

REACHING UNDERBANKED CONSUMERS THROUGH MOBILE SERVICES

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This report was written jointly by CFSI and Celent.

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INTRODUCTION

Underbanked consumers need minute-to-minute information about their finances, and mobile financial services (MFS) are well suited to deliver it. Although these consumers often have insufficient access to financial services, their access to mobile phones is fairly widespread. This disparity suggests a large opportunity exists for financial providers to effectively serve the underbanked population using the mobile channel. Given the sheer volume of mobile phone usage in the United States, combined with ever-increasing mobile phone functionality, there is vast potential for a robust suite of mobile financial management and transaction tools to strengthen the financial lives of underbanked consumers.

Mobile financial services are conventionally broken into three functional areas: information services, transaction services, and payments (see Appendix A for more details). This framework is helpful in defining exactly what MFS is, but the Center for Financial Services Innovation (CFSI) proposes an alternative MFS framework that parses the opportunities for providers according to the potential benefits for financially underserved consumers. In the near term, MFS can help increase consumer financial capability, make key transactions more convenient, and make customer accounts more secure. In the future, mobile financial services could be used to convert cash-based payments to electronic payments, and could eventually help increase access to financial accounts for unbanked and underbanked consumers.

This list of opportunities conspicuously omits the MFS function that has garnered the most attention, by far, in recent months: mobile payments. In particular, mobile wallets and near-field communication (NFC) payments have generated a great deal of buzz. While these emerging payments models offer some novelty appeal, they face substantial barriers to widespread adoption, including issues related to the business model and revenue potential, customer ownership, infrastructure, the value proposition across the payments ecosystem, and consumer psychology. Additional barriers exist for underbanked consumers, notably the fact that mobile wallets and NFC payments are currently structured to support existing accounts rather than new accounts.

The financially underserved population in the United States includes both unbanked and underbanked consumers. For the purposes of this paper, we refer primarily to the underbanked— those who use a financial account of some kind but also rely on alternative financial services, such as check cashers and payday lenders. Mobile financial services in the United States today have little relevance to unbanked consumers. Whereas mobile devices have created new access to financial services for unbanked consumers in developing markets, MFS have emerged in the United States largely as add-on services for the convenience of existing account holders. However, underbanked consumers have exposure to mobile financial services through bank-based checking and savings accounts, and also general purpose reloadable prepaid accounts, which can serve as bank account substitutes.

In order for MFS to become truly revolutionary for the U.S. unbanked population, financial institutions would have to begin to envision mobile devices as active channels for delivering accounts to consumers who otherwise lack access to financial services. Given the comfort and attachment that people feel with their mobile phones, and considering that many financially underserved consumers are uncomfortable with banks, mobile devices hold considerable promise to provide broad access to financial services. A scenario in which mobile devices create new access to accounts and thus increase financial inclusion would be the ultimate achievement for MFS. However, the benefits that are possible through the information and transaction services of mobile banking, though seemingly more modest, are also quite powerful and hold great potential to improve the lives of financially underserved consumers today.

THE MOBILE OPPORTUNITY



PORTABLE

Mobile phones have several attributes that make them suitable for delivering financial services to consumers. Four core features—mobile phones are portable, ubiquitous, personalized, and multi-modal—enable financial providers to use these devices to connect with



UBIQUITOUS



PERSONALIZED



MULTI-MODAL

their customers on a much deeper level than is possible with any other channel. These same features offer customers vastly improved access to their financial information.

Portable

Portability is the key attribute that makes mobile phones ideal for delivering financial information to consumers. This feature underlies all of the others that follow, as the portability of the mobile device is central to its utility to consumers generally, and to underbanked consumers in particular. Because most cell phone users carry their phones with them at all times, financial providers can use mobile phones to deliver time-sensitive information, such as fraud alerts, low-balance warnings, and overdraft warnings, and consumers can use them to get immediate account information at any time.

Ubiquitous

Mobile phone usage is ubiquitous in the United States. In 2010, wireless penetration reached 96 percent of the population.¹ And people increasingly are relying exclusively on wireless phones for their calls. In 2010, 27 percent of U.S. households had only wireless phones and no landline.² Unlike internet access at home, mobile access is consistently high across demographic and socioeconomic groups.³ In fact, segments of the U.S. population that overlap significantly with the

underbanked, such as Hispanics, African Americans, and youth,⁴ are heavy users of text messages and data.⁵

With so many U.S. consumers now using mobile phones, financial providers can be certain that mobile services will reach a large percentage of their current and potential future customers.

Personalized

Because the mobile phone is often the primary way people reach friends and family, users feel an emotional connection with their phones. Moreover, these devices house a great deal of information about the people who use them—location, purchasing behavior, interests, health, contact with friends and family, and much more.⁶ A MasterCard survey found that more than half of consumers believe a person's phone reveals more about them than their wallet.⁷ Similarly, many experts note anecdotally that consumers are quicker to miss a lost phone than a lost wallet. This suggests that financial providers can connect with their customers more personally through a mobile device than through other channels.

Multi-modal

In addition to placing calls and sending text messages, people use mobile devices to take pictures, check email, manage appointments, access maps and traffic information, edit documents, and much more. With these multi-modal devices, people can download applications to maintain a budget, track diet and exercise, access social media tools, play games, and complete a growing number of other tasks. The increasing sophistication of mobile phones increases the possibilities for financial providers to use them to interact with their customers for more complex purposes, such as check depositing and fraud detection.

4 FDIC, "National Household Survey: Results from the 2009 FDIC National Survey of Unbanked and Underbanked Households, www.economicinclusion.gov.

5 "African-Americans, Women and Southerners Talk and Text The Most in the U.S.," Nielsen Wire (August 24, 2010), http://blog.nielsen.com/nielsenwire/online_mobile/african-americans-women-and-southerners-talk-and-text-the-wmost-in-the-u-s/.

