



Cell me the money
Unlocking the value in the
mobile payment ecosystem

Foreword



The U.S. mobile telecom sector continues to offer unprecedented opportunities for growth. At its core, an accelerated “open mobile” environment is rapidly changing consumer expectations for wireless services and products. Consequently, traditional incumbents can no longer rely on voice applications to sustain revenues. What will fill this void, however, remains unclear and will undoubtedly be a key strategic challenge for the industry in 2011.

Against this backdrop, the advent of mobile payments continues to generate excitement, provoke debate and raise hopes across a sector jaded by a series of false dawns for mobile commerce in the United States. But with all the pieces now seemingly in place, many are predicting that this will be the year mobile payments finally takes off and provides a new runway for revenue uplift across a wide range of participating industries. However, one challenge remains at the very heart of this new era - the mobile payment ecosystem remains fragmented and underdeveloped as competing technologies and standards increase uncertainty and stymie cooperation among the key players. To compound matters even more, the specter of disruptive innovation emerging from those on the periphery looms ever large in the rear view mirror of the incumbents. Once again, progress threatens to grind to a shuddering halt.

But hope is not entirely lost and a potential solution to this challenge lies in a reorganization of the core payments ecosystem. To explore this further, I am pleased to present the latest report from Deloitte Research in a series of studies exploring the open mobile phenomenon. The report takes an in-depth look at what is required for mobile payments to reach critical mass in the U.S. wireless sector. Building on insights from leading executives across the value chain, the study explores four possible scenarios in the evolution of mobile payments and explores a new concept, in the open federation model, which could provide a viable path to finally unlock value and stimulate growth.

As always, I look forward to your feedback as we continue to explore this fascinating topic!

A handwritten signature in black ink that reads "Phil Asmundson". The signature is written in a cursive, flowing style.

Phil Asmundson
Vice Chairman
U.S. Technology Media and Telecommunications Leader
Deloitte LLP

Unlocking mobile payments

Mobile payments are ripe with potential to offer convenience to consumers, new growth avenues to mobile carriers, differentiation to financial institutions, and loyal customers to merchants. However, the mobile payment ecosystem in the United States will likely remain underdeveloped for the foreseeable future. Developing a vibrant mobile payments ecosystem that brings together mobile carriers, financial institutions, merchants, and a host of others to let consumers use their mobile devices to pay for goods and services is no easy task. Industry players are optimistic, but the challenges are daunting.

The mobile payments ecosystem requires different industries to work together to bring mobile payments services to the market. However, many of the key players — financial institutions, mobile carriers and merchants — do not share the same interests. For example, mobile payments are attractive for mobile carriers as they face declining revenues from voice and all-you-can-eat data plans that flatten revenues while congesting their networks. On the other hand, mobile payments threaten financial institutions' revenues from merchant fees and existing payment instruments without providing any incremental revenues. At the same time, merchants view mobile payments as a potentially cheaper alternative to credit card transaction fees and a valuable channel to reach consumers — especially Millennials (18–26-year-olds) — that already avidly use mobile phones for more than mere phone calls.

Business models — the sharing of revenues and ownership of the customer¹ — constitute the widest part of the strategic chasm that separates key players. The dearth of mutually beneficial business models contributes to the slow progress in developing a viable mobile payments ecosystem in the United States. Remaining on the sidelines while others make the investments in a mobile payment system, however, is fraught with risk. PayPal predicts that in the next five years, a majority of the \$5.5 trillion in retail transactions that happen in brick-and-mortar storefronts will be handled by mobile devices.² Even if such a scenario seems currently far-fetched, it would not be prudent to passively allow potentially disruptive threats to develop that may pose significant challenges for incumbents down the road, especially financial institutions. Already, fledgling mobile payment services that bypass banks and credit card companies have been deployed.³

The open federation model — a common platform shared by an alliance of carriers and financial institutions — seems to be the most viable path toward a mobile payments ecosystem that promotes the interests of all the key players in the value chain.

This report shares insights from a Deloitte survey of 89 senior executives from the mobile payment value chain (see appendix) on the potential of mobile payments in the United States, the key barriers that are preventing mobile payments from taking off, and potential solutions that could help unlock their potential. The report builds on survey results, draws on lessons from mobile payment's foothold in the Far East, outlines four possible scenarios in the evolution of mobile payment and assesses its impact on key players in the value chain.



Mobile commerce in the United States has enormous potential

Mobile commerce encompasses financial transactions enabled by a mobile device and includes banking, retail payments and investing. This report focuses primarily on mobile payment — a subset of mobile commerce where a mobile device is used to make retail payments.

Respondents in the Deloitte survey were optimistic about the growth potential of mobile commerce in the United States. They predict that 24.3 percent of all mobile subscribers will be using mobile banking (73.9 million subscribers) in 2012. Similarly, they predict that the number of mobile payments users who will execute transactions on their phones for mass transit, fast food and digital goods will swell to 21.3 percent or 64.7 million of all mobile subscribers in 2012 (see figure 1).

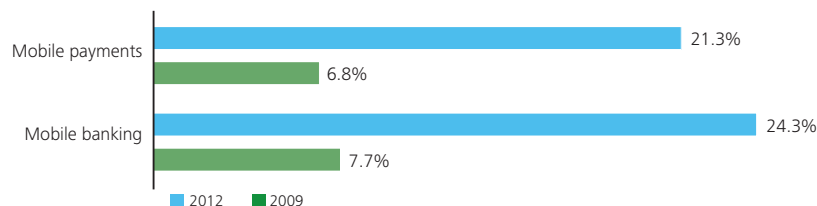
Turmoil in the financial services industry in the United States has not dampened mobile commerce deployment plans. As of 2010, 696 banks and credit unions offer some form of mobile banking.⁴ The United States is leading the world in the number of mobile commerce pilots and trials underway.⁵ Even so, examples of commercial deployment of mobile payment services are scarce. The belief among financial institutions that mobile payment is just another channel to reach consumers is changing, and mobile devices are becoming a more crucial part of competitive advantage.

