commerce, the Internet, and traditional shopping at physical locations.

Square and PayPal both started out in a very similar manner, addressing a significant small business pain point—how to accept payments in a frictionless manner. Both saw an opportunity to help small businesses that often did not pass the underwriting criteria to obtain a merchant account to accept payments, usually because they were too new or too small. In the case of PayPal, its initial focus 15 years ago started with enabling online businesses to quickly accept payments in a secure manner. Square's initial focus started with serving underserved microbusinesses in the physical world that also needed an ability to accept credit card and debit card payments (see Figure 1.3). Serving these customers required completely altering the underwriting criteria used to assess merchant credit risk, and a deep understanding of design—a mobile or online experience that could be significantly better than anything on the market today. Economically reasonable,

FIGURE 1.3 Square Wallet's Virtual Punch Card
Source: Jim Bruene, Online Banking Report.

transparent, and user-friendly payment card acceptance and processing has historically been hard to find for many small businesses. However, what is really dramatic relates to the differences these businesses pay in card fees to the acquiring banks. As the cofounder of Square, Jim McKelvey recently remarked at a conference that if you were to calculate the ratio of fees small businesses pay for card processing, for every dollar Wal-Mart spends to process a credit card, a small business pays $45.[11] Paul Downs, a *New York Times* reporter, underscored the pain most small businesses face when he wrote a series of articles on his search for "reasonable and understandable credit card processing."[12]

Square focused on a "mobile first" payment system available to the masses, much like how PayPal has ultimately created an Internet layer over many existing and disparate payment and clearing systems. Square's ability to give small businesses a transparent fee structure, one that is the same for everyone, and allow businesses to quit anytime with no penalty addressed pain points felt by a critical mass of small businesses. Although the software it produced was not revolutionary, its brilliance related to its prescient timing, in seeing overarching trends in mobile and Internet, and a sea-wave of consumer behavior change. In a world with ubiquitous, real-time access to information, businesses and consumers expect complete transparency. Systems that misinform or obfuscate consumer pricing are going away, and the only way to truly compete is to embrace and partner with companies that are paving the way in solving significant consumer and business pain points.

Square hasn't stopped innovating; it has introduced a number of consumer-oriented innovations with mobile through its Square Wallet mobile application. It has introduced a number of capabilities that make using the mobile phone a better overall experience than using a card. Why? It goes back to somewhat of a recurring theme I'll mention throughout the book—payments really aren't such a big problem in the developed world, the big problem is how to include a powerful commerce context that can ultimately help the consumer gain valuable insight and save time or money. As illustrated in the mobile screenshot (Figure 1.3), courtesy of Jim Bruene, founder of Online Banking Report and the highly successful Finovate conference, digitizing the mobile punch card can add a level of convenience and insight that a physical wallet just can't do. In this case, Square is better than plastic because it can store your loyalty cards and receipts, and unlike a human being, it will not forget to bring your punch card with you and to give you that digital punch every time you frequent a store. According to Bruene:

> *This is where Square shines. . . . When its wallet is used, a virtual punch card is automatically started for you. And when enabled,*

the next time you are near the merchant, Square will automatically remind you (via popup message) to come back and buy from that merchant. And even if it's six months later, you get a second punch on that virtual card. And if all goes well for the merchant, the incremental sales mount up, and you are well on your way to a complimentary mocha. And all your previous transactions, with fully itemized receipts, are available within the Square app. It's truly the future of payments. . . .

How might a bank consider partnering with Square? Consider the recent announcement by U.S. Bank to add Square to its digital wallet options available to customers via their iOS and Android smartphones (see Figure 1.4). As mentioned in a recent article:

Customers can link their U.S. Bank credit, debit, or prepaid account to the Square application to make purchases from their smartphone.

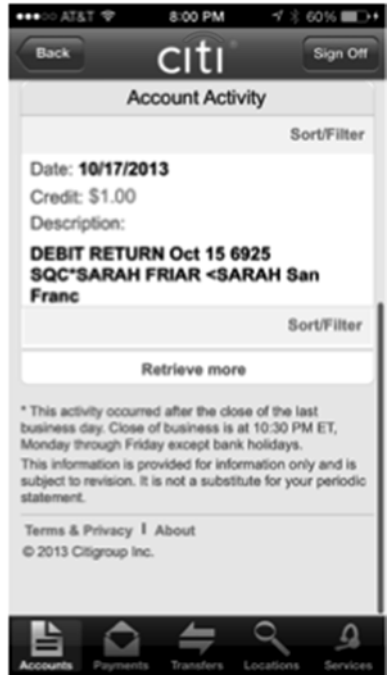

FIGURE 1.4 Receiving Money in Your Bank Account through Square
Source: Dan Schatt (screen shot of author's Citibank account credited from Square).

> *Square's technology automatically manages the transaction from the customer's U.S. Bank payment account to the merchant. Transactions are then completed without the cashier ever having the customer's account number and other sensitive data, the bank said. U.S. Bank added that its customers can choose to register with one or more wallets and shop at any store that displays the wallet's logo.*[13]

We will discuss the digital wallet in later chapters, but the opportunity that U.S. Bank surely sees is to align with a company that has brought to market some experiences consumers and merchants love. That alignment can ultimately translate into experiences in which a U.S. Bank credit card becomes the first payment instrument a consumer thinks about whenever they use their Square account. Partnering with innovative commerce providers to have "top of wallet" and "top of mind" standing can go a long way to ensure that a bank's bread-and-butter payment and lending products aren't treated as another commodity. U.S. Bank's decision to move ahead of the crowd to announce a friendly stance with Square is commendable; they've recognized that their core competency is not necessarily in design, rewards, couponing, promotions, and other areas surrounding commerce experience. Their competency lies with their banking products, their relationship with their customers, and how they continue to enable access of their products through channels and mediums that can resonate most with their customers. Dominic Venturo, chief innovation officer for U.S. Bank, has noted that the Square Wallet is complementary to U.S. Bank's payments business and is interested in enabling its banking customers to "pay where, when, and how they would like to with our products." That's great forward thinking as Square comes out with new products linked to its wallet, such as its most recent Square Cash capability, allowing consumers to pay through e-mail by simply cc'ing the e-mail address, for example, copy pay@square.com. Put the dollar amount in the subject line and add text in the body if you want and hit send. Sarah Friar, CFO of Square, was nice enough to send me a dollar, and it worked as advertised; I simply added my debit card number and expiration date, and the money was transferred (see Figure 1.5).

PayPal has also been busy looking at ways to remove consumer and small business pain points when it comes to "friction" as well.

The question becomes which friction points are mere annoyances, and which really have a significant impact. Swiping a card versus tapping or pressing a few buttons may not make much of a difference, but PayPal has been focusing on taking mobile commerce up a notch when it comes to

FIGURE 1.5 PayPal's In-Store Mobile Experience

convenience. One such feature expands "order ahead" functionality, allowing users to place orders via mobile and then pick up in-store. Some of these combine integrated offers and deals and the ability to check in to certain restaurants to pay and tip at the table via mobile device (see Figure 1.6).