6 Robert Lee Hotz, "The Really Smart Phone," Wall Street Journal (April 23, 2011), <http://online.wsj.com/article/SB10001424052748704547604576263261679848814.html?KEYWORDS=real%20ly+smart+phone>.

7 "MasterCard Survey finds Consumers, Particularly Trend-Setting 18-34 Year-Olds, Have Sights Set on Mobile Phone Payments" (May 19, 2011), <http://newsroom.mastercard.com/press-releases/mastercard-survey-finds-consumers-particularly-trend-setting-18-34-year-olds-have-sights-set-on-mobile-phone-payments/>.

1 "50 Wireless Quick Facts," CTIA (June 2011), <http://www.ctia.org/advocacy/research/index.cfm/aid/10323>.

2 Centers for Disease Control and Prevention, "Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, January-June 2010," <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201012.htm>.

3 Mobile Access 2010, Pew Internet & American Life Project, (July 2010), http://www.pewinternet.org/~media/Files/Reports/2010/PIP_Mobile_Access_2010.pdf.

It is worth acknowledging that smartphones offer much deeper functionality than feature phones. Some evidence suggests that underbanked consumers are not far behind the general population in smartphone use. With pricing for both smartphones and data plans dropping, and with smartphones becoming increasingly available through prepaid wireless providers (who typically cater to a lower-income customer base than post-pay carriers), the underbanked have ever greater access to highly functional smartphones. In fact, Cricket, a leading prepaid wireless carrier, reported that 40 percent of its new handset sales in the first fiscal quarter of 2011 were smartphones.⁸ The company also noted a continuing decline in purchases of entry-level phones. Finally, many “non-smart,” feature phones offer at least basic access to the internet. According to the CTIA, more than 89 percent of handsets operating on carriers’ networks have internet browsing capabilities.⁹

⁸ Cricket Wireless, First Quarter 2011 Financial Results and Earnings Presentation.

⁹ “50 Wireless Quick Facts.”

BENEFITS OF MOBILE FINANCIAL SERVICES FOR THE UNDERBANKED

Top opportunities for mobile financial services and the underbanked

MFS have the potential today to:

- **Drive increased financial capability:** Timely access to account information through alerts, reminders, and more can empower consumers to make more informed choices about how and when they spend, borrow, and save.
- **Offer greater convenience:** One of the most significant benefits of mobile financial services is the added convenience of using MFS tools.
- **Lead to improved security and fraud protection:** All consumers, but especially those who are underbanked, may benefit if security advances lead to a higher level of trust between consumers and financial providers.

As mobile financial services grow more sophisticated, these tools may eventually:

- **Transition consumers** from cash to electronic transactions: Turning cash transactions into electronic transactions could benefit consumers with added convenience and potentially lower cost, while enabling providers to generate additional fee revenue on electronic transactions.
- **Improve access to basic financial accounts:** Mobile devices may eventually become a distribution channel for financial products, creating new access for the underserved.

Benefits of MFS for the Underbanked

Today:

MFS have the potential to:

- **Drive increased financial capability**
- **Offer greater convenience**
- **Lead to improved security and fraud protection**



On the horizon:

As MFS grow more sophisticated, these tools may eventually:

- **Transition customers from cash to electronic transactions**
- **Improve access to basic financial accounts**



Drive Increased Financial Capability

Mobile phones allow for two-way communication between financial providers and underbanked consumers. These communications can play a valuable role in increasing consumer financial capability. By giving consumers access to timely information about their accounts, MFS can empower them to make more informed choices about how and when they spend, borrow and save.

The theory of financial capability differs from traditional financial education in that it emphasizes behavior change over knowledge gains, and consumer outcomes over provider outputs. The most effective financial capability interventions, CFSI has found, are relevant, timely, actionable, and ongoing.¹⁰ Given the attributes of mobile phones (portable, ubiquitous, personalized, multi-modal) discussed above, these devices are particularly well-suited to aid in financial capability interventions.

Mobile phones can be used to transmit several types of information to consumers, such as account balances, reminders, and the location of the nearest ATM. These functions can generally be accessed using SMS or text message communications, although smartphone users may also use downloadable applications. The fact that many basic mobile communication functions can be conducted using a feature phone is important for serving the largest possible number of consumers.

While the services listed in the table above can benefit banked and underbanked consumers alike, they are particularly relevant for people who closely manage their account balances day to day. For example, a message alerting a consumer to a low account balance could avert a costly overdraft. On the other hand, a text alert can also empower consumers to choose to overdraft an account if that is the best option available to them at a certain time. In May 2011, Bank of America announced plans to test a new service that allows consumers to decide whether to incur an overdraft in order to execute a particular transaction. A customer who attempts a purchase that will trigger an overdraft receives a text message asking whether or not to approve the transaction. Then, if the customer approves the overdraft, he or she can avoid the overdraft fee by adding funds to the account by the end of that day.

Timely messaging or reminders have proved effective in helping consumers reduce avoidable account usage fees. For example, in the spring of 2010, CFSI partnered with prepaid program manager Ready Credit Corporation to examine behavior change spurred by email messages containing tips about how to avoid or reduce fees.¹¹ By providing targeted advice to its highest fee-paying customers, Ready Credit observed an \$11 average monthly reduction in fees assessed. Ready Credit used email messages rather than text messages for the study because of opt-in rules for text messages, but the

findings could be applied to text messages as well. In fact, research suggests that text messages may be even more effective than emails for such customer communications: According to mobile marketing firm iLoop Mobile, 90 percent of text messages are opened, compared with 10 percent of email messages. Bill

Chart 1: Financial Capability Features on the Phone

Mobile Service	Description
Account Alerts	Customers can set up alerts that are triggered when the account reaches a certain threshold balance; the financial provider then pushes this information out to the consumer automatically.
Balance Inquiries	Account holders can request various types of information, including transaction history, by texting codes to the financial institution.
Messaging/ Reminders	Mobile phones can be used to transmit information to consumers about, for example, how to reduce certain costs (e.g. the fees assessed at foreign ATMs), or to remind a customer about a pre-defined savings goal.
Bill Pay/ Bill Pay Alerts	Although bill pay is not generally available via text message, reminders about bills coming due soon can be issued automatically through text messages.
ATM Location	Text message codes can be used to request information about the nearest ATM, and about the nearest ATM with the most favorable fee structure.

