The road to mobile payments services

Web-capable mobile phones are rapidly changing the way the world's five billion mobile subscribers search, shop and buy. In 2010, an estimated 300 million smart phones were sold worldwide, and smart phone sales are expected to exceed 450 million units in 2011. The stakes in providing payments solutions for the rapidly expanding mobile commerce world are high.

Monica Adractas

Philip Bruno

Olivier Denecker

Viken Gazarian

Kiyoshi Miura

Kausik Rajgopal

Established banks and other payments companies have been forced into defensive plays against consumer-oriented and technology-intensive organizations that control connectivity infrastructure and networking applications. These companies, which include technology leaders, mobile carriers and equipment manufacturers, are aggressively launching products and services that are shaping the digital marketplace, creating new rules and complex patterns of cross-sector competition along the entire payments value chain. Payments companies and financial services providers should adopt innovations in mobile payments, mobile marketing and mobile banking to deepen relationships with consumers and ensure participation in this emerging landscape.

Established players will need to re-evaluate the scope and boundaries of their existing payments businesses and learn how to compete with new players in a greatly expanded and altered arena.

The three dimensions of mobile commerce evolution

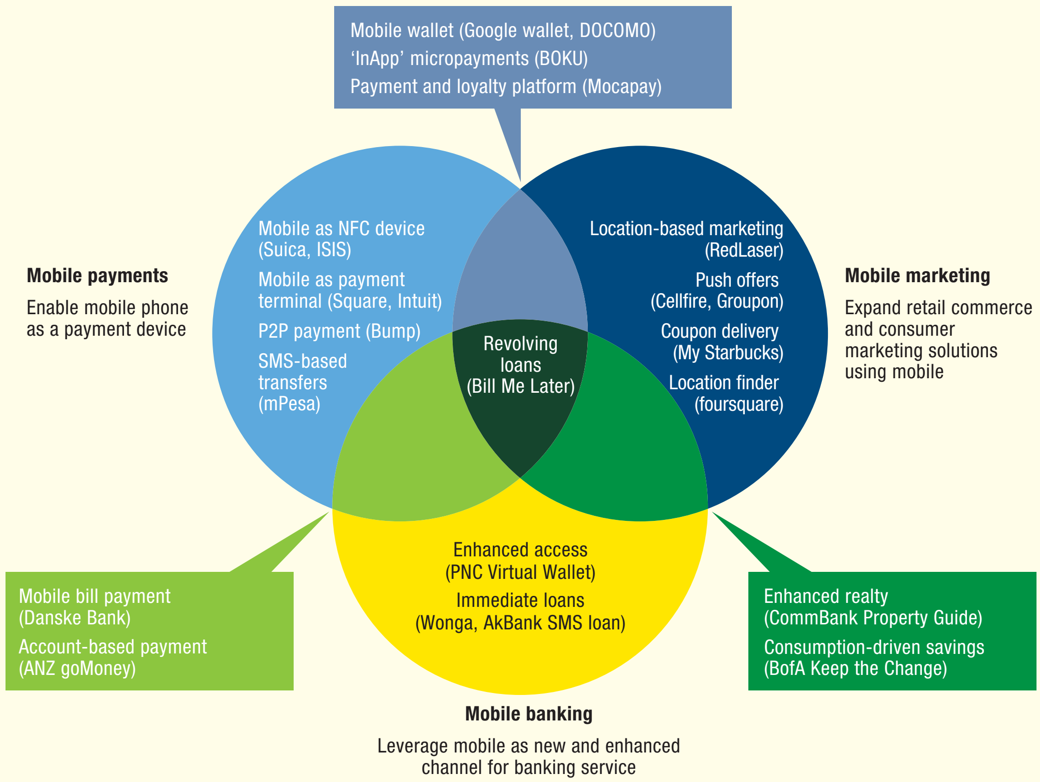
Mobile commerce refers to searches and purchases enabled by a mobile phone or device. The transactional and financial market related to mobile commerce is rapidly developing across three distinct but interrelated areas: mobile payments, mobile marketing and mobile banking (Exhibit 1, page 46). Building on previous discussions of mobile payments in *McKinsey on Payments*,[1] this article focuses on the payments services needed to unlock the area joining the mobile payment and mobile marketing spaces.

The overlap of these three areas creates powerful opportunities and is attracting mobile network operators (MNOs), operating equipment manufacturers (OEMs), operating system (OS) providers and other technology players, each wielding new tools such as location-based services, social media and search engines to intensify the interaction between merchants and consumers.

[1] See "Mobile money for the unbanked: Unlocking the potential in emerging markets," *McKinsey on Payments 8*, June 2010; and "Mobile payments: Ringing louder," *McKinsey on Payments 4*, April 2009.