One of PayPal's biggest innovations over the past couple of years has been its co-innovation with the banking industry. One such example allows bank customers to use their mobile phone to instantly send money around the world for a fraction of what it cost years ago, which offers significant value. Most research in the area of person-to-person payments indicates that a significant percentage of consumers who use such services rate speed highly, and a large percentage of users of person-to-person payment services want recipients to be able to access funds immediately. Potential adopters of outbound foreign money transfer and person-to-person real-time payments most often want to use real-time applications to send money as gifts, as payments, for emergencies, and more, to family members and friends.[14] Payment solutions that are geared toward this context can provide some significant value for financial institutions, which can take advantage of innovative partnering. At first glance, it might seem strange that PayPal would offer its payment network to banks for their use, yet peeling back the onion a few layers, what becomes apparent is PayPal's desire to be a provider of platform services, which is the thought behind their recent $800 million acquisition of Braintree, discussed later. Becoming a platform provider means that there might be some that use your assets for their own customers, and that you might not always control the user experience or the brand that is leveraging the service. However, what comes with being a platform is

FIGURE 1.6 PayPal Mobile App

relevance to many use cases that may never have been contemplated. There are many examples of innovative use cases and channels that could benefit from the assets PayPal has built over many years, including risk, compliance, and payment infrastructure. Included in this infrastructure is PayPal's flagship e-mail payment service, which today can seamlessly whisk money across many borders within milliseconds. PayPal's payment architecture has always been geared toward Internet and mobile, and as such, it has enjoyed a technology and operations advantage in many of the ways it manages risk, fraud, and the myriad of anti–money laundering and compliance requirements that banks must adhere to.

Several hundred banks have partnered with PayPal over the past several years to make its person-to-person capabilities an asset for their own customers. The "Intel Inside" philosophy PayPal has developed has proven to be a strategic benefit to those innovative financial institutions that have recognized early that companies like PayPal can be accelerators to growth. Mercantile Bank of Michigan, one of the earliest banks to partner with PayPal as a result of its platform approach, continues to enjoy satisfied customers and a strong, innovative brand. According to John Schulte, chief information officer at Mercantile Bank of Michigan:

> *Our partnership with PayPal for mobile P2P was groundbreaking at the time we launched, as most financial institutions still saw PayPal as a competitor and not a potential collaboration partner. We saw an opportunity to work with an innovative leader in the payment space, and bring a unique value proposition in mobile payments to our customers that did not exist in the marketplace. By tapping the PayPal brand and its expansive base of users already set to receive mobile payments, we were able to offer a solution that took away a lot of the barriers to mobile payment adoption. Luckily, we were not saddled with the same biased perception against partnering with innovative nontraditional players. Given our status as a community bank, there was no real overlap in our business models and more ways to complement our combined services for the benefit of the customer.*

What are some of the concrete partnering examples PayPal has done with the banking industry? Take a look at some of the mobile screenshots shown in Figure 1.7. Union Bank, a $100 billion financial institution, has cobranded their person-to-person payment offering with PayPal. USAA, recognized as one of the most innovative institutions in the industry, has also partnered with PayPal to offer money movement capabilities. Credit unions such as Wescom and community banks like Mercantile Bank are all incorporating PayPal's capabilities in their mobile channels for their customers.

FIGURE 1.7 Mobile Screenshots
Source: Dan Schatt (iPhone screenshots of banks utilizing PayPal).

Money originates with a bank customer and arrives in a recipient's PayPal account, which can be opened immediately if the recipient does not have a PayPal account.[15] What's more, PayPal's highly innovative partnerships with companies such as MoneyGram allow the recipient to deposit or withdraw cash at many locations simply using their mobile phone. In the case of MoneyGram, a customer can simply indicate to the MoneyGram agent where they would like to pick up the cash, and can immediately withdraw money. What makes these innovations particularly interesting is that the banks can now charge their customers for real-time international money movement at a fraction of the rate of a normal wire transfer. What's more, the banks can, to a large degree, control the user experience on their mobile channel and can partner with a trusted provider, who can help them navigate the myriad of complex money transmitter laws. Often, technology companies such as PayPal can more easily architect their systems to help banks meet and exceed various regulatory requirements required of them.

Mobile Commerce through Tokenization

We've just discussed how banks can align with tech companies such as PayPal and Square to keep mindshare with their customers and develop possible revenue streams. While PayPal and Square both continue their push to unite e-commerce, m-commerce, and physical commerce, other democratizing elements of mobile commerce are beginning to light up that will allow

financial institutions to play a bigger role in commerce than they have done historically. This will become increasingly important as mobile commerce spend continues to accelerate. Addressable spend for mobile commerce alone was valued at $100 billion in total volume in 2013, growing to over $200 billion in 2016.[16] Some research firms have predicted that we will see a full 25 percent of all online commerce happening through the mobile phone by 2017. These numbers could be considerably higher as businesses begin to think "mobile first" and design their experiences in ways that will allow a more seamless customer experience.

There is a lot of talk in the industry about where mobile payments are headed. What continues to be important is the value associated with payments results from the many services around the payment, which makes commerce more valuable. Since payments are largely a commodity business for banks, the opportunity to partner with those who can bring new, valuable experiences to their customers is what matters. Many of the drivers that will ignite mobile commerce will be discussed more in future chapters, but the single most important driver is the emergence of the digital or cloud-based wallet. That is, sensitive information no longer needs to be stored on a mobile phone. A bank ultimately stores that information somewhere far away on a network server behind a firewall at multiple undisclosed locations. A thief could steal the phone, but never actually steal your credit card—for that, they would have to know your online user ID and password. The emergence of "cloud" is so important because it can create a "token" in place of your payment instrument. Tokenization relates to the process of replacing your sensitive information with symbols that retain the information without compromising security. This is very important when it comes to commerce and security, since most small businesses want to minimize the amount of information they need to keep, to increase security and minimize the work they need to do to comply with government regulations.

Most payment experts are very familiar with the term PCI (payment card industry) standards, which specify that no credit card numbers can be stored within retailer point-of-sale terminals or in their databases. To be compliant, businesses either have to invest in expensive systems and encryption standards that allow them to be compliant or outsource payments to a provider that offers a tokenization option. The provider is responsible for issuing the token value, and ultimately is accountable for ensuring that sensitive card data stay safe. In this case, the provider will convert the numbers into randomly generated values (tokens) that can be used only within the context of a unique transaction.

This technology has become an enabler for the banking industry. It means that banks and retailers alike can now leverage very innovative service providers that can safely digitize payment instruments into various forms,

allowing consumers and retailers to leverage the mobile phone for commerce. The mobile device has introduced unique qualities such as the portability of the technology and additional factors inherent to the mobile device, including multimedia services, global positioning system (GPS), Internet access, mobile telephony, camera, and social media, which could all impact the payments environment.[17]

The Mobile Camera—It's Not Just for Pictures Anymore!