10 Joshua Sledge, Jennifer Tescher and Sarah Gordon, From Financial Education to Financial Capability, CFSI, (March 2010), <http://cfsinnovation.com/node/440486>.

11 Can Email Alerts Change Behavior? An Experiment by Ready Credit Corporation, CFSI (June 2010), http://cfsinnovation.com/sites/default/files/inbrief_ReadyCredit_june2010.pdf.

continued, Drive Increased Financial Capability

pay alerts—timely reminders that a bill is due soon—also are relevant to underbanked consumers, who may have a need to hold onto their funds until the last possible moment to preserve their cash flow.

Piggymojo provides another example of the use of mobile messaging to contribute to financial capability. Piggymojo is a platform for establishing savings goals and making progress toward those goals by choosing to save rather than spend on various transactions throughout the day. When tempted to spend money on a non-essential purchase, users can save instead by sending a text message to Piggymojo. Piggymojo tracks the unspent money and counts it toward the savings goal. The system also includes a social component. People can sign up for an account with a partner, and when one partner chooses to save rather than spend, the other is alerted via text message, reinforcing the motivation to save.

Although many financial institutions and other innovators are working to make mobile payments viable, the ability to make payments using a mobile phone is not widely available today. When mobile payments become more widespread, however, underbanked consumers may benefit from the pairing of payments with financial capability tools. Within a mobile wallet containing multiple payment types—such as debit cards and credit cards—the mobile device could indicate which payment type is most favorable for a particular purchase. And with a credit card purchase, the mobile device could indicate what a purchase might cost over time, including interest payments.

Many of the functions outlined above simply offer a version of online banking tools accessible through the mobile phone. But because underbanked consumers are less likely than the general population to have consistent access to the internet they may have access to these types of services only through the mobile channel. In 2010, 77% of the U.S. population had access to the internet.¹² Access is correlated with income level and other demographic factors, suggesting significant overlap between the underbanked and those who are not regular users of the internet. As such, for underbanked consumers, who may not have access to the internet except via a mobile phone,

these types of services are newly accessible through the mobile channel.

The use of mobile devices to contribute to consumer financial capability is the most fertile and promising area for improving the financial lives of the underbanked today. Many of the services discussed above are offered broadly by banks and prepaid providers alike. Account alerts, mini-statements, and other informational services that are delivered through mobile devices are quickly becoming a commodity, rather than value-added differentiators offered by a select few providers. Still, these features will remain valuable in driving increased customer loyalty and retention.

Offer Greater Convenience

One of the most significant benefits of mobile financial services—for all consumers, and particularly for the underserved—is the added convenience of MFS tools. Many underbanked consumers hold multiple jobs in order to make ends meet and are often especially time constrained. Further, transportation is often difficult and expensive for them. For these consumers, being able to conduct basic transactions using a mobile phone can make life easier. Consider, for example, the convenience of being able to purchase prepaid mobile minutes over the phone without having to stop by a retail outlet (possibly during work hours); being able to pay bills without having to purchase a money order; being able to send money to a relative in another country without having to visit a money transfer office; or being able to deposit a check without having to visit a check casher, ATM, or branch location.

Many prepaid program managers are deepening their mobile financial services offerings, and because prepaid companies have experience serving the underbanked, many MFS features they offer are targeted toward the specific needs of these consumers. For example, prepaid program manager Plastyc offers a number of unique mobile features and functions for its cardholders. One particularly novel feature enables customers to purchase prepaid mobile minutes for themselves or for friends or family members. Plastyc cardholders can purchase prepaid minutes through their mobile phones, using their prepaid

12 Internet World Stats, Usage and Population Statistics, <http://www.internetworldstats.com/am/us.htm>.

continued, Offer Greater Convenience

debit accounts to fund the selected prepaid mobile account. If consumers want to send mobile minutes to someone else, they can add minutes to the other person's account simply by entering the recipient's phone number. In this way, mobile minutes become a form of virtual currency that can be sent from person to person.¹³ Plastyc also allows users to initiate paper checks from a mobile phone, either to individuals or to billers. These paper checks essentially function as mobile bill payments, since they can be fully executed through the mobile phone.

Immigrants who send money internationally to friends and family overlap with the underbanked significantly.¹⁴ Thus, mobile innovations in remittances could significantly benefit underbanked consumers. Through the mobile phone, remittances can be sent more cheaply, safely, and conveniently relative to current alternatives. M-Via's Boom service is an example of a remittance service that enables personal payments for the underserved. Essentially prepaid accounts that can be purchased with cash through 7-Eleven stores, Boom accounts charge a nominal annual fee, along with a small fee for each load and withdrawal transaction. Customers can then transfer money, free of charge, to other Boom account holders. The service is currently available in the United States (through 15,000 locations) and Mexico (25,000 locations), and m-Via plans to expand soon to enable transfers to Haiti.