Exhibit 1

The three dimensions of mobile commerce evolution



Source: McKinsey Payments Practice

1. Mobile payments

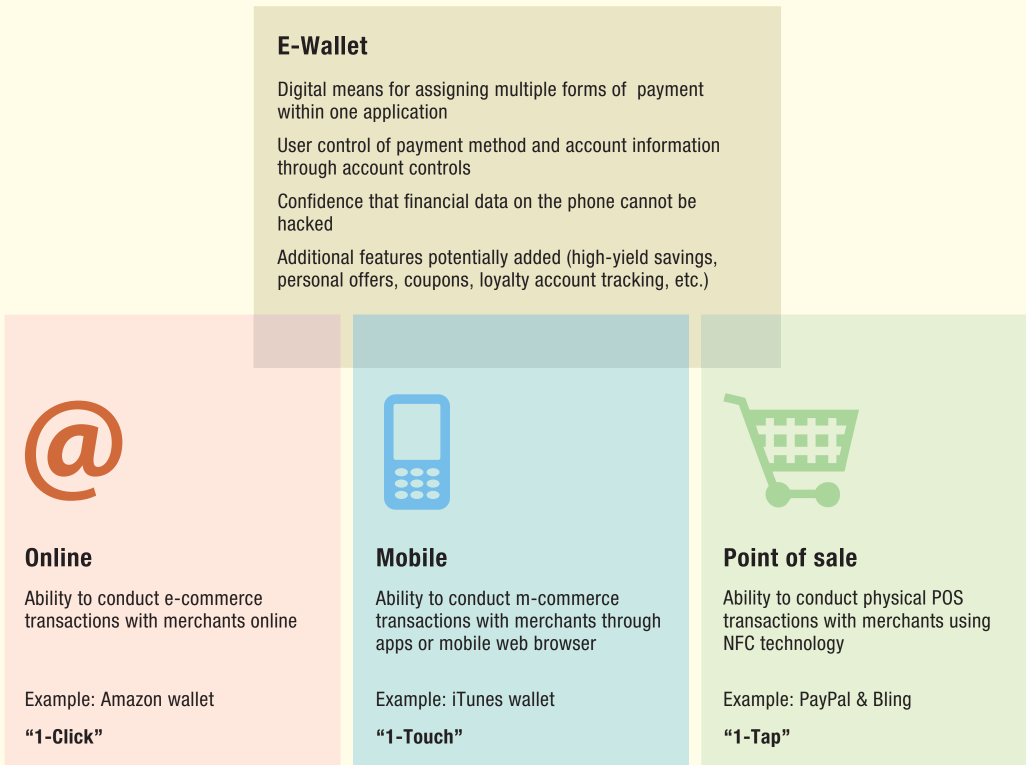
Mobile payments encompasses many different solutions, ranging from near field communication (NFC) contactless solutions and SMS-based payments offline to e-wallets, digital currency and P2P networks online.

NFC has attracted considerable attention, but its impact as a payments technology remains unclear. True NFC success has only been demonstrated in limited and controlled environments, such as transit or local government-sponsored trials. In France, for example, the government supported the largest NFC pilot so far in 2010 in Nice and recently announced additional funding to speed the adoption of NFC in nine cities for non-commercial uses (e.g., access to public establishments and public transportation). In preparation for the 2012 Olympic Games, Transport for London has announced a deal between Visa and Oyster that will allow users to board public transportation with contactless credit and debit cards.[2] Barclaycard, which originally spearheaded the contactless roll-out with Oyster, now claims over 11.4 million contactless cards and over 50,000 NFC terminals. Actual usage, by contrast, remains very low with less than two million contactless transactions in 2010. In Japan the convergence of smart cards and FeliCa-enabled mobile phones helped make pre-paid accounts (such as Edy and Suica) one of the most frequently used methods of payment.

[2] For other examples, see "Transit payments: The open-standards advantage," *McKinsey on Payments 7*, March 2010.

Exhibit 2

Defining the e-wallet across channels



Source: McKinsey Payments Practice

Mobile or electronic wallets are another area of rapid development in mobile payments. In 2004, DOCOMO, the leading mobile carrier in Japan, launched a mobile wallet supporting online and in-store payments, with multiple payments instruments (Exhibit 2).

Amazon's One-Click shopping feature is an example of a simple e-wallet and has enabled reduction of abandoned transactions or online shopping carts. Many players in the U.S., including Google, Visa and ISIS (a joint venture of AT&T, T-Mobile and Verizon), have announced plans to launch e-wallets, many of which are expected to incorporate NFC technology as a means of online-offline integration. Visa already has Pay Wave terminals, Google has partnered with VeriFone, and ISIS has agreements with the four major card processors.