These days, it might not seem so revolutionary to use your smartphone to take a picture, but it certainly is proving to be an incredibly powerful tool for banks and payment companies in a variety of ways. Aside from alleviating one of the main reasons consumers frequent the bank branch, depositing checks, the camera is playing an even larger role in how the commerce and payments experience will be forever altered. Imagine a future in which you can take a picture of a fabric with an intricate pattern in a store window and immediately access information about the item and purchase it instantly from the location of your choice. eBay's Red Laser is working on just such an experience. In the United Kingdom and Asia, you don't even have to imagine some of the opportunities that have now come about thanks to the mobile phone camera—truly virtual shopping. South Koreans, noted for their tech savviness, have been some of the first to sample what Tesco has in store for the future. Banks take note—Tesco found a way to become relevant in a new market in which it had not much of a brick-and-mortar presence. In this example, Tesco printed 500 of its most popular products on high-resolution paper with barcodes, and posted them at train stations. The intent was to allow busy consumers with no time to head to the supermarket to simply buy their groceries by taking a picture of the barcodes next to the pictures. In effect, it created virtual aisles featuring food on what was designed to look like grocery store shelves. Consumers would use the Tesco application to take pictures of the items and pay, and the goods would then be delivered to the customer's doorstep. As long as orders were placed before 1 P.M., their items could be delivered the same evening, making the virtual experience even less cumbersome than a real shopping trip! The shopping application is the number one application in Korea, with over 900,000 downloads since 2012. Tesco is now expanding to bus stops and other public areas that can enable customers to do their shopping from wherever they are. These initiatives point to the fact that it is increasingly important for banks to partner with companies that are actively making these new experiences possible and linking payment instruments to their applications.

Banks are continuing to leverage the camera to allow their mobile applications to take full advantage of new possibilities. Mitek, a leading

provider of mobile services to financial institutions and a pioneer in enabling remote deposit capture of checks through the mobile phone, continues to come up with new opportunities for banks. U.S. Bank recently signed up for its latest service, allowing customers to conduct a balance transfer to a U.S. Bank credit card by taking a picture of a credit card payment coupon in the bank's mobile application.[18] Another popular application, mobile photo bill pay, allows bank customers to take a photo of a bill and pay. Mitek has indicated that bank customers in the 25-to-34 age range are three times more likely to use this service. With statistics like these, it's easy to see where social trends may be heading and how many customers will be gravitating to their mobile phone to fulfill most of their financial service needs.

The Mobile Microphone—Offers and Payments through Soundwaves!

One of the more exciting areas of financial innovation is the ability to conduct basic transactions with voice commands. Several banks offer voice control technology, and some, such as Standard Chartered, have been experimenting with artificial intelligence when it comes to customer service. Others, such as USAA have had Apple Siri-like customer service in place for a few years now, to great effect.[19]

However, as we are starting to see, there is much more that can be done with the mobile microphone than providing virtual customer service—it could very well be the way customers pay and are introduced to offers in the future. Traditionally, communicating between mobile devices has been challenging and complex, but companies like Chirp that offer an iPhone application today allow users to send links to each other using sound waves. Way2ride is another application produced by Verifone, a payment services company that already processes a significant amount of volume for New York City taxicabs. Clinkle is another company that has indicated it plans to offer payments through sound waves. It raised $25 million in funding on this promise from notable venture capital firms such as Accel Partners, Andreessen Horowtiz, Peter Theil, and Intuit. It appears it will use high-frequency sounds that smartphones and tablets can pick up to transmit data over short distances.[20] The Clinkle accounts will be tied to existing bank accounts or credit cards, and merchants would need the same application installed on their mobile devices. Why is there so much time and attention on sound waves with mobile devices? Most all devices have a microphone and speaker, the two prerequisites needed for widespread adoption. The technology is so widespread that this could work even beyond smartphone users to those who have lower-end devices.

Alipay, the payments company partly owned by China's e-commerce giant Alibaba, has also launched a sound wave mobile payments capability in the Beijing subway. It uses white noise generated by a smartphone-to-smartphone transaction to carry digital information to another device. As reported in *Techcrunch,* "to use the sound wave payment system, customers open the Alipay Wallet app on their handset while holding it close to a sensor on the vending machine, and wait for it to make a 'shoo-shoo-shoo' noise." Wang Yu-ming, Alipay's business development director, told Xinhua that each sound transmission is unique to the transaction and is valid for only five minutes because of security reasons (each transaction takes less than a minute). If the sound payment's Beijing subway launch proves successful, the system could potentially be implemented in convenience stores, supermarkets, and department stores.

While it is still too early to determine if there is a future for banking and payments through soundwaves, it is clear that we will see some disruption leveraging the mobile phone and speaker. If you are with a financial services institution, seeking out companies in this space who are gaining a following with customers, it is certainly worth developing potential partnership opportunities.

NFC's Rebound and the Promise of Host Card Emulation

One of the most hotly debated topics about mobile technologies over the past few years has been the development of near field communications (NFC) a wireless technology standard that is a close cousin to radio frequency identification (RFID). Both technologies use radio signals for tracking, but it is NFC that has been of most interest as a payment technology. Until now, NFC has required a costly set of terminal changes for retailers and mobile companies to agree on standards; the problem has historically been that both the telco world and the banking world would like to own the customer and control the secure element (SE), typically a microchip capable of securely hosting application and confidential data by a set of trusted parties. Both banks and telcos have wanted their own designs on the SE, to have control over the customer experience. This multi-industry battle has led analysts to reduce their forecasts by over 40 percent NFC's transaction value has been reduced by more 40 percent, and to account for just 5 percent of total transaction value in 2017.[21]

Google's recent innovations may have helped solve some of these underlying problems. In one of its recent Android releases, it focused on a term called *host card emulation* that effectively allows communication to happen from an NFC controller to an application running on the Android handset. Aside from potentially alleviating the need for specific

phone architecture, it could also alleviate the need to have a significant number of ecosystem participants that would have to be involved to securely load credentials on a secure element. Cherian Abraham, an expert in the space and longtime commentator, recently wrote the following in his blog:

> *. . . It had become absurd that one must enquire upon Carrier, Platform, Issuer and Device support before installing an NFC payment app, much less use it. Talk about fragmentation. This was a problem only Google could begin to fix—by removing the absurd limitations put in place in the name of security—but in truth existed because of profit, control and convenience.*[22]

FIGURE 1.8 Discover Card

Google's challenge until recently has been the confinement of its own Google Wallet to Sprint handsets, since Verizon and others effectively blocked them from offering NFC capabilities, but their breakthrough could potentially mean much more merchant and consumer adoption of their Google Wallet. Banks would do well to consider Google as another potential mobile wallet partner to work with if consumer adoption picks up. How? Consider what Discover (see Figure 1.8) has done recently. The card company has marketed to its user base the ability to load up a Discover card to a Google Wallet account. As people gravitate to using mobile wallets to manage their everyday spending and their various offers and coupons, the card will naturally become one of the payment instruments top of mind when spending. This becomes increasingly important as the payment itself becomes increasingly invisible to the user—just another point of friction that is removed in the future through a simple tap, or even by simply having your phone with you. While Google's breakthrough is a terrific boost for the industry, it surely was also motivated to make its wallet work seamlessly to protect against its biggest potential competitor in the commerce world, Apple. If Google doesn't make it simple for banks, merchants, and consumers to utilize a digital wallet, then Apple might take its place with a larger digital wallet—the iTunes account and Passbook.