For consumers, depositing checks into an account, such as a prepaid account, through a mobile phone could save time and expense, particularly when the alternative may be a costly check-cashing outlet. Only a handful of financial providers currently offer mobile remote deposit capture¹⁵ (RDC) for their customers, and no providers—banks, prepaid program managers, or others—are offering mobile RDC for underbanked customers. Today, the time it takes for funds to clear through RDC is too long to make this a practical solution for most underbanked consumers, who generally need access to their money immediately. Further, the fraud risk of cashing checks using RDC for higher-risk consumers is currently a significant barrier to broader deployment of the services. Nonetheless, as this technology improves, the time will shorten, fraud reduction tools will improve, and the service could

become more viable for providers and underbanked consumers alike.

Lead to Increased Security and Fraud Protection

As people increasingly use mobile devices to interact with their financial accounts, concerns have grown about the security and fraud implications of exchanging sensitive information through the mobile channel. Although precautions are warranted, mobile devices can actually improve financial security through features such as enhanced authentication, transaction alerts, and dynamic PINs. Many of these features can be paired with card-based electronic payments today, but they will likely be more tightly integrated with mobile once mobile payments are more widely used. Greater account security can benefit all consumers, but underbanked consumers in particular may benefit if security advancements increase mutual trust between consumers and financial providers.

In addition to the account management benefits of having access to real-time (or near-real-time) account information, the accessibility of this data can aid in fraud prevention. Because people keep their mobile phones with them at all times, they can quickly receive information via mobile phone about activity in their accounts. If an unauthorized transaction goes through, consumers can be alerted right away. In addition, mobile devices can be used for authentication, such as with the delivery of a dynamic PIN number to the phone that can then be used to complete a transaction. First National Bank of South Africa recently announced a security innovation that takes advantage of the unique characteristics of the mobile phone. When withdrawing cash from an ATM, customers receive a one-time PIN code through the phone that allows them to complete their cash withdrawal.¹⁶ Because the PIN is good for only one use, there is no danger that someone could steal the code and get access to the account.

¹³ D. Porteous, "The Enabling Environment for Mobile Banking in Africa," Microfinance Gateway (May 2006), <http://www.microfinancegateway.org/p/site/m/template.rc/1.9.25001/>.

¹⁴ FDIC, "National Household Survey."

¹⁵ Including USAA, JPMorgan Chase, State Farm Bank, PayPal, US Bank, and PNC Bank.

¹⁶ Stefan Constantinescu, "ATMs in South Africa now let you take out cash with nothing but a text message," intomobile blog (March 28, 2011), <http://www.intomobile.com/2011/03/28/atms-south-africa-now-let-you-take-out-cash-nothing-but-text-message/>.

continued, Lead to Increased Security, Fraud Protection

Similarly, select prepaid program managers in the United States have begun to introduce virtual cards to their customers for added security. The MetroPCS Virtual Prepaid MasterCard, for example, provides a new 16-digit account number for each transaction. The account has no physical card, since the number changes each time the account is used. Thus, there is no risk that someone could steal the card and void the account with fraudulent purchases. Today, these cards can generally be used only for internet purchases, but once a broader network of acceptance locations for mobile payments is established, consumers may be able to use virtual cards at the point of sale.

Mobile devices can also serve as a fraud reduction tool for providers, given the great depth of information they contain about their users, including the user's location, purchasing behaviors, interests, contact with friends and family, and much more. The additional information about a consumer that can be derived through the mobile phone could eventually lead to greater access to products, if providers are confident in the information that is available by virtue of the phone. In a similar way, a reduction in fraud costs for providers could eventually be possible if they can use the mobile phone to gather this deeper information about consumers. Real-time alerting is possible now, but broader use of the mobile device to aid in fraud reduction is not widely used today.

Transition Consumers from Cash to Electronic Transactions

For a variety of reasons, many unbanked and underbanked consumers transact largely in cash. According to CFSI's 2008 Underbanked Consumer Study, there are 50 million underbanked consumers in the United States who are "cash dominant," meaning that they strongly agree with the statement that they "always pay in cash."¹⁷ Relying on cash poses safety risks, makes it difficult to budget and track expenses, and limits the potential to earn interest on money saved. In addition, relying on cash can be more costly than transacting electronically, as when people cash paychecks at check-cashing outlets rather than depositing them to their accounts at no charge.

Although this opportunity needs further development, turning cash transactions into electronic transactions has real potential to benefit both consumers and providers. When consumers conduct electronic transactions, they enjoy added convenience and potentially lower cost relative to transacting with cash. At the same time, providers generate additional revenue from processing electronic transactions (e.g., through interchange fees) relative to processing cash. In fact, whereas transitioning the wider population to electronic payments via mobile devices will cannibalize from existing revenue streams for electronic payments, the same is not true with underbanked customers, who represent untapped potential for new revenue.

Many unbanked and underbanked consumers operate small-scale businesses, such as house cleaning services, crafts vending, and flea market stalls. Anecdotal evidence suggests that many underbanked and unbanked small business owners conduct business primarily in cash. For these entrepreneurs, transitioning some of their revenues to electronic payments could improve security (because they would not have to hold large sums of cash) as well as improved cash flow management. Furthermore, being able to accept electronic payments may open the door to new customers who prefer not to transact in cash. Several innovations in payment acceptance have emerged over the last year, including Payware Mobile and Square. Both products equip merchants with a card reader that can

¹⁷The CFSI Underbanked Consumer Study Fact Sheet, CFSI (June 2008), <http://cfsinnovation.com/node/330366>.

continued, Transition Consumers from Cash to Electronic Transactions

be attached to a mobile device. In addition, Paypal's P2P service can be used to receive funds both in the physical world, through Paypal Bump, and online.