Although NFC is a promising technology, it requires ubiquitous acceptance and customer usage. As of today the value proposition on both sides is largely unclear. Only a limited set of players (e.g., companies active in transit, healthcare or markets with strong government backing for NFC adoption) should treat NFC as a priority in the near term. Banks and merchants should look to these players to fund NFC initiatives and build business strategies that can incorporate NFC later on as the technology matures and is adopted. Furthermore, they should consider solutions that do not require heavy infrastructure efforts, but leverage existing functionalities to hook into the mobile commerce world.

Alternatives to NFC include barcodes and quick response (QR) codes. Using QR codes, Starbucks' pre-paid program has enabled customers to use their mobile phones for in-store purchases. Some merchants are also printing QR codes on posters and advertisements, allowing customers to scan the code with their phone in order to retrieve coupons, real-time product information, etc.

Is QR code a rival to NFC or are the two technologies complementary? Regardless of the answer to this question, QR codes are in use now and can be implemented at very low cost. NFC, as some argue, is perhaps easier and more intuitive for users, but it is expensive to implement and not widely used in mobile marketing. Marketing applications of NFC will require the development of standards beyond the basic card emulation mode used for proximity payments.

If payments players are to drive value for merchants and consumers, mobile marketing must become a cornerstone of their core business.

2. Mobile marketing

Mobile devices link the offline world with the online, enabling merchants to develop new methods of targeted, real-time and location-based marketing, focused CRM, pre-authorized sales, etc. Social media are also having a tremendous impact, with peer-based recommendations and interactive consumer experiences. As a result, new business models and revenue pools are emerging along the retail value chain, and payments organizations are leveraging mobile marketing to achieve a compelling value proposition for consumers and merchants. The total revenues could amount to many times the potential payments revenue.

A number of digital commerce start-ups and mobile commerce initiatives use SMS messaging, optical scanning and wireless Web to make online and in-store shopping more personal, interactive and social (Exhibit 3). For example, RedLaser and other players enable real-time price scanning, which allows consumers to shift purchases from an offline store to an online provider. Groupon Now alerts smart phone users to nearby business deals. American Express recently partnered with start-up company foursquare and Facebook to provide consumers with targeted offers based on social recommendations and location information. This is a new area of post-sales communication and social networking, through which customers can evaluate products and merchants and share promotional offers and coupons with friends.

As payment transactions become more automated and offer fewer opportunities for customer interaction, banks and other payments players should consider how to capture more value across the spectrum of consumer activity. Payment transactions and funding services are increasingly interwoven with marketing solutions, creating a broader field of competition. For payments players to drive value for merchants and consumers, mobile marketing must become core to their business.

3. Mobile banking

The third dimension of digital commerce is mobile banking. Smart phone users today can gain access to most Internet banking sites and perform common tasks via their mobile browser, and many banks have created interfaces to adapt page views for smaller screens. Some mobile banking applications (e.g., Nordea's mobile offering in Lithuania) also offer currency exchange and domestic and international transfers. The key to a compelling mobile banking offering will be innovative features that are available exclusively to smart phone users. Danske Bank recently launched a bill payment application through which users take a picture of a bill with their phone camera and then approve payment by touching a single button. A forthcoming study by McKinsey and EFMA shows that mobile banking is becoming a central component of consumer financial services.

What is at stake?

The winners in this emerging arena will be those who "own" the consumer. This includes both access to customer information (e.g., daily contacts for gaming, shopping or chatting), as well as the ability to provide a compelling value proposition to activate and engage the consumer over time. Financial services providers are in a prime position to capture the mobile payments and marketing value pools given their broad scale, connectivity assets and privileged role as the guardians of consumers' financial information. However, if financial services providers move slowly or resist disruption of their core business, nimble non-bank technology companies are likely to develop work-around solutions in the medium term, exposing banks to full disintermediation. Google's partnership with VeriFone to develop and install NFC-capable terminals is a prime example.