Apple's Passbook

If you haven't used Apple's Passbook yet and you travel a lot, you're in for a treat. This "container" of sorts on your iPhone allows you to add anything that has a QR code attached to it such as gift cards, tickets, coupons, boarding passes, and even your Starbucks card (see Figure 1.9). Passbook is stimulating an ecosystem of commerce providers; United Airlines, Starbucks, and Fandango all get more of their applications downloaded as a result of the Passbook application. What makes Passbook so interesting is that it already has about 600 million iTunes accounts, each with a credit card or debit card attached, and is adding another 500,000 per day.[23] Given the fact that so many consumers and businesses are using its products, most wonder when the moment will come when Apple will firmly become the mobile wallet of choice that is used to shop, pay, and receive offers and promotions. Consider that today Apple receives 30 percent of the price of a downloaded application. However, the reality is that the vast majority of payments are happening after applications are downloaded, also referred to as "in-app" payments. Consider Amazon's free iPhone app. Wouldn't Apple surely love to utilize its iTunes wallet to enable payments within that app and every other iPhone app that offers commerce? Surely it would, and it is certainly in a good position to dictate the future

FIGURE 1.9 Apple's Passbook

rules of payments within its ecosystem. In the physical world of commerce, of the many things Apple's future points to, many hope that the initial release of Apple's fingerprint sensor signals the demise of future user IDs and passwords. Could we be looking at a future environment where payments are only a fingerprint away? Quite possibly, but Apple hasn't made any definitive moves yet. While banks may be concerned about the subjugation of the brand inside Apple's Passbook application, the reality is that the digitization of payments offers just as many potential opportunities. We'll discuss some of the other notable developments with Apple in later chapters, but there are quite a few opportunities in store for the banking industry to leverage Passbook for offers and promotions similar to retailers. Consider Texas Roadhouse, a Texas restaurant chain that recently promoted its offers through texting, and got people to install their offer on Passbook. They claim to have generated a 37 percent installation rate, with 32 percent of users who clicked through actually redeeming the offers. These offers are particularly powerful when combining them with the location-aware feature of passes that alerts users when they're within a certain distance of the restaurant to redeem the offer. The loyalty club achieved a 45 percent net growth rate during its first six months and a 17 percent average offer redemption rate.[24] Now imagine if a bank's card is promoted in the same way. As my friend Jim Bruene has said, "The main reason Passbook is such a big deal, besides the Apple halo

effect, is that it automatically opens your 'virtual card' when you walk in to the store. Yes, you read it correctly. Automatically. Opening. Mobile. Payment. Really, just having your receipt stored safely away in the Passbook app could make the difference between using the store card versus MC/Visa. . . ." We will see how far Apple goes to enable the next generation of commerce and payments, but it certainly can and will continue to be a very powerful platform that banks can leverage with enough thought and creativity.

The Apps Phenomenon

The battle for mobile platform supremacy is now down to three platforms: iOS, Android, and Windows. With that, it has become much easier to build mobile applications for the masses, particularly in the United States. As a result, providers of mobile banking applications, who a few short years ago had to wrestle with the many competing mobile platforms and operating systems, have found themselves in a very strong business position. They are in a position to take perfect advantage of the explosive growth of tablets and the heavy interaction consumers have with them. As a result, armed with the insights as to the tablet and mobile experience, it makes perfect sense that they would naturally usurp the role of online banking provider as well. In the commerce world, we're seeing many examples of smartphone users now entrusting many more companies with their payment information, so long as the company is providing significant convenience. With the advent of tokenization, and the increasing sentiment that payment on mobile may in many ways be safer, we're seeing several mobile services crop up that handle specific tasks. Small items like chargers are useful, but imagine larger-ticket items purchased in a similar manner. At PayPal, I witnessed tens of thousands of cars purchased every year through the eBay mobile application with the click of a button. As you can see in the chart in Figure 1.10, in 2013, 23 percent of consumers feel comfortable spending $200 or more on their mobile phone. Recent studies also suggest a high percentage of smartphone users have searched for a place to eat using their phone through companies like Yelp or OpenTable, and are often heavily influenced as to which restaurants they choose as a result. Mobile applications have revolutionized quite a number of industries, not the least of which are travel agencies, map publishers, camera makers, and taxi services. What role can a bank play in the fast-moving world of mobile apps? We'll next look at some interesting partnering opportunities that are arising as a result of these trends and where financial institutions might insert themselves.

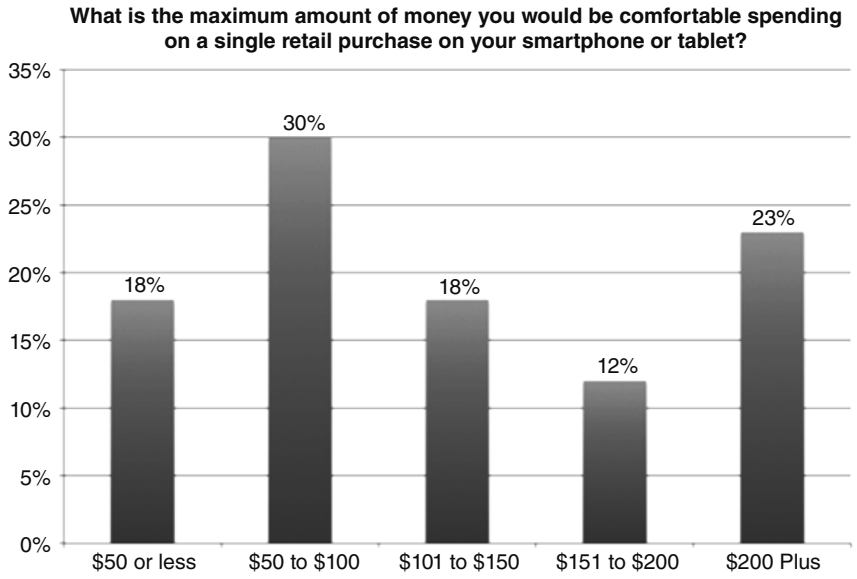

FIGURE 1.10 Consumers Are Purchasing Higher-Ticket Items with Their Smartphones
Source: Data from maxymiser.com.