Mobile devices may eventually serve as a disbursement channel for government benefits. The U.S. Department of the Treasury issued a final rule that requires all federal benefits to be paid electronically by 2013. People with bank accounts are now encouraged to set up direct deposit of their benefits payments. In 2013, recipients without bank accounts will be issued prepaid debit accounts for their benefits payments. This move will help to transition many cash-based, unbanked individuals to electronic payments. Eventually, once a broader mobile payments infrastructure is established, the prepaid cards themselves may be eliminated altogether, enabling consumers to transact purely with their phones, as has been demonstrated in models abroad.¹⁸

Several major U.S. transit systems, including MTA New York City Transit, LA Metro, and the Utah Transit Authority,¹⁹ have tested open-loop, contactless payments systems. Open-loop systems enable people to pay transit fares using any credit or debit card, rather than requiring a dedicated transit fare card (as part of a closed-loop system). Open-loop systems generally require an open-loop prepaid option, so that those without credit cards can still use public transit. Prepaid cards purchased for use in the transit system can often be adopted as a general purpose reloadable prepaid card. This can particularly benefit the underbanked, because they don't have to tie up money in a transit account that is unavailable for general use. Open-loop transit systems are related to mobile financial services because the contactless readers installed for contactless cards could be adapted for use with mobile payments, at a lower cost than transitioning acceptance devices for magnetic stripe payments. Isis – the collaborative effort between AT&T, T-Mobile and Verizon to build a nationwide mobile commerce network – announced in April 2011 that its first pilot would be the transit system in Salt Lake City.

18 Jason Beaubein, "In Haiti, Cell Phones Serve as Debit Cards," National Public Radio (January 30, 2011), <http://www.npr.org/2011/01/30/133305663/in-haiti-cell-phones-serve-as-debit-cards>.

19 Transit Payment Systems: A Case for Open Payments, First Data (May 2010), http://www.firstdata.com/downloads/thought-leadership/transit-payment-systems_wp.pdf.

Improve Access to Basic Financial Accounts

Mobile Financial Services and Financial Inclusion

In order to evaluate the potential for MFS to drive financial inclusion in the United States, it is important to examine international models that have increased access to financial products and services. MFS systems around the world have evolved in one of two ways. Those following a transformational approach have generally set out to create new access to formal financial services for the unbanked, whereas those following an additive approach have sought to deploy mobile financial services simply as a supplementary channel for existing customers.²⁰ MFS systems in the developing world have tended to follow a transformational approach, while those in developed countries have typically been additive. This dichotomy largely reflects disparities in existing infrastructure and accessibility of financial services.

In developing countries where mobile financial services have been transformational, formal banking services were generally limited prior to the introduction of MFS, and these limitations were caused at least in part by a lack of banking and payments infrastructure. In 2008, for example, only 10 percent of Kenyan adults had access to formal financial services.²¹ When Safaricom's M-PESA service was introduced in 2007, it vastly improved access and efficiency in meeting Kenyans' basic financial services needs. M-PESA enhanced the way millions of people send and receive money, solving for a distinct and poorly met need. People who had migrated to urban centers from rural villages regularly sent money back to their families in their home villages.²² But a limited banking infrastructure meant that methods for sending money home were inefficient, slow, and risky. M-PESA's person-to-person payments functionality offered a much better tool for completing these transactions.

In contrast, in developed countries such as the United States, geographic proximity to a bank branch and limitations in the electronic payments infrastructure are not the primary barriers to financial services access. While the

20 D. Porteous, "The Enabling Environment for Mobile Banking in Africa."

21 Half the World Is Unbanked, Financial Access Initiative, (October 2009), http://financialaccess.org/sites/default/files/110109%20HalfUnbanked_0.pdf.

22 Ignacio Mas and Daniel Radcliffe, "Mobile Payments Go Viral: M-PESA in Kenya," World Bank (March 2010), http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1271798012256/M-PESA_Ke-nya.pdf.

continued, Improve Access to Basic Financial Accounts

availability of suitable financial products is still insufficient, the availability of financial accounts is, in fact, fairly widespread. In 2008, 91 percent of U.S. adults had access to financial services,²³ a sharp contrast with just 10 percent of Kenyans. The FDIC's national survey of unbanked and underbanked households paints a more nuanced picture of the need for wider financial services access in the United States. While less than 10 percent of U.S. households are fully unbanked, an additional 18 percent are underbanked, meaning they rely on alternative financial services such as payday loans to meet their financial needs. Despite the great need for improved access to financial service among unbanked and underbanked consumers, formal financial services are much more prevalent in the United States. MFS development has therefore mainly focused on improving the experience of those who already have bank accounts.

Mobile and Prepaid: Potential for New Access?

Over the last few years, general purpose reloadable (GPR) prepaid accounts have begun to bridge the access gap for underserved domestic consumers. In fact, mobile payments accounts have evolved in emerging markets much as GPR prepaid accounts have evolved in the United States. Both account types are easy to obtain. They can be purchased at retail outlets and require limited personal information to open. Both typically use up-front, usage-based pricing structures. The accounts use a prepaid model of funding, so consumers can spend or use only as much money as is in the account. And both models rely on a distribution network made up of familiar merchants with whom consumers transact for other goods and services.

In some parts of the developed world, increased linkages are appearing between prepaid mobile phone accounts and GPR prepaid debit accounts. Consider an emerging trend among prepaid mobile providers in the United Kingdom. Telefonica O2 UK and Orange UK have begun to offer prepaid debit cards in conjunction with their prepaid mobile programs.²⁴ These companies are deploying debit cards as a tool to increase revenue and customer loyalty, using the logic that, first, their customers are already familiar with a prepay service model and, second, they can deepen their value proposition to customers by expanding their product lines to include a related but new offering. Meanwhile, as

²³ Half the World Is Unbanked.

²⁴ Bill Grabarek, "Why Mobile Phone Operators Are Launching Prepaid Cards," Paybefore News (May 2011), http://www.paybefore.com/articles/default.aspx?id=18368&__taxonomyid=206.

mentioned above, in the United States, prepaid program manager Plastyc has recognized the opportunity to deepen its value proposition to customers by enabling the purchase of mobile airtime using funds held in customers' prepaid debit accounts.