Mobile commerce has the potential to help financial institutions attract and retain Millennials and cut costs by supplementing brick-and-mortar branches with a personalized, virtual branch hosted on a mobile platform. Millennials make up the fastest-growing segment of the population that uses mobile devices to conduct transactions. Roughly 20 percent of consumers in their 20s and 30s use mobile banking, compared with 10 percent of the general population.

According to the Deloitte survey, approximately 70 percent of mobile payment users will be under the age of 40 (see figure 2). Millennials' annual spending is expected to reach \$2.45 trillion by 2015,⁶ paving the way for a wide array of players in the mobile commerce value chain to target this younger population for growth.

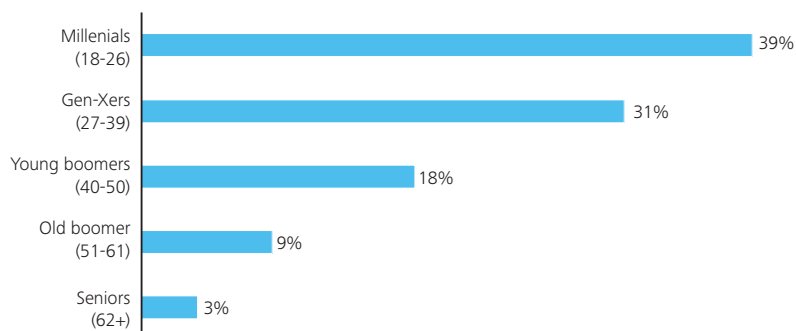
Survey respondents across the mobile payment value chain see great potential in this service, and they are optimistic about its future. Based on where mobile payment deployment stands today, that optimism may be misplaced. Currently, U.S. mobile payment services are at an early stage and encompass digital downloads, peer-to-peer (P2P) payments, and loyalty programs. However, mobile devices are already functioning as credit cards for purchases at retail outlets, movie theatres, train stations and parking meters in more mature mobile payment markets like Japan and South Korea. This is far from reality in the U.S. market, mostly due to divergent interests and the absence of a common goal among key players from different industries.

Figure 1. Prediction of mobile banking and payment services deployment in the United States in 2012. Mobile banking and payment penetration as per survey (mean)

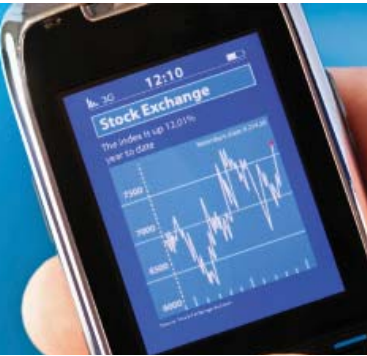


Source: Deloitte Future of Mobile Payment Survey

Figure 2. Mobile payment usage by demographic groups in 2012



Source: Deloitte Future of Mobile Payment Survey



Case study: Japan

In countries like Japan, where mobile commerce has taken off, the creation of a standardized platform led by NTT DoCoMo resulted in a developed mobile payments ecosystem. Despite being dominant in the telecom sector, NTT DoCoMo had to make strategic investments in key players across the value chain (card issuer, “megabank,” prepaid wallet provider, retailers and technology platform) to create the ecosystem. NTT DoCoMo’s earlier experience of working together with content providers for their lucrative mobile Internet platform, i-mode, may have helped them forge partnerships more easily.

The situation in Japan — shrinking revenue streams from voice communications and the need for new avenues for growth — was strikingly similar to the one currently afoot in the United States. In 2003, the Japan Credit Bureau (JCB) launched QUICPay™ (Quick and Useful IC Payment), a contactless credit card solution available on a mobile phone or a plastic card, which assigns part of the credit limit to a contactless chip.⁷ By 2004, NTT DoCoMo launched the first “Osaifu-Keitai” (mobile wallet), which incorporated contactless payment technology.

Then, Sony and DoCoMo formed a joint venture called FeliCa Networks. By producing both the mobile phone chip and card reader, the platform managed downloads and applications for consumers and merchants and gained a strong foothold in the mobile payment market. In fact, FeliCa Networks also licensed FeliCa chips to other potential users, including rival telecom providers.⁸

Once DoCoMo developed a chip for their handset and started licensing it to other operators for higher traction, the company launched its own credit service “iD” in collaboration with a growing number of credit card companies.⁹ Collaboration across the value chain meant that NTT DoCoMo, merchants and other mobile carriers were able to share a common platform to enable their e-payment brands — Suica®, iD™, QUICPay™, and Edy — to share the same data center and point-of-sale hardware. Collaboration across the value chain created a mobile payments ecosystem in Japan that achieved scale and provided convenience to customers and merchants who no longer needed to negotiate an ecosystem with competing and incompatible platforms.

Regulatory intervention in the east

Unlike Japan, the telecom sector in the United States is highly competitive and does not have a single carrier with the market power to impose a harmonized mobile payments solution for the entire value chain. Likewise, Singapore's highly competitive telecom sector witnessed familiar challenges when creating a standard ecosystem for mobile payments. Mobile carriers in Singapore made a number of attempts to offer competing but incompatible contactless standards for mobile payments, so the Singapore regulatory and policymaking body, the Infocomm Development Authority (IDA), stepped in.

The IDA estimated that an interoperable NFC environment would create a market size that would be eight times that of a non-interoperable environment.¹⁰ It initiated two broad initiatives in 2009. First, it instituted a private organization of members from the public and private sector to develop a standard ecosystem for mobile payments. Second, it funded the deployment of point-of-sale (POS) readers for payments based on Near Field Communication (NFC).¹¹

Mobile carriers and financial institutions in Singapore collaborated on an interoperable deployment of NFC mobile payments using a Trusted Third Party (TTP) infrastructure. The TTP acts as a neutral party that delivers interoperability by providing a single point of contact for all banks, payment providers, and mobile carriers.¹²

In China, the Ministry of Information Technology and Industry is trying to establish a common payment platform for China Mobile and China Unicom. Policymakers are weighing the option of going with a proprietary system (China Mobile) versus adopting NFC (China Unicom).¹³ In India, the government is developing a common, interoperable mobile payment infrastructure that includes a switch to facilitate transaction routing between financial institutions and mobile carriers.¹⁴

The Federal Reserve Bank of Boston, one of twelve regional banks in the Federal Reserve System, explicitly stated that there is no need for the Federal Reserve or any government body to take the lead in developing shared standards for mobile payments in the United States.¹⁵ They recommend that the market should be allowed to develop open or proprietary standards.