THE UBER-IZATION OF MOBILE

Uber is a very fast-growing transport services company, accessed through an application on a smartphone (see Figure 1.11). It is also the poster child in describing how the mobile phone is revolutionizing industries and the customer experience. Need to get somewhere? Want a car within the next few minutes? Push a button on your Uber mobile application, and within 5 to 15 minutes a driver will show up at your door and take you anywhere you need to go. Once you've arrived, simply get out of the car and leave. There's no need to pay since your credit card is on file with your Uber account and you'll be automatically charged. This "one-click" experience has inspired a host of other one-click services that take friction out of many daily things consumers do. Watching your Uber driver approaching your location on GPS changes the experience of taxis and limos, while at the same time providing total transparency throughout the value chain, from dispatcher to driver to fleet manager.

As apps with frictionless experiences continue to increase in popularity, we see that consumers are not afraid to spend significant amounts of

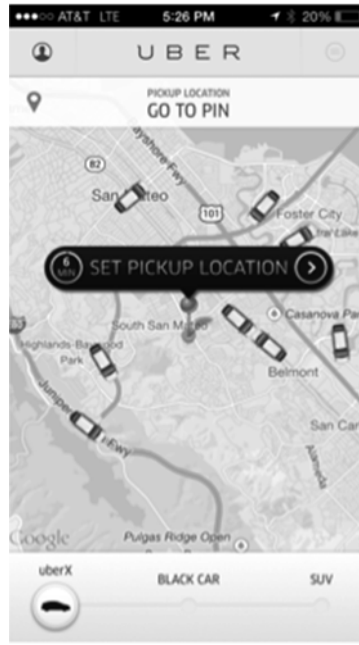

FIGURE 1.11 Uber App

money using their mobile phone. eBay's new eBay Now application (see Figure 1.12) allows consumers to receive their merchandise in an hour or less in a very personalized way. Thanks to location-based services, the courier who is immediately assigned for delivery can deliver the item to wherever the consumer happens to be. Not only do you know who your courier is, you can track them every step of the way, just as they can track exactly where the delivery should come. Not everything requires a real-time experience, but we'll see a growing number of use cases where real-time services can be incredibly valuable. More than once, I've landed in New York and forgot my iPhone charger. I don't want to have to find a store to buy it. I want it delivered to me so I can get my phone charged. In this case, not only is this a terrific experience, but mobile has fundamentally reshaped how distribution is done—a mobile-to-mobile delivery marketplace can provide significant efficiencies, and the delivery happens directly to the mobile device, so a courier can't miss where the recipient is. If the recipient walks across the street, the delivery person knows exactly where they are.

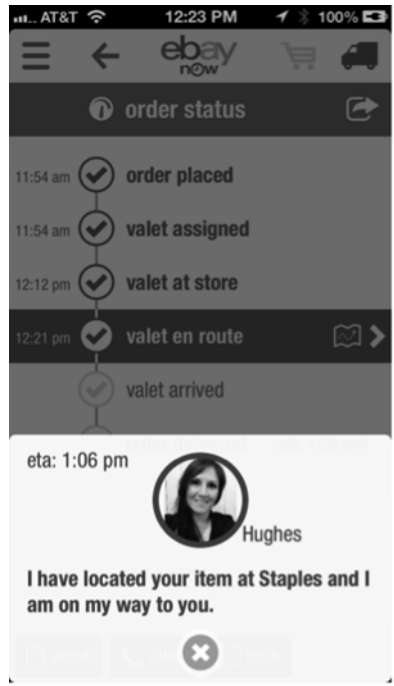

FIGURE 1.12 eBay Now

"TOP OF WALLET" TO "TOP OF MOBILE"

What is the relationship between Uber, eBay, and the impact of a growing mobile commerce trend on the financial services landscape? Today, companies like Braintree, which help enable the one-click payment services, may be some of the biggest potential partners for banks that need to find ways of encouraging use of debit or credit card accounts with their customers and the growing use of mobile apps their customers use. As it becomes increasingly easy to make purchases for any good or service, consumers will no longer have a need to reach inside their physical wallet and actively think about which payment instrument they intend to use. Over time, consumers will become immune to the marketing messages of various payment cards because they will no longer be consciously choosing which payment instrument to pay with; in many cases, the card will have already been uploaded to a cloud-based service. While companies like Uber make the payments experience nearly invisible to the consumer, the impact to issuers of credit and debit cards can be startling. How can a financial institution that issues

debit and credit cards continue to grab more shares of a consumer's wallet and the accompanying interchange revenue that goes along with it?

The Case of Braintree and Simple

Let's give a concrete example of a very innovative deal recently struck between two companies, Simple (now BBVA) and Braintree (now PayPal). If you are not in the payments business, prior to the acquisition of both companies, it's unlikely you have heard of either, but the sort of partnership these two companies formed could very well help the banking industry think about a new blueprint to capture the significant amount of spend that is increasingly happening through tablets and mobile devices.

Who is Braintree? Braintree is a company recently purchased by eBay that was one of the first to offer one-touch purchasing across mobile apps with a large and growing two-sided network of merchants and consumers. They manage the payment infrastructure for thousands of merchants that need credit card processing. Other companies in this space include Stripe, Merchant e-Solutions and large bank entities such as Wells Fargo and Chase Paymentech. Braintree processes about $10 billion in payments annually, $2 billion of which are done through mobile. They also happen to power many of the most promising start-ups, such as Uber, Air BNB, Fab, LivingSocial, Angry Birds, and OpenTable. Merchants in more than 40 countries throughout North America, Europe, and Australia accept payments in more than 130 currencies using Braintree and the power single-click purchasing for more than 40 million consumers. Since Braintree stores the payment cards on file for these companies, it started the Credit Card Data Portability initiative[25] to promote the ability to share customer payment credentials (card number, expiration date, etc.) between merchants. This is the foundation of a new product called Venmo Touch that will gradually lead to a consumer who has a card on file with one merchant, automatically having the their card on file with other merchants they sign up with. In Venmo's case, this includes companies like Hotel Tonight, TaskRabbit, and Wrapp. The firm argues that integrating their technology into their own apps offers a route to the coveted "top of wallet." It is now pitching the technology to card issuers and mobile banking providers. Who wants to type in their credit or debit card on a four-inch screen? If Braintree already has your card on file, why not just use that and get on with the service! In the case of Venmo Touch, sending money to friends and opening two new iPhone applications might require a user only to put in their payment information once.

What is Simple and its relationship with Braintree? Simple offers mobile-centric "virtual" banking with no physical branches. The company offers real-time budgeting and saving features that can forecast and automatically

show a user what he can safely spend without overdrawing not only their present account balance but also their current and future financial goals. And their data suggest that these tools appeal to the consumer as more than a quarter of a million people have requested an invite to Simple. Its focus on user experience and digital money management tools offer some very elegant user experiences to manage a consumer's digital financial life. It contracts with federally insured banks to hold its customers' money. Simple customers are accessing their accounts an average of 2.5 times per day[26] as they are able bring their bank with them wherever they go. Simple's challenge has been to figure out how to leverage the Internet to get a disproportional amount of spend on its debit cards from customers, who might just look to use any particular payment card. Now, in its partnership with Braintree, as part of the customer enrollment process, Simple can keep its customers' Visa cards on file with the payments processor.