Prepaid debit accounts are already available for purchase through the internet, so the transition to using mobile as a distribution channel for prepaid could be rapid. Smartphone users with internet access through their phones already can purchase prepaid cards through providers like AccountNow. Prepaid debit accounts are often well suited to the needs of the underbanked, and yet only 12 percent of unbanked households and 16 percent of underbanked households have used a general spending prepaid card.²⁵ Thus, one of the best roles for mobile financial services for the U.S. underbanked population may be to increase access to GPR prepaid accounts. We see clear opportunities for partnerships between prepaid mobile operators and prepaid program managers for improving access to financial services.

The Current State of Play for Mobile Payments

Of the many features and functions available with mobile financial services, mobile payments, particularly those using Near-Field Communication (NFC), have garnered the most attention lately. There is a vague sense that mobile payments could create some vast and as-yet-unknown improvement in financial services, for providers as well as consumers. This sense of excitement is driven by the growing use of mobile devices to help people manage their lives, and by the success of international mobile payments models, which have created speculation that similar potential may exist in the United States. Each announcement about a new concept or cross-industry partnership suggests new promise for catapulting mobile payments into broad use. Yet skeptics remain convinced that mobile payments face too many barriers – a complex ecosystem of market players, a lack of business case for banks and merchants, and behavioral barriers on the part of consumers being foremost – to achieving widespread adoption, and will be nothing more than a niche play for technologically savvy consumers.

²⁵ FDIC, "National Household Survey."

Many barriers faced by mobile payments in the past seem to be falling away. NFC technology is increasingly being embedded into mobile devices, either by the manufacturer or through external devices that can be purchased separately and inserted into the phone. All Nokia phones will be equipped for NFC by the end of 2011.²⁶ The next-generation Android operating system, Gingerbread, will support hardware for NFC payments,²⁷ and rumors that Apple may add NFC capability to the iPhone continue to circulate.²⁸ Retail prices for smartphones are dropping, and smartphones are being offered through prepaid wireless carriers, making them more widely accessible. Cross-industry groups have formed, promising to resolve the ecosystem issues that have plagued mobile payments: Of all the players involved, who owns the customer? Where will revenue be derived? These coalitions have announced various attempts to establish a viable mobile payments network. Financial institutions have piloted various mobile payments solutions, and innovators have sought to create the “killer app” that will drive widespread adoption.

Yet for consumers and merchants, the value proposition of mobile payments remains questionable. Plastic payment cards work well in the United States, and today’s payment system is fairly efficient and cost-effective, making substantial improvements through mobile challenging. Although some prominent merchants have equipped their POS devices for contactless payments to accept Visa Paywave or MasterCard Paypass (both forms of contactless payments), most merchants remain unconvinced about the value of investing in new POS equipment to accept contactless or NFC payments. Most experts agree that mobile payments will eventually take off, but no one knows how long it will take.

Although mobile financial services hold promise for improving the financial services experience of underserved consumers, a number of challenges stand in the way.

In part because mobile financial services are a relatively new frontier, few research studies have examined their use by underbanked customers. There is good reason to believe that these consumers could reap substantial benefits from mobile financial services, but most of what we know about current use is anecdotal. Research into actual usage patterns specific to underserved consumers would contribute to greater understanding of what features these consumers find most useful and relevant. Further, even though the underbanked use smartphones in greater numbers than many people suspect, they remain far more likely to use feature phones. Thus, even though downloadable applications get more attention, it is important to continue to push for the development of more sophisticated text-based solutions and mobile web-based solutions, so that feature phone users will not be left out.

Mobile financial services, and particularly mobile payments, are not currently evolving in the United States as a tool to increase access to financial services. Although MFS tools are unlikely to create the same leap in access for the underbanked here as they have in developing countries – simply because access to basic financial services products is comparatively widespread in the U.S. – there is ample room for mobile devices to improve the financial lives of the U.S. underbanked population. And yet, many financial institutions have yet to recognize this population segment as a primary target for MFS. Further, most financial institutions focus primarily on mobile payments as the area most ripe for revenue generation. Many banks and other financial providers have built rich, full-featured mobile banking tools that have enormous potential for customers. But because mobile banking today is generally offered as a free service and is not currently a revenue driver, there is some risk that banks will neglect future development in mobile banking.

26 Sarah Clark, “All new Nokia smartphones to come with NFC from 2011,” *Near Field Communications World* (June 17, 2010), <http://www.nearfieldcommunicationsworld.com/2010/06/17/33966/all-new-nokia-smartphones-to-come-with-nfc-from-2011/>.

27 Tim Conneally, “What’s new in Android 2.3 ‘Gingerbread’? Tablets, NFC, Games,” *betanews.com* (December 6, 2010), <http://www.betanews.com/article/Whats-new-in-Android-23-Gingerbread-Tablets-NFC-Games/1291662842>.

28 Nick Bilton, “The Technology Behind Making Mobile Payments a Reality,” *The New York Times Bits blog* (March 21, 2011), <http://bits.blogs.nytimes.com/2011/03/21/mobile-payments-to-become-next-frontier-in-mobile-fight/>.

RECOMMENDATIONS/ TAKEAWAYS

The U.S. underbanked market is large and diverse, and financial providers who target this population can earn profits while also enabling greater financial capability and, eventually, inclusion. Serving the underbanked through mobile financial services offers particular promise, because mobile is a low-cost channel that can drive increased customer loyalty and reduce fraud risk. Across the spectrum of MFS players, providers should avoid the temptation to focus all of their energies on developing mobile payments solutions, as mobile banking tools, both informational and transactional, hold great potential for customers and providers alike.