It seems unlikely that regulatory bodies in the United States will take the lead in creating a standardized payment infrastructure or mandating cooperation among mobile carriers and financial institutions. For mobile payments to be successful in the United States, critical players in the value chain need to cooperate voluntarily to minimize redundancy and create a harmonized platform to spur merchant and consumer adoption.



Barriers in the United States to mobile payments

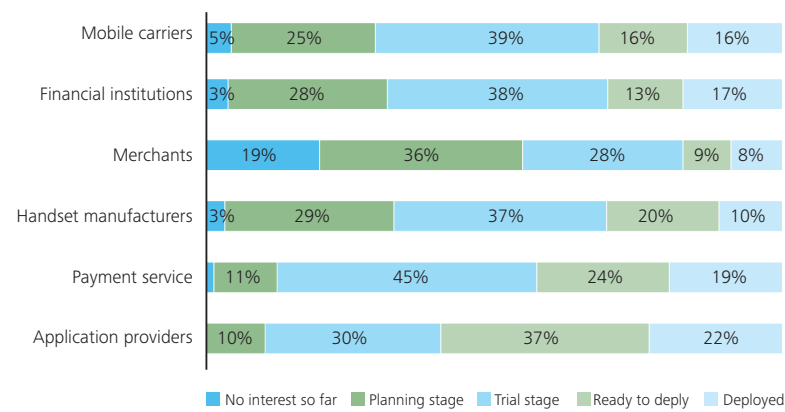
The Deloitte survey suggests that key players face four significant barriers that include a lack of consumer knowledge, a dearth of demand, competing platforms in a fragmented market, and the absence of revenue-sharing agreements between critical players in the value chain. If industry is able to iron-out disagreements on revenue sharing first, developing a common technology platform and addressing lack of consumer knowledge and demand are easier to fix.

Financial institutions and mobile carriers in the United States have effectively communicated the value proposition of mobile banking in the recent past, which led to a rapid adoption of this service. Likewise, when the biggest players deploy mobile payment solutions on a large scale, it is likely that they will put their marketing muscles behind a sustained information campaign to educate consumers about the benefits of mobile-based payments. Consumer demand is closely linked to effective consumer education and the widespread availability of mobile payment services at retail outlets.

Most of the mobile payment solutions in the United States are currently niche services in specific geographic markets. Services like P2P and merchant loyalty programs are offered on the mobile device by payment providers, bypassing financial institutions and mobile carriers. The lack of participation in mobile retail payment from financial institutions and mobile carriers coincides with a lack of preparedness. (See figure 3.) The survey indicates that most of the significant players are still in the planning stages of mobile payment deployment (66 percent).



Figure 3. Preparedness of key players to deploy mobile payments*



*Note: Percentages may not add up to 100% due to rounding
 Source: Deloitte Future of Mobile Payment Survey

Unshackling mobile payments

Unshackling mobile payments in the United States will involve aligning the divergent interests of disparate industries by establishing mutually beneficial business and revenue models and adopting a standardized technology platform that enables scaling and targeting merchants who benefit most from mobile payment.

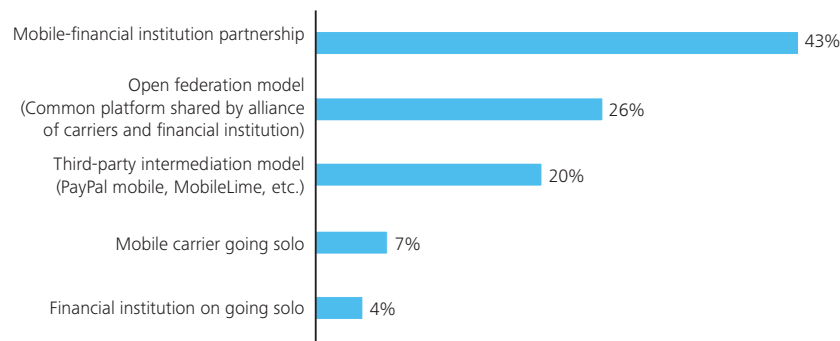
Choosing a Revenue Model

According to the survey, fragmented efforts and non-cooperation between critical players yield mobile payment services that fail to unlock the mobile platform's full potential. Using mobile devices embedded with virtual credit and debit cards to pay for retail payments would require consensus about how to partner and share revenues. The most feasible business models, according to the survey, are partnerships between mobile carriers and financial institutions (43 percent) and the open federation model (26 percent), as depicted in figure 4.

An open federation model,¹⁶ (described in greater detail in the next section) brings together mobile carriers, financial institutions, merchants and others to deliver multiple payment services on a common platform across different devices. The survey data indicate that intermediate steps would be needed to move to an open federation model. Mobile-financial institution partnerships can be an intermediate step toward a more open and harmonized mobile payments ecosystem. For mobile carriers and financial institutions, "one-to-one" partnerships are easier to forge and may be the first step toward a workable and trusting relationship.

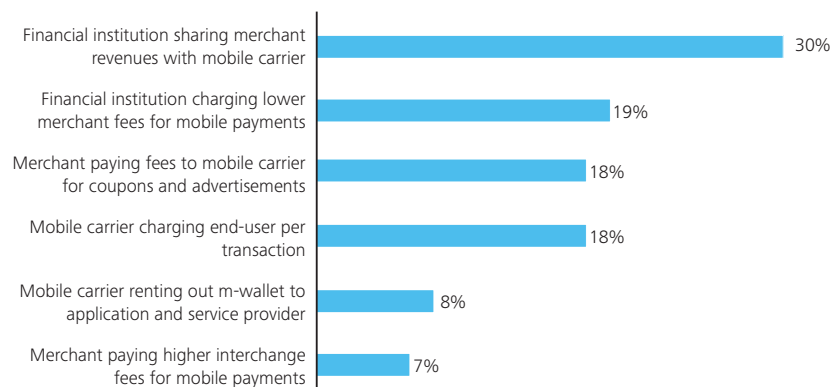
The financial institutions have been reticent to slice their existing revenue pie thinner by sharing their merchant revenues with mobile carriers.¹⁷ Therefore, sharing revenues between financial institutions and mobile carriers has been an intractable problem — until now. There are positive signs that financial institutions are willing to reconsider revenue sharing. Nearly 50 percent of surveyed financial institutions support sharing merchant revenues with mobile carriers. (See figures 5 and 6.) There is also support to expand the revenue pie with innovative services that bring financial institutions to the table; these include location-aware services, e-coupons, and mobile advertising, which is expected to be a \$24 billion market in 2015.¹⁸ The survey also supports lower merchant fees for mobile payment services, which may stimulate adoption by merchants.