How do Simple and Braintree work together? They are creating a consumer experience that simply prompts their customers if they'd like to make the Simple debit card the default card for purchasing on a particular device. And with that, Simple and Braintree see three to four times the conversion of consumers' on-boarding to new services. Since the payment card is already on file, why not use it?

As a bank, wouldn't it be terrific if you could offer the same level of convenience to your customers? As people demand greater convenience when purchasing from mobile devices, the stakes are rising for banks and card issuers to compete in this growing mobile economy. As the battlefield for top of wallet quickly moves from consumers' pockets to their mobile phones, partnering with a company like Braintree and its Venmo Touch service can offer a way for banks large and small (especially small!) to stay competitive in the mobile economy. Once a card is entered and stored in the cloud, a consumer can use that card in all the apps on the network in one touch. Consumers are likely to make the first card they add their default for all future mobile purchases, thus banks and card issuers can make their card top of wallet and capture the mobile purchasing opportunity.

THE QR CODE

Until now, we've been talking about how banks can try to secure a digital top-of-wallet position with respect to mobile commerce—a market specifically relating to the payment of goods and services through the Internet, using one's mobile phone. As we discussed previously, one of the best ways a bank might position itself for future relevance and growth is to ensure that consumers find it as easy as possible to utilize a bank's payment instrument

FIGURE 1.13 PayPal's Mobile Experience at McDonald's France
Source: PayPal.

when paying on their mobile phone. Certainly, key partnerships with companies like eBay, Google, and Facebook (to be discussed later) can be important in this respect, to ensure that a bank's customers can permit their card to be used automatically in as many places as possible.

We haven't yet discussed what is happening in the case of face-to-face transactions, what I refer to as *proximity payments*. Those transactions require a common way of interacting with many legacy point-of-sale systems. And as we have seen from Apple's Passbook, perhaps the easiest technology to make universally available is the QR code. Although the bar code has been around for over 30 years, it is making a comeback in a big way, now that smartphones can tokenize the information and make it available on a high-resolution screen. As you can see from Figure 1.13, PayPal has been active with QR codes, having signed an agreement with McDonald's France that ultimately allows customers to pay at the point of sale by having the cashier simply scan the QR code in the application.

WHAT BANKS CAN LEARN FROM STARBUCKS

Starbucks is arguably the most advanced retailer in the United States when it comes to the number of their consumers that are using their mobile application to make payments at Starbucks locations (Figure 1.14). CEO Howard

FIGURE 1.14 Starbucks App

Schultz has gone so far as to declare that a combination of mobile payments and social networking are central to the company's blueprint for growth.

Starbucks is a unique retailer that is able to take advantage of its recurring, caffeine-addicted user base and its tremendous retailing competency. There is a lot banks can learn from its mobile payments success. Today, mobile payments account for a full 10 percent of all in-store purchases.[27] These purchases are done by holding the phone up to a scanner at the register, similar to how groceries are scanned. Given the high resolution associated with smartphones, and the general availability of scanners, QR codes have come back in force.

How can banks take advantage of this trend? Some companies such as Paydiant allow banks to build QR codes into their mobile banking experience, enabling them to present cards in this digital format. Paydiant does not have a consumer brand; its entire business model is associated with the building of a platform and a white-labeled solution for banks and retailers. Its message to banks is that it can help them launch their own mobile payment applications instead of letting wireless carriers, payment processors, and Internet companies get between banks and their banking customers.

While this can allow consumers to leave their wallet at home, it doesn't necessarily lead to more convenience—swiping a card is still faster than taking your phone, entering your password, and having the barcode appear.

The real interesting opportunities can take place when offers, coupons, loyalty points, and promotions are combined on this medium to ultimately give the consumer more insight into their physical wallet. The QR code is a business model enabler for a bank. Why? It allows the bank to be with its customers every step of the way, as they walk into a store and check out. If banks incorporate retail-oriented "wish lists" in conjunction with location-based services, a financial institution could begin to create deals with neighboring stores to help make consumers aware of items they normally buy, and offer coupons or other points to take advantage of the offer. It also can help banks build mindshare with customers to use their payment instrument, which is increasingly invisible in any checkout experience. You, as a financial institution, can digitize your customers' payment instruments and enable them to become QR code, but the value has to be more than the payment. Are you saving your customers money? Will they get valuable points they can use? Does it save them time? If you can't check the box on any of these items, implementing a QR code won't help financial institutions to engage their customers. In fact, in might just have the opposite effect.

This holds true for mobile payments in general—unless there is some value accruing other than the payment itself, having the transaction come from a mobile phone versus a card isn't valuable. In fact, the real opportunity with payments is commerce, whether it's building rich personalization capabilities that make consumers feel that they're getting offers that suit them personally to more valuable recommendations of goods or better offers. Financial services firms need to be thinking more about the value created around the payment, rather than the payment itself, and that requires thinking differently about design, products, and partnering.

LEVELING THE PLAYING FIELD WITH LEVELUP

For banks today, it's more important than ever to continuously scan the mobile landscape in search of any company that is showing early signs of attracting businesses and customers. Often, those companies may appear to be competitors on the surface, but in reality have completely different business models that can be highly relevant to financial services. LevelUp is one such example (see Figure 1.15). To some, it may seem like it is a payments company, enabling consumers to use its application to make purchases through their mobile phone using a QR code at the point of sale. However, in the case of LevelUp, it really is in the advertising business, making money by helping businesses generate targeted offers to consumers. LevelUp is a company that allows consumers to pay with their mobile phone at the point of sale with one tap on an application, at over 5,000 merchants that use its

FIGURE 1.15 LevelUp App

service. Although small, its recent partnership with Heartland Payment Systems should give it a larger reach into restaurants and convenience stores. It offers a combined loyalty, rewards, and payment experience that can potentially deepen bank relationships with its customers through more personalized offers. Its signature product offers deals and discounts at participating merchants. Users locate offers they'd like, and they generate QR codes on their phones that are scanned at the point of sale.