Financial Institutions

As a low-cost channel, mobile can help to shift the value proposition for banks aiming to offer financial services to the underserved. By offering MFS, banks can increase customer loyalty and ultimately develop longer-term and more profitable relationships with underserved consumers. Banks should continue to offer the full gamut of mobile services, including text-based, mobile web, and downloadable applications, to make MFS accessible to consumers using different types of devices. Banks should also focus on offering rich mobile functionality in conjunction with entry-level accounts, such as checkless checking and prepaid.

Non-bank financial providers, such as prepaid program managers, should continue to find new ways to pair broad mobile functionality with the accounts they offer. Since many prepaid program managers have deep experience meeting the needs of financially underserved customers, they may be in the best position to find ways to offer them rich and relevant functionality that goes beyond basic text alerts. Finally, prepaid program managers should explore possible partnerships with prepaid wireless carriers, with whom they share many customers. Partnerships may lead to new opportunities for customer acquisition, as well as increased loyalty and retention among existing customers.

Financial institutions can derive several potential benefits by targeting the underserved population with MFS tools, both today and in the future.

Today:

- Increased loyalty and retention through greater customer engagement
- Potential for longer-term and more profitable customer relationships, as customers gain financial capability
- Reduced customer service costs, through new, lower-cost ways for customers to access their account information

On the horizon:

- Acquisition of new customers who are less likely to visit the branch
- New sources of fee income by converting cash transactions to electronic
- Reduced fraud costs through access to deeper information about potential customers
- Reduced fraud through real-time alerts

Nonprofit Financial Providers and Counselors

Nonprofits, especially those with direct relationships with underserved consumers, are often well positioned to create relevant financial capability tools, and when they partner with larger-scale financial providers, they can give these tools wider distribution among customers who need them. For example, through CFSI's Financial Capability Innovation Fund, Consumer Credit Counseling Service of Delaware Valley will test whether text alerts can help consumers reduce their debt. Nonprofits will play a critical role in educating consumers in using mobile financial services wisely and will be well positioned to gather data about exactly how their underserved clients use mobile devices.

Nonprofits can derive several potential benefits in targeting the underserved population with MFS tools:

Today:

- Improved and more consistent access to customers, for both delivering and gathering information
- Reduced costs for communicating with customers

On the horizon:

- New channel for distributing products and acquiring customers

CONCLUSION

Although mobile payments are not yet creating new access to financial services for U.S. underbanked consumers, mobile financial services generally have considerable relevance and potential utility to this population, perhaps even more so than to the larger banked population. Data on mobile phone usage in the United States continues to suggest that nearly all U.S. consumers use mobile devices. This means that even low-income consumers have mobile phones in significant numbers. In contrast, access to financial services is much more segmented by income level: Nearly 20 percent of households, or 7 million people, earning less than \$30,000 per year do not have a bank account.²⁹ A substantial opportunity exists to close the gap between mobile phone access and access to appropriate financial services. Although most MFS offerings in this country have focused on adding new features and functionality to existing accounts, we see a large opportunity for financial providers to create new access to financial services and eventually use the mobile channel to increase financial inclusion.

However, even in the absence of access-driven MFS solutions, features that promote increased availability of account information and transactional services for existing accounts can greatly benefit underserved consumers who do use either a basic checking account or a prepaid debit account. The most important and immediately available solution for the underbanked is in the area of financial capability—using mobile devices to deliver timely account information so consumers can make informed choices about how to use their accounts. MFS can also add convenience for underserved consumers, and mobile phones may also improve security, thus increasing mutual trust between financial providers and consumers. In the future, MFS have the potential to further the use of electronic transactions among the underbanked, and mobile devices may eventually serve as a distribution channel for financial services to this population.

Prepaid program managers will play an important role in making MFS tools accessible to underbanked consumers. Providing MFS with prepaid accounts may be a natural entry point for the underbanked to use their mobile phones to meet their financial services needs. Mobile devices may even help increase access to prepaid debit cards by bridging

the gap between mobile phones (which most underserved consumers use today) and prepaid debit cards (which few have used). In particular, we see strong potential for prepaid program managers to partner with prepaid wireless carriers to enable both players to deepen their relationships with their customers and extend the value proposition they offer them.

Outside of financial services, other industry players, such as technology vendors and government can help shift the focus of MFS solutions to be more inclusive of unbanked and underbanked consumers. Technology vendors should keep the underbanked in their sights as they develop new mobile products and services. Because this population is large and its needs are poorly met, it represents a significant, largely untapped market for innovation. Regulators and policymakers should work to foster a marketplace that encourages a broader offering of mobile financial services. The Boston and Atlanta Federal Reserve Banks have been leaders in this area, having formed a Mobile Payments Industry Workgroup to share ideas and discuss the challenges facing mobile payments in the United States. Government agencies should continue to develop a regulatory environment supportive of innovation and collaboration in this area.

All MFS stakeholders should consider the underbanked population when evaluating new offerings, and should avoid the temptation to focus on using MFS to capture and retain only the most affluent customers. By using the mobile channel to better serve the underbanked population, financial institutions can tap into a large, and in many cases, a new customer base; develop loyalty and stronger relationships with customers who have a full range of financial services needs; and generate new revenue from thousands of new transactions by converting predominantly cash users to users of electronic transactions. Because most emerging MFS offerings have focused on adding features to existing accounts, the potential of these tools to serve the U.S. underbanked population has not yet been demonstrated. That could change, however, if financial institutions begin to envision mobile devices an active channel for delivering new accounts to underserved consumers.

²⁹ FDIC, "National Household Survey."

APPENDIX A: DEFINING MOBILE FINANCIAL SERVICES

Mobile financial services (MFS) can be separated into three broad categories: information services, transaction services, and mobile payments. Information and transaction services generally offer the same functionality as internet banking, except through the mobile phone. Most financial institutions in the developed world offer mobile banking services via SMS or text message, mobile web, and/or downloadable application. Many offer all three modes, or the “triple play.” Both informational and transactional services have become fairly common offerings among financial institutions.