Exhibit 3

Mobile innovations target each component of the retail experience

	Pre-visit			Decision-making		Transaction	Post-visit	
Local search funnel	Generate demand	Find local merchant	Compare local merchants	Contact/ arrive at store	Decide on purchase	Pay	Review business/ tell friends	Loyalty/ Decide to return
How m-commerce can change behavior	Mobile can be highly effective for branding / advertising (location-based ads)	Mobile can be used to do timely, local searches	Use local review apps such as Yelp to find best merchant in vicinity	Mobile can be used to contact merchant and get point-to-point directions	Mobile can be used to compare prices, get peer advice and browse competitor offerings in store	Mobile payments	Instant mobile reviews while checking out Publish whereabouts to social network	Mobile can enable couponing and other out-of-the-box loyalty programs
Examples	Cellfire Use Cellfire to sign up for specific deals and receive coupons based on triggers (e.g., location)	AroundMe Use AroundMe to find nearby stores with product and compare prices	yelp Read Yelp reviews to find the best merchant out of all local options	Google Use Google Local to get business information Use Google Maps to map route	RedLaser Use RedLaser to find cheapest price for product in vicinity	Tabbedout Use Tabbed-Out to pay restaurant bill without waiting for server	foursquare Publish location to foursquare Swipely Use Swipely to get feedback on purchases	

Source: McKinsey Payments Practice

Banks are relatively vulnerable in the area of brand visibility and customer attention and may therefore seek to improve their position vis-à-vis mobile carriers by partnering with one or more technology leaders.

If financial services providers move slowly or resist disruption of their core business, nimble non-bank technology companies are likely to develop work-around solutions in the medium term, exposing banks to full disintermediation.

In addition to the eight assets and 10 types of competitors competing in the digital commerce arena (Exhibit 4), security for mobile payments could be another key area of competition between banks and mobile carriers. The brands owned by banks and network processors are arguably the strongest from the standpoint of consumer trust and security, since they are the owners of payments networks, standards and funding accounts. Furthermore, security around mobile payments and mobile access to confidential financial data could become a crucial factor in digital commerce. The level of consumer confidence in the security of payment features and banking features on mobile phones could affect how widely they use their phone to make purchases and manage their financial affairs.

If MNOs can achieve widespread adoption of NFC, they have a chance to compete with banks on trust and security. One option for banks would be to push the development of barcode-based solutions for mobile payments, possibly working with an OS provider or OEM to tighten security around the payment application. Alternatively, banks may act to diminish the marginal value of NFC as a security solution. For example, a global bank, network processor, or industry consortium may form a partnership with an OS or OEM to implement a global security standard for mobile payments (remote and POS) and mobile access to financial data.

Recommendations

Banks and non-bank payments organizations face serious challenges from young digital champions. Digital commerce, however, with its shift in emphasis from online "e-commerce" to location-based digital services, affords the owners of brick-and-mortar storefronts new opportunities to strengthen customer relationships and multiply opportunities for sales. Not only do banks boast a robust network of physical branches in both commercial and residential neighborhoods, but they are also technologically intensive organizations. However, bringing technological innovations to market and building new infrastructure do not fall within the traditional bank raison d'être. The organizational culture and mindset required for risk management and regulatory compliance are not easily adapted to the competitive demands of digital commerce, but one of the urgent requirements for banks is to develop ways to think and act like a digital company, while retaining a strong focus on security and reliability.

In order to leverage both their physical retail presence and extraordinary core competency as "technology companies," banks need to do some soul-searching and find a vision for their role in the digital ecosystem. We recommend four strategic steps: think hard, choose your game, maintain flexibility and leverage the bank's digital nature.

1. Think hard

Banks and non-bank payments organizations should consider updating their payments or mobile strategy groups as digital commerce groups. Bank-owned technology incubators can experiment with innovations, even testing them in the market before incorporating them into the bank's portfolio of core payments offerings. Think hard about the future of retail commerce and what it means for the organization. Where does it want to play? Does it want to lead a change in consumer spending patterns or follow? How should the organization build the infrastructure to implement its strategy? How can the organization be retrained so that people have the necessary skills and expertise?

2. Choose your game

Payments organizations and financial service providers should consider how and where they want to play – narrowly in mobile pay-

Exhibit 4

Banks face new competitors across all areas of mobile commerce

Key assets	Banks	Telcos	Device Mfanufactures	OS providers	App developers	Cloud platforms	Credit bureaus	Specialized security provider	Retailers	Payment Networks
1 Access to new customers	■	■				■			■	
2 Access to servicing network	■	■							■	
3 Prime share of customer attention		■	■	■	■	■				
4 Access to consumer data	■	■		■	■	■	■		■	■
5 Access to technology	■	■	■	■	■			■		■
6 Influence over POS systems	■	■	■						■	■
7 Influence over merchants	■	■							■	■
8 Regulatory management	■	■								

Participant

Access platforms where people spend time
Integrated into other popular offerings
Piggyback on others marketing
Enable network effect/word of mouth

Location
KYC
Purchasing behavior
Phone number to account mapping

NFC
QR Code
Coupon redemption

■ Key battleground or potential partnership

Source: McKinsey Payments Practice

ments and banking or more broadly in mobile marketing. If they choose to offer an e