Consider how a $600 million asset bank, First Trade Union Bank, recently leveraged LevelUp's platform to drive consumer engagement on their mobile application. The bank released a mobile payment and loyalty app called FT Pay. The bank matches the savings from merchant discounts and deposits up to $25 as a new account bonus deposited directly into its customers' checking accounts. Existing bank clients can increase their savings by sweeping merchant credits into their savings accounts.[28]

Why is this interesting for banks? We continue to see new, innovative technologies that can generate more valuable commerce—more sales for the merchant and more money- and time-saving offers for consumers. While banks should really look to become a part of others' offerings, they shouldn't neglect the fact that they can take advantage of some compelling white labeling of their own. To stay relevant to consumers in this mobile-centric environment, you need to make sure you are everywhere they want you to be. Some might be interested in using their bank applications to take advantage of their commerce needs, and many more still will be interested in having their bank's payment capabilities integrated into other valuable time- and money-saving applications. How valuable could a mobile banking application that leverages partners like LevelUp be for banks? Today, LevelUp claims that its solution accounts for 4.5 percent of the volume a merchant sees when

they use a LevelUp solution and 25 percent of volume with a white-labeled solution.[29] If merchants and consumers are seeing value in these transactions, then it is something banks should be a part of as well.

LevelUp is one of many great examples of how banks can leverage others' core competencies in mobile to produce compelling consumer mobile experiences.

FROM MOBILE BANKING TO TABLET BANKING

We've discussed many innovative applications that banks should consider becoming a part of, but is there really anything that banks should be building that others may want to be a part of? The answer generally is that the most innovative banks we see will make it easy for consumers to use them in whatever context they are in. If they want to pay using Uber or receive a loan through a mobile application, consumers will do so. It's therefore incredibly important for you to be where your customers are, rather than believing if you build, they will come. Banking via mobile is the fastest-growing segment in retail banking and payments, and by 2016 the average customer will have 300 digital transactions for every one face-to-face interaction with a bank.[30] The mobile banking application today is extremely important because at many institutions, the number of online banking sessions conducted from a mobile device exceeds the number through all nonmobile channels, including branch, call centers, and ATMs. Mobile also has become much more important with the Durbin Amendment and Dodd-Frank Act, which have regulated interchange fees and reduced profits on credit cards. As a result, most banks are charging greater fees to make up for the lost interchange fees, when what they really should be doing is closing down the traditional physical infrastructure once needed to open accounts and service customers, and create more compelling mobile experiences as Simple and Moven have done in the market. We'll talk in later chapters about some of the new business models that are out there, but taking a "mobile first" approach will go a long way to ensure that financial institutions can stay relevant.

To underscore that point, consider the changing consumer behaviors we have been discussing. According to a recent survey by AlixPartners, consumers say that branch location is the number one factor they consider when changing banks. Younger customers say a desire for mobile banking capabilities is their main motive for switching. A study commissioned by Cisco found that nearly half of banking customers would even be willing to close complex transactions such as mortgages through digital interactions.[31] USAA recently mentioned that its mobile banking growth is now two

to five times faster than Internet banking, and that a significant number of their deposits now come through mobile remote deposit capture—simply taking a picture of a check. Mobile banking is already accessed by nearly half the banking population and will become the epicenter of banking and payments. It is especially important to recognize that as a dominant interaction point, the user interface becomes absolutely critical. Intuit recently found that over the past 12 months, they are seeing eight logins per week, a fundamental shift from the two logins per week they've seen over the previous 12 years! And given that one in four consumers who do mobile banking also own a tablet, in combination, consumers will log in as many as 50 times per month on multiple devices. In addition, they recently found that when it comes to mobile, the three reasons customers switch banks are (1) mobile remote deposit capture, (2) mobile payments, and (3) actionable offers.[32] What are people using the mobile phone for? Most banks and research firms point to the following:

- Checking balances
- Depositing checks
- Locating ATMs and branches
- Alerts and notifications
- Paying a bill on the go
- Managing rewards and reminders of what rewards you could be using

Mobile bill payment alone is expected to grow 44 percent in 2013[33] as friendlier user experiences make their way to the phone and facilitate a more frictionless experience. The context of what you might be interested in doing with your bank may not be right to leverage your mobile phone for everything, but this is where the tablet comes in. As consumers increasingly look to leverage multiple-size devices based on the type of their interaction, tablet banking can become increasingly important to a financial institution. What areas are ripe for tablet banking? Consider these areas that can help financial institutions build a deeper relationship with their customers:

- Registration for additional products and services
- New account opening
- Financial management

Tablets provide financial institutions an opportunity to build deeper relationships with their customers; the larger form factor allows users to see more data at one time. In addition, it provides ample real estate for cross-sell opportunities and a larger keyboard and camera to make data

entry easier. The convenient size and weight contribute to a "layback factor" that might contribute to more time spent than usual, if the application is laid out in a very agreeable, user-friendly way. Intuit has found that bill payers that use a tablet pay more bills than those using their mobile phone or a computer. One thing is also clear: tablets are largely considered entertainment devices, and it therefore must be fun to garner engagement, more like a game. As a result, very engaging financial management tools often fit well with tablet banking experiences. Tablet banking needs to be full featured to create delight and drive returns for the financial institution. Here are suggestions about what is important for tablet consumers and how to appeal to them:

- A simplified login is key. It could make the difference between a consumer's logging into your application versus a third-party application to access their financial information.
- A single consolidated view of accounts is important to users who use tablets. They expect to be able to view charts, categorize information, and get more insightful information about their finances.
- Over half of tablet owners use it to compare prices, far more often than mobile phones. If you are considering a commerce-like service on your financial application, this will be important, particularly since tablets now account for 25 percent of online retail commerce.[34]
- Tablets can allow small businesses the ability to manage their business on the go and in the field. Consider taking a tablet-centric approach to small business and corporate banking.
- Tablets can reduce teller lines in a branch by creating self-service stations. Consider offering in-branch tablet experiences.

MOBILE MODELS FOR THE EMERGING MARKETS

Globally, there are approximately 7.2 billion people, 5 billion handsets, yet less than 1.8 billion formal bank accounts. The amount of cash still moving through our world accounts for a staggering 85 percent of global payment transactions, hard to believe in countries like the United States, where everything seems to revolve around a Visa, Mastercard, or American Express transaction. While we are still in the early phases of massive mobile payments and a banking revolution taking place, there are some very powerful examples we'll discuss that illustrate how profound an effect the mobile phone is making on emerging economies and its contribution to financial inclusion. Part of the reason individuals in

emerging markets are quickly gravitating to mobile is for safety. Traveling with cash or storing it at home is simply a risk and often dangerous. Using the mobile phone eliminates a lot of risk; if your phone is stolen, thieves will have to know the code to unlock your phone and the one on your M-Pesa account. Business models that charge for low, frequent usage instead of generating revenue through penalty fees, float, and loans can be quite powerful in the emerging markets when they revolve around the mobile phone. As mentioned in the book *Money, Real Quick: The Story of M-Pesa,* Tonny K. Omwansa, Nicholas P. Sullivan, and *The Guardian* authors sum it up well:

> *The classic banking model doesn't map to the needs of the poor. Banks make money from a small number of relatively large transactions; mobile operators make money from a large number of relatively small transactions. The bank model is based on float, accepting deposits and lending them; the mobile operator model is based on usage, the more the better. Prepaid airtime, bought in very small increments, was the precursor and conceptual foundation for mobile money. Once you have minutes (airtime) in your phone, you are storing value, which you can use or send to others.*

As a result, many analyst firms are forecasting an explosion of mobile transfers, transferring money directly to individuals or businesses with a mobile phone. Individuals are transacting with their mobile phone much more frequently around the world (although at lower values) given the wider availability of mobile payment services, which are much lower cost than those of traditional bank services. In fact, Gartner, a research firm, forecasts mobile transfers will account for almost 69 percent of the total value of mobile payments, which is expected to surpass $721 billion in 2017, and account for more than 450 million users.[35] As financial institutions and mobile carriers alike focus more on the buying experience using the mobile phone, there should be continued growth, particularly in the emerging markets.