Informational features of mobile banking are designed to give consumers timely access to their accounts and other useful information, such as where to find an ATM or branch. Services include:

- Balance inquiry
- Transaction history
- Alerts
 - Low balance
 - Overdraft
 - Payment made: debit card, credit card, check ACH/wire transfer
 - ATM withdrawal
 - Deposit confirmation
 - Fraud alert/questionable transaction/over seas transaction
 - Password change
 - Address change
 - Pending bill/bill due
 - Pending loan payment/payment due
 - Confirmation of funds transfer
- ATM/Branch locator
- View check image

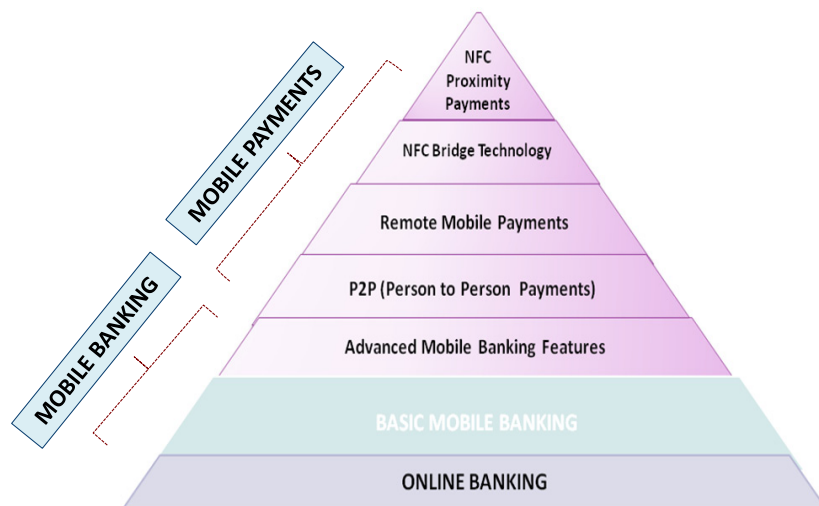
Transactional services in mobile banking are those that generate a transaction, versus merely providing information. A banking transaction involves shifting funds by the same owner. Transactional services in mobile banking include:

- Account-to-Account (A2A) transfers
- Reload prepaid or stored-value card
- Reload mobile phone minutes (top-up)
- Buy/sell investments and securities

Mobile payments involve transfers of money from one person to another. Mobile payments can include:

- Person-to-person money transfers
- Mobile bill pay
- Mobile e-commerce payments
- Payments at the retail point-of-sale (including NFC payments)

The Evolution of Mobile Financial Services



This mobile financial services pyramid, created by the Federal Reserve Bank of Boston’s Payment Research Center, depicts one possible evolution of MFS from mobile banking services to mobile payments.

APPENDIX B: KEY TERMS

A2A transfers: transfers of funds made between one person's financial accounts, such as transferring money from a checking to a savings account.

Authentication: The process of verifying the identity of a payer. Multifactor authentication uses three authentication factors: something the user knows (e.g., PIN), something the user has (e.g., mobile phone, credit card), and something the user is (e.g., a biometric characteristic).ⁱ

Contactless payments: Payments that use radio frequency identification (RFID) technology, such as tapping a credit or debit card, or a fob or other device to a merchant reader.

Downloadable application: A software application that can be downloaded to a mobile device and then used to accomplish specific tasks.

Feature phone: A lower-end mobile phone that runs on a limited software platform such as Java, rather than a complete mobile operating system. Some feature phones provide basic access to the internet, but these devices generally do not allow the downloading of applications.

Mobile web: An internet browser that is accessed with a mobile device; comparable to Internet Explorer or Firefox on a computer.

NFC payments: NFC, or "near-field-communication" payments, are payments made at the point of sale (POS) using a device such as a mobile phone to exchange data with a reader with a simple touch. With NFC payments via cell phone, the secure element (see also "secure element") embedded in the phone contains payment account information that is communicated to a reader at the POS. NFC payments could theoretically be used in place of credit card payments.

Secure element: The element that contains a payer's identification information. It can be stored in a phone's memory card, an external device that is attached to the phone, or on a SIM card.

Smartphone: A mobile phone that runs an operating system, such as Apple iOS, Google Android, Research In Motion Blackberry OS, or Microsoft Windows. Smartphones typically have a larger display relative to feature phones, better processing power, and deeper functionality.

SMS: Short for "short message service," SMS, or text messages, are text-based communications that can be sent from one cell phone user to another. Text messages are typically limited to 160 characters.

ⁱFederal Financial Institutions Examination Council, "Authentication in an Internet Banking Environment," http://www.ffiec.gov/pdf/authentication_guidance.pdf.

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About Celent

Celent is a research and advisory firm dedicated to helping financial institutions formulate comprehensive business and technology strategies. Celent publishes reports identifying trends and best practices in financial services technology and conducts consulting engagements for financial institutions looking to use technology to enhance existing business processes or launch new business strategies. With a team of internationally experienced analysts, Celent is uniquely positioned to offer strategic advice and market insights on a global basis. Celent is a member of the Oliver Wyman Group, which is part of Marsh & McLennan Companies [NYSE: MMC].

About CFSI:

The Center for Financial Services Innovation is the nation's leading authority on financial services for underbanked consumers. Through insights gained by producing original research; promoting cross sector collaboration; advising organizations and companies by offering specialized consulting services; shaping public policy; and investing in nonprofit organizations and start-ups, CFSI delivers a deeply interconnected suite of services benefiting underserved consumers. Since 2004, CFSI has worked with leaders and innovators in the business, government and nonprofit sectors to transform the financial services landscape. For more on CFSI, go to www.cfsinnovation.com

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