Figure 4. Most viable business model



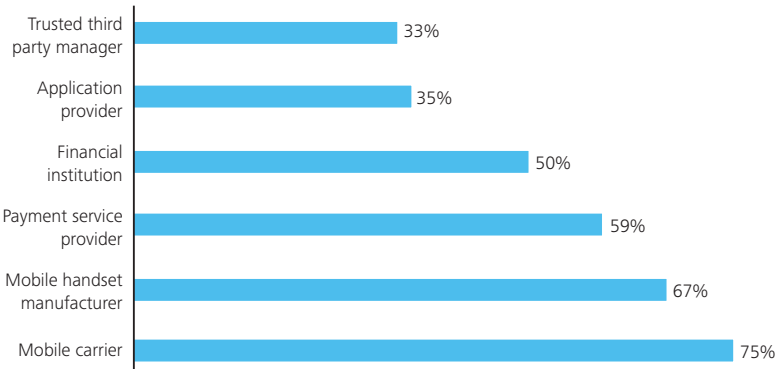
Source: Deloitte Future of Mobile Payment Survey

Figure 5. Revenue models most likely to be adopted for mobile payments



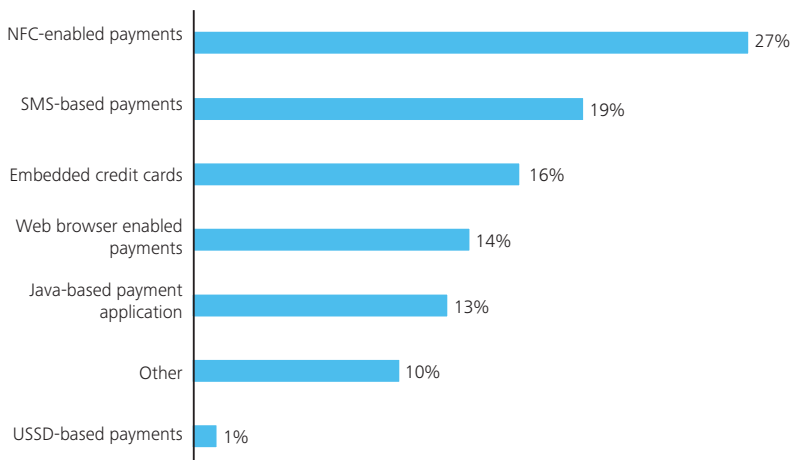
Source: Deloitte Future of Mobile Payment Survey

Figure 6. Players across the value chain support sharing of merchant fees with carriers



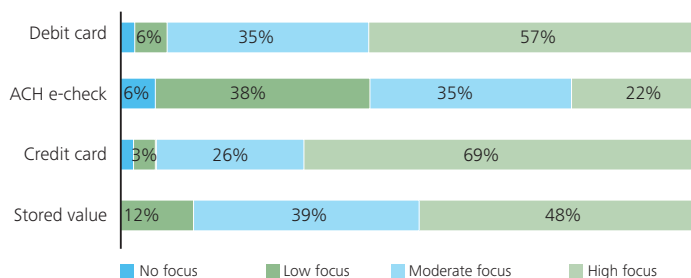
Source: Deloitte Future of Mobile Payment Survey

Figure 7. The most likely “killer app” for mobile payments



Source: Deloitte Future of Mobile Payment Survey

Figure 8. Preferred sources for funding mobile payment transactions*



*Note: Percentages may not add up to 100% due to rounding
Source: Deloitte Future of Mobile Payment Survey

NFC may be the future

NFC is a platform around which a viable ecosystem can be created in the United States. It allows two autonomously powered devices to wirelessly communicate at short distances. Among survey respondents, 27 percent think it will become a “killer app” for mobile payment — more than any other technology (see figure 7) — and nearly nine out of every 10 players across the value chain are already testing NFC.

For NFC to work as a payment technology, it needs to be linked to a source of funds, for example, a consumer’s bank account or credit card. As depicted in figure 8, credit cards embedded within mobile handsets found overwhelming support among survey respondents (69 percent), followed by debit cards (57 percent) and stored value solutions (48 percent). Many mobile wallet solutions in mature markets use credit cards as the primary funding source.

Maxis — the largest wireless carrier in Malaysia with more than 11 million subscribers — teamed up with Nokia and Visa to offer Visa payWave on mobile devices. Maxis FastTap, an embedded NFC contactless chip, can also power a number of additional functions, including a mass transit application that allows commuters to pay for charges from metropolitan transport systems, bus terminals, highway toll gates, and parking facilities at more than 3,000 points throughout the country.¹⁹

In South Korea, SK Telecom provides a mobile wallet called Moneta that allows customers to download a Visa-branded card on their mobile handsets. The applications residing in the Universal Integrated Circuit Card (UICC) are secure because of the very nature of the chip. Visa has been a partner with SK Telecom since the beginning, and together, they’re trying to sell the OTA-USIM (Over the Air-Universal SIM) technology on the Visa payWave NFC platform in other parts of the world.

The limited availability of NFC-enabled handsets has posed a challenge for wide-spread consumer adoption of mobile payment. However, credit card and technology companies have developed a contactless payment system that is contained on a microSD card and can equip smartphones with SD card slots with contactless payment capability. This technology is seen to be a transitional solution until NFC-embedded smartphones are widely introduced by major handset makers. It is estimated that by 2014, 13 percent of all smartphones will have built-in NFC capabilities.²⁰

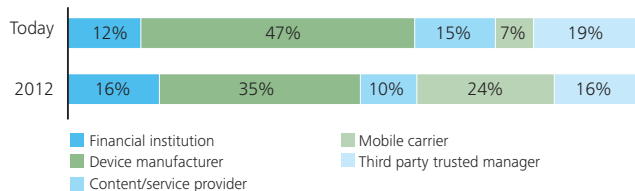
Large-scale deployment of embedded-card solutions — where a mobile phone can be used as a credit card — will require partnerships between financial institutions and mobile carriers. In the United States, financial institutions would need the cooperation of mobile carriers who largely control the capabilities and services that ride on the handset (see figure 9). A credit-card-embedded solution in a mobile phone can use the existing credit card network as well as consumer familiarity with this payment instrument. However, for financial institutions, sharing merchant revenues with mobile carriers is a contentious issue.

Although the stored value solution had weak support among survey respondents, it could eventually displace existing payment instruments. The stored value solution involves accessing funds that are virtually stored on the mobile device instead of drawing from an external account and having to obtain the requisite authentication. Unlike credit and debit cards, stored value solutions allow circumvention of financial institutions and mobile carriers.

In 1997, Hong Kong adopted a stored value solution for mass transit: a contactless payment technology called Octopus. Contactless travel cards are readily available in many countries, but Octopus has several features that make it unique. Acceptance of this technology is staggering; in fact, the number of Octopus cards in Hong Kong outstrips the local population. The convenience of the Octopus card is also catching on with merchants and commuters. Octopus cards are being used at other micro payment venues like fast food restaurants and parking facilities. This service is offered by a consortium of transport operators²¹ without any involvement from financial institutions or mobile carriers.²²

Several cities in the United States are using or plan to introduce a contactless payment system for commuters.²³ Unless transit authorities coordinate their efforts and make a contactless transit card that is valid across the nation's transit systems, it is unlikely that they will make significant inroads with merchants.

Figure 9. Player that controls application and secure elements in the mobile device today and in 2012*



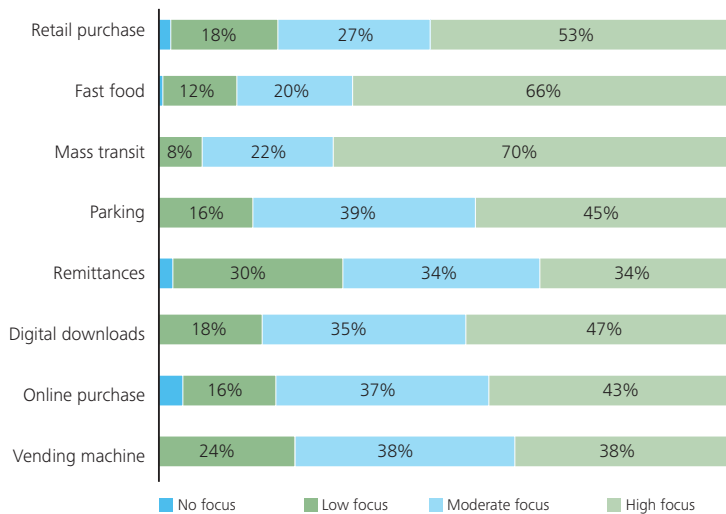
*Note: Percentages may not add up to 100% due to rounding
Source: Deloitte Future of Mobile Payment Survey

Finding the right channel for faster adoption

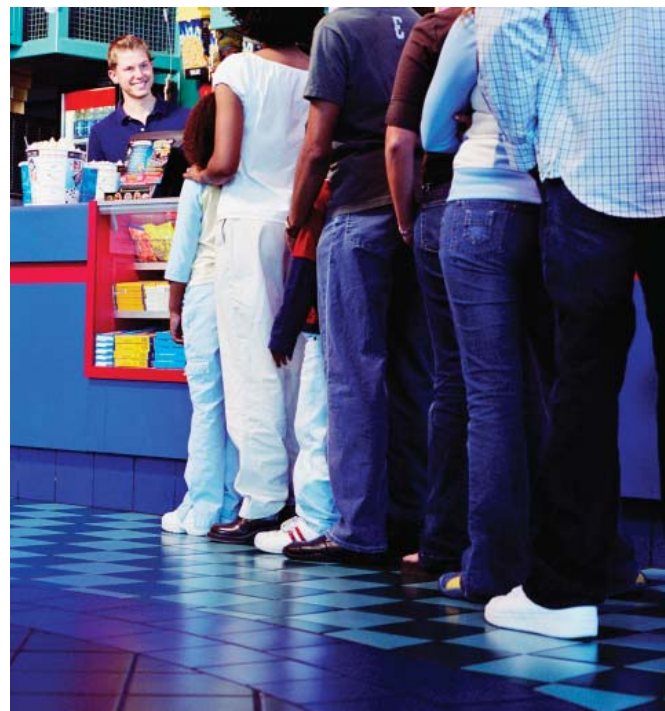
The most likely scenario for a successful deployment of mobile payment services in the United States hinges on a tripartite of mobile carriers, financial institutions, and merchants. For merchants, a NFC-enabled device lowers the barriers to entry for store-branded and loyalty cards that can now reside in the customer's "e-wallet." With a NFC-enabled handset, merchants can incentivize customers to download numerous "soft cards" — store-branded cards, loyalty cards, prepaid cards, and coupons that can individualize shopping experience and create deeper customer relationships. Once a retailer motivates its customers to download a retailer-branded card to their NFC phones, customers will always carry that card with their phone.

The initial adoption of NFC payments can be spearheaded by a specific set of merchants — like mass transit, fast food, and retail outlets — that benefit from high transaction velocity. More than 70 percent of survey respondents, as well as early adopters in other countries such as Japan, believe that mobile payment would have the greatest traction in mass transit, thanks to a large user base and high transaction volume (see figure 10). In 2001, NTT DoCoMo and Sony led a 25-member consortium to launch contactless, rechargeable cards²⁴ for purchasing e-tickets. In the same year, the East Japan Railways launched the similar Suica card, and both these technologies were folded into the mobile phone. By working with mass transit authorities, mobile payment players in the United States have a better chance of driving customer adoption and reaching critical mass. Once this happens, other retail channels will have an incentive to support mobile transactions.

Figure 10. Preferred merchant channels for mobile payments*



*Note: Percentages may not add up to 100% due to rounding
Source: Deloitte Future of Mobile Payment Survey



Four possible scenarios of mobile payment evolution

Based on the formidable challenges outlined above, the U.S. mobile payment market is likely to evolve along four different trajectories, each of which benefits key players differently:

- 1. Wait and see**
- 2. Fly solo**
- 3. The buddy system**
- 4. Open federation alliance**

Wait and see

This scenario follows the current trajectory; mobile carriers, financial institutions, independent payment providers and others experiment with different payment services that provide limited services in specific geographic markets. Limited cooperation between disparate industries and a lack of scale will likely stifle services, fragment offerings, and focus on niche markets.

Mobile wallets with different payment applications (credit cards, remittances, remote payments) will not exist. Instead, each of these benefits may become standalone services that require the customer to establish separate relationships with the vendors. Contactless solutions may come in the form of stickers and key fobs that allow merchants to offer loyalty programs. It is also possible for transit authorities to use contactless stickers as a standalone, stored-value solution that would have limited utility outside train stations and buses.

Left to themselves, financial institutions have little incentive to move into mobile payments unless it is part of a defensive strategy. Banks and credit card companies participated in a number of mobile payment trials in the United States, but they saw little incremental benefit and stopped short of widely deploying the services. Financial institutions may sit on the sidelines until they see a credible threat emerge. That would likely be a mistake, however, since they run the risk of not benefitting from rapid innovations taking place on the mobile platform.

Carriers appear more motivated to enter the mobile payments arena than financial institutions. Faced with stagnant average revenues per user while innovation engines steam ahead elsewhere, mobile carriers consider mobile payment a lucrative avenue for growth. They need to introduce payment initiatives that go beyond purchase of digital goods like ringtones, wallpaper, etc. to generate significant revenues. The bill-to-pay revenue model, which mobile carriers used during the recent Haiti disaster to raise donations, may be a highly disruptive payment strategy. Text message donations for Haitian earthquake relief raised \$25 million from 2.5 million mobile users in the United States — a feat that bypassed financial institutions altogether.

Mobile carriers could easily extend their offerings with a payment platform for physical goods and services, adding a customer's purchases at retail outlets to a monthly bill. NFC-enabled phones make this a viable solution for payments made at physical retail locations, but mobile carriers would need to work closely with handset makers and/or chipmakers and merchants to bring the service to market. Short Message Service (SMS)-based payment may be effective for intangible goods but inefficient for a retail POS transaction. Bling nation and Boku, for example, offer SMS-based services to carriers in the United States.

Merchants tend to favor payment instruments that compete with credit and debit cards. If mobile carriers offer attractive transaction fees to merchants, they could compete with financial institutions for revenues from retail transactions. There are three distinct challenges that mobile carriers would have to overcome in this scenario:

- Carriers would have to incentivize merchants to join their payment networks, and customers will not adopt mobile payments unless they know that enough merchants accept them.
- Carriers would have to assume additional financial risk where they would have to provide credit to customers and guarantee payment and settlement to merchants.
- Carriers would assume additional compliance burdens by following banking regulations.

Fly solo

In this scenario, one visionary player with significant market power makes the required investment that stimulates development. NTT DoCom, for example, built a payment platform, developed the payment applications, invested in a bank, corralled the merchants, and provided subsidies to create a vibrant contactless payment to gain competitive advantage.

The market-leader would have to undertake significant risks and acquire the necessary licenses to operate across industry boundaries. The most straightforward option would be for a bank to purchase a mobile carrier along with its network and licenses or vice versa. It is unlikely that banks would take a leadership position unless they see a significant threat to their existing way of life.

A less risky route that financial institutions are exploring is to provide mobile payment services to their existing customers without involving mobile carriers. A promising solution is to provide microSD cards that contain a contactless payment system linked to a credit or debit cards that bank customers can insert into the SD card slot of their smartphone. This technology would enable a smartphone to make contactless payments but would lack the full functionality of a NFC-enabled handset.

It is even more unlikely for a mobile carrier with the required financial muscle to purchase a struggling bank. The mobile carrier would have to invest in a mobile payments platform and single-handedly develop all the elements of the ecosystem. It is not clear that the returns from mobile payments would pay off, given this scenario's inherent risk for a mobile-carrier-turned-bank. Survey results suggest that going solo is among the less viable business models.

The buddy system

In this scenario, a financial institution and mobile carrier come together to provide payment solutions where a credit or debit card is embedded as an application in the mobile device. This option allows both parties to share the risks and rewards and develop harmonized, clearly-defined business models. A targeted partnership will be better able to focus on the pain points, and a small number of partners may be better equipped to address them. Mobile carriers and financial institutions don't have much experience collaborating together, and their expectations differ. The buddy system would allow two big players to develop trust while creating a more broad-based coalition. Since this partnership will be able to issue credit cards, the potential customer base will be much larger than the existing customer-base overlap of the two partners.

Replacing credit and debit cards with a single mobile device that offers added convenience and greater security (pin-authentication) could increase value for consumers. This model requires significantly less investment than solo strategies since the embedded credit card transactions utilize a payment network that already exists. Merchants — especially those that benefit from faster transactions — will have greater incentive to adopt. However, upgrading to NFC-enabled POS terminals may cost retailers upwards of \$150 per terminal.²⁵ Financial institution-mobile carrier partnership would likely need to provide incentives, if not outright subsidies, to spur adoption. The survey suggests that charging a lower transaction fee to merchants for mobile-based payments may spur adoption. However, subsidy alone may not be enough. Partnerships between financial institutions and mobile carriers would therefore need to develop innovative services (like location-aware coupons and customized payment application in the e-wallet) that find favor among merchants.

The incremental benefit to financial institutions in this situation is not clear since embedded credit card solutions would effectively compete with existing plastic cards, and furthermore, banks and credit card companies would end up sharing their revenues with an additional partner — the mobile carrier. Potential partners would probably consist of niche credit card companies and banks that can use mobile payments to expand into new markets and geographies. The rapidly evolving mobile payment landscape has witnessed a number of partnerships between financial institutions and mobile carriers to jointly develop mobile payment offerings but these have yet to translate into market offerings.

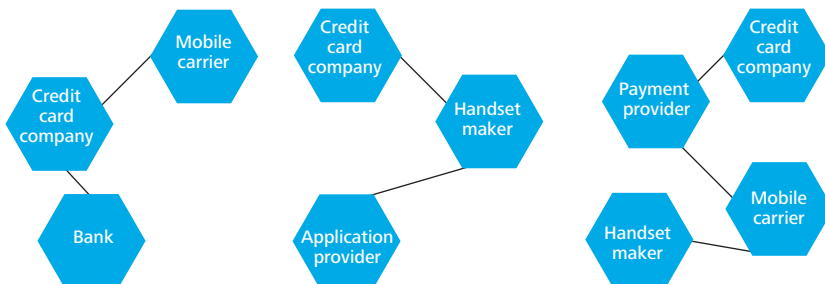
Open federation alliance

An open federation alliance allows players from different industries to rally around a common vision and use mutually beneficial business models to realize the full potential of mobile payment. In this scenario, mobile carriers, financial institutions, merchants, handset makers, chipmakers, application providers and a host of others would come together on a standardized platform to provide a portfolio of financial services on mobile devices. A Trusted Third Party Manager (TTPM) plays the pivotal role of coordinator and integrator (see figure 12), managing both the technical aspects of the platform and the business models that govern the alliance.

Unlike a platform leader that establishes a platform and convinces third parties to develop complementary products,²⁶ a TTPM works with participating financial institutions and mobile carriers to implement a harmonized business strategy that agreeably distributes risks and rewards. Ideally, a TTPM would be neither a financial institution nor a mobile carrier. Otherwise, the alliance would struggle to attract existing and potential competitors to its fold. A TTPM would have the ability to manage alliances and the credibility to attract large banks and mobile carriers to its fold. Potential TTPMs could be handset-makers, mobile security solution providers, wireless technology companies, large payment processors amongst others.

Currently, there are no signs of an open federation alliance that can create a mobile payment ecosystem across the United States. The complexity of bringing together disparate players from different industries is daunting, and the path to an open federation, if it does develop, will not be a straight one. In the long run, it is highly likely that a mobile payment ecosystem will evolve in an iterative manner in the United States. One-on-one and “cluster” partnership will develop mutual trust, accumulate know-how on service deployment, and create agreements on revenue sharing. Various cluster partnerships (see figure 11) may develop a common understanding on contentious issues through “learning-by-doing.” These clusters may be the DNA strands of an open federation ecosystem for mobile payments in the United States.

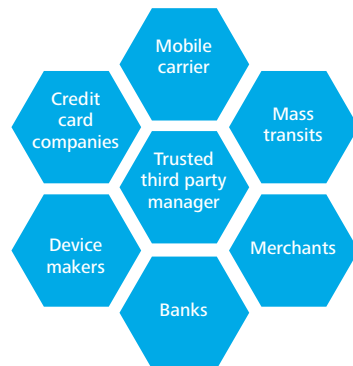
Figure 11. Cluster partnerships are the DNA strands of an open federation ecosystem



Source: Deloitte analysis

Singapore demonstrated that the interoperability of the open federation model can create a market size many times larger than a non-interoperable environment with fragmented initiatives. In the long run, an open federation alliance has the greatest likelihood of generating network effects and achieving a critical mass of partners and end-users.²⁷ The full potential of NFC-enabled devices would be best realized in an open federation that is able to integrate payment, access, and merchant loyalty programs that generate large volumes of transactions. A standardized platform reduces coordination costs enough to allow participation from different industries; this would certainly not be possible on a non-standard platform without a critical mass to support it.

Figure 12. Open federation model



Source: Adapted from Smart Card Alliance: "Proximity mobile payments business scenarios"

An open federation can also integrate various payment applications on a single platform. The survey suggests that multiple payment options can co-exist. However, rather than hoarding payment applications on a single mobile device, consumers may want to pick and choose the most practical ones. A standardized platform would mean that consumers could select third party applications and customize the portfolio of services hosted on their mobile devices. For example, a user may have P2P money transfer ability, USSD (Unstructured Supplementary Services Data) for remote purchase of movie tickets, and NFC for making retail payments at physical locations.

Each of the models for adoption introduces a unique combination of winners and losers, which are highlighted in table one. Since carriers have most to gain from mobile payment and the least to lose in each scenario except flying solo, they may provide the leadership to forge partnerships and develop a broad-based ecosystem in the future. Financial institutions, which have the deep pockets to fund the advent of mobile payment, have the most to lose from each of the scenarios: flying solo would leave them in limbo; the wait-and-see approach may pose significant challenges down the road; and the buddy-system approach would cost them merchant revenues. Only the open federation model has an upside for financial institutions, and it also happens to be the most beneficial for the other key players.

Table 1. Who wins & loses under the various scenarios

Scenarios	Mobile carriers	Financial institutions	Handset makers	Merchants	Consumer
Wait and see	Gains by innovating disruptive models	Loses by being on the sidelines or acts defensively when credible threat emerges	Limited gain from small scale NFC deployment by carrier	Limited gain from competition to card-based ecosystem	Loses because of fragmented offerings and limited availability
Buddy system	Gains from tapping existing payment network and generates incremental revenues	Loses by sharing merchant revenues with carriers unless it is a niche player that expands revenue pie	Moderate gains from NFC deployment to larger customer base	Gains from speeded up transactions but loses from upgrade costs of POS	Gains from merchant acceptance and convenience
Fly solo	Significant risk without commensurate returns	Significant risk without commensurate rewards	Limited gain from small-scale deployment	Limited gains from small scale deployment	Limited gains from low merchant acceptance
Open federation	Significant gains from large-scale mobile payment deployment	Moderate gains from large-scale mobile payment deployment	Significant gains from mass deployment of NFC	Significant gains from mass deployment of NFC and greater competition among payment instruments	Gains significantly because of expanded choice, merchant acceptance and convenience

Source: Deloitte analysis

Advancing mobile payment

Cooperating with mobile carriers to deploy mobile payment will entail short-term pain for financial institutions because revenues from merchant fees may shrink. But in the long-term, financial institutions may enjoy expanding revenues from mobile payment, attract and retain young customers, and be well-placed to reap the benefit from new financial services and applications that may emerge from the innovative platform that the mobile handset represents. If financial institutions defer the short-term pain of cooperation, they may witness a slow but steady erosion of revenues from their existing payment platforms as players outside the industry introduce mobile payment services, bypassing banks and credit card companies. Such an outcome would be unfortunate for end-users and the financial industry.

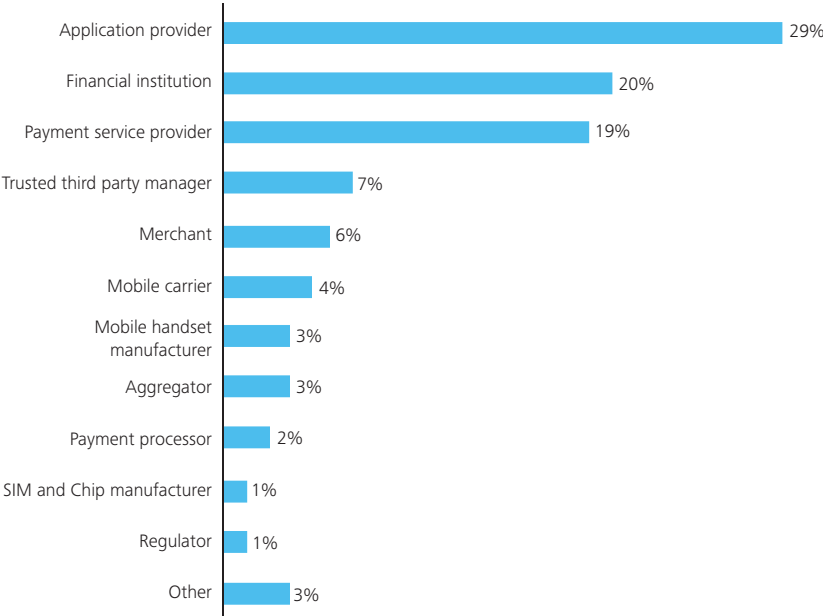
Mobile carriers can entice financial institutions to the table by forgoing the fees banks and credit card companies currently charge merchants, thereby removing the biggest barrier to the rollout of mobile payment. Once the ecosystem is in place, mobile carriers can generate new revenues from mobile advertising and other innovative merchant services. The long-term benefits of mobile payment have the potential to be significant for everyone involved. As such, key players should not allow short-termism to stifle their strategies.



Appendix: Survey Demographics

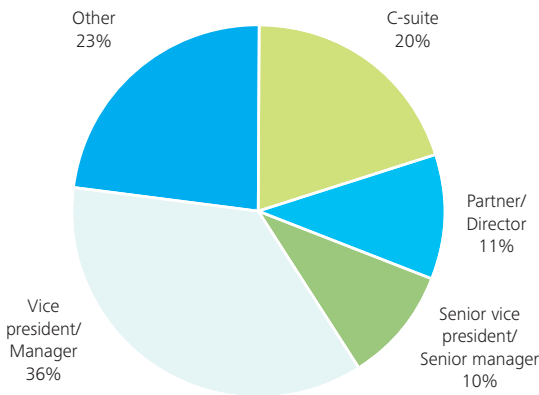
Deloitte collected 89 highly targeted responses from senior executives across the mobile payment value chain in U.S. representing financial institutions, mobile carriers, application providers, handset manufacturers amongst others. Participation was voluntary and anonymous. In some questions, multiple responses were allowed and accounted for accordingly. The survey closed in September, 2009.

Value chain



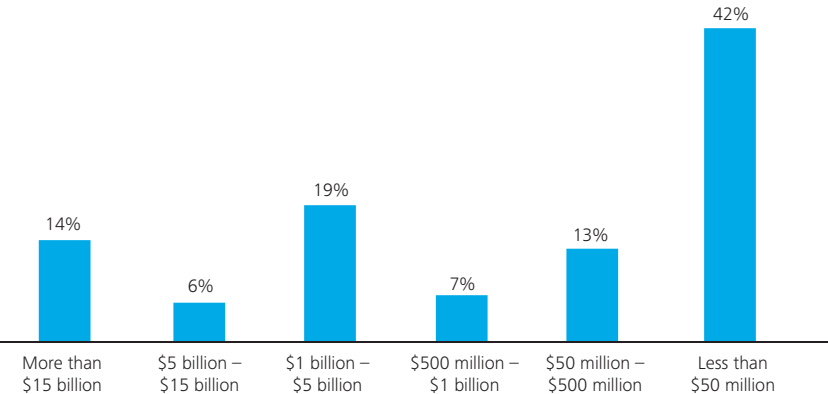
Source: Deloitte Future of Mobile Payment Survey

Designation



Source: Deloitte Future of Mobile Payment Survey

Entity size by revenue (\$)



Source: Deloitte Future of Mobile Payment Survey

Endnotes

- ¹ The player that interfaces with the end customer as the service provider collects the service charges and controls the device on which service is provided may have a greater say on revenue sharing and may be perceived by customers as the provider offering value.
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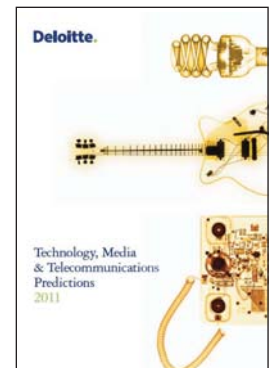
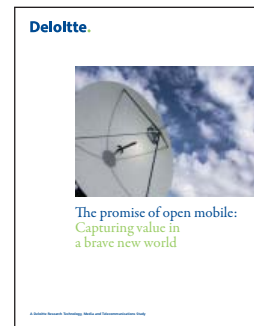
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