A few years ago, I served as a technology consultant for CGAP, an organization affiliated with the World Bank that was looking at how technology and new branchless banking models can help drive new banking models and financial inclusion. One country in particular, Kenya, has seen a dramatic impact in this area with the introduction of M-Pesa, a mobile payments service run by Safaricom, a telecommunications company backed by Vodafone, a large minority stakeholder. In Kenya, we are now seeing mobile virtual banking happening at scale. In fact, virtually every adult in Kenya has an account with M-Pesa and manages their money and their payments on their mobile phone. The fascinating thing about M-Pesa, aside from the

FIGURE 1.16 Dan Schatt (author) in Kenya with friend John Staley, COO of Equity Bank add "standing in front of an m-Pesa booth in Nairobi."
Source: Dan Schatt

fact that it is run by a mobile carrier, not a bank, is that it has literally "banked" an entire population of "unbanked" individuals. The number of bank accounts in Kenya increased from 2.5 million in 2007 to more than 15 million in 2011.[36] One study has demonstrated that the income of rural recipients of M-Pesa increased up to 30 percent as a result of money being sent more frequently. The study mentioned: "By breaking up their transfers, urban migrants end up remitting more money back home. Also, rural recipients save money when retrieving cash. They no longer need to pay for transport costs to urban centers, where most of the money transfer services are located. Instead, they make the withdrawal directly. Such an increase is vitally important for the rural recipients, who depend heavily on remittances for their livelihoods. The financial diaries reveal that such remittances constitute as much as 70 percent of rural household income."[37]

The number of branches or locations to collect and deposit cash is also staggering. M-Pesa went from 7,000 agents in 2007 to 87,000 agents in 2013 and now accounts for 60% of Kenyan GDP! Part of the secret sauce has been M-Pesa's unleashing of entrepreneurship; the creation of

opportunities for enterprising individuals to run an M-Pesa agency. Those very familiar with the service have mentioned that some agents make more than doctors, lawyers, and other professionals, especially "aggregators" that operate multiple agencies and subagents (aka cash merchants).[38] These agents operate as human ATMs and have been so successful that now banks are building their own agent-based networks beyond branches to try to increase their own customer base. According to Tonny K. Omwansa and Nicholas P. Sullivan:

> *Every day, M-Pesa transactions in Kenya outnumber Western Union transactions globally. Every day, 60 percent of all electronics financial transactions in Kenya go through M- . . . . Those big numbers actually represent a very small slice of the Kenyan money supply, less than 1 percent. But the massive flow of a small stock of money is statistical proof of the pen-up demand for a more accessible system of payments. M-Pesa is a transactional rail that in five years has created a whole new financial ecosystem, much like the iPhone in Western markets.*[39]

While there is a bank that sits behind the account, everything is controlled by Safaricom. Perhaps most impressive with this model is that M-Pesa has demonstrated that its ability to do business with the poor in a responsible way can be profitable and sustainable. In Kenya, the banks are behind and in catch-up mode, and given the pace of change, it's even hard to see how others, including PayPal could get a large share of payments or banking volume, particularly given how quickly mobile operators have captured so much of the asset.

Are there opportunities for banks to partner with the likes of M-Pesa? Equity Bank, the largest private bank in Kenya, has partnered with Safaricom to offer M-Kesho accounts. This partnership could be the next evolution in financial services in Kenya with products beyond payments, including savings, insurance, and credit, to be offered over mobile, with agents, at scale. In addition, M-Pesa's agents face greater demands for cash as the service continues to grow. Banks like Equity have an opportunity to acquire M-Pesa agents as small business clients and provide low-cost loan products to grow the agent business and ensure reliable availability of cash at agents.

First National Bank of South Africa (FNB) has been able to thrive in the new world of "mobile first" banking in Africa. The bank recently launched a payment service aimed at Zimbabwean expats that allows them to send money back to Zimbabwe in ways that cost a fraction of what Western Union or a bank could charge. Using this new solution to send $1,000, a consumer would pay of the payment, a fraction of what it cost a year ago. Until recently, consumers paid about 10 percent of the face value to send

money (e.g., sending $1,000 would cost $100); using this new solution, they pay about 43 basis points (sending $1,000 would cost just $4.30) and can send money anytime to a recipient, who doesn't need a bank account.

Recognizing that mobile would be the primary way it would be interacting with its customers, FNB did something not many banks would have considered. It began selling Apple products with its application preloaded. As a result, it became the largest reseller of Apple products in South Africa. Paul Steencamp, former head of FNB's Innovators program, summed up his bank's strategy:

> *If we could provide the means for our customer to migrate to electronic channels, we could then effectively rationalize and pass savings through these channels, offer smart devices customer to customer, get them to use our banking products and earn our rewards currency as well. . . . We are the biggest distributor of Apple products in South Africa. We have a distribution license for Apple and Samsung. Why? Our strategy is to help customers' self-service where possible. As such, we believe it is not enough to provide affordable, intuitive, easy-to-use electronic channels, but the means to afford the aspirational devices required to engage these channels. As such, we offer qualifying customers a selection of Samsung and Apple devices at heavily discounted prices, and zero to low interest rates over a variety of payback periods. This affords them the means to acquire these devices with our banking app (mobile/tablet) preloaded. Managing stock is now a core competency. The decision was a no-brainer given the strong alignment to strategy.*

WHAT'S NEXT? MORE OF THE SAME

Mobile is accelerating innovative business models faster than anything the financial services industry has ever seen. The best way to prepare for the changes coming is to develop a "mobile first" philosophy. Think about how a mobile device can be leveraged for any financial services interaction to deepen customer relationships and create a more frictionless, convenient experience. With the continued march toward greater bandwidth and resolution, better microphones and cameras, we can expect payments and other financial transactions to be most popular with customers when they don't require thought. Need to check your balance? Why input a user ID and password when you can just use your fingerprint. Need a loan? Why doesn't my virtual assistant already know that, since I'm at a car dealership? We can expect context banking

to become more prevalent; bankers will need to anticipate the needs of their customers by where they are and what they're doing. Otherwise, customers will be able to leverage the many burgeoning services that better understand a customer's needs and may be that much closer to offering a one-click or no-click alternative to existing financial services products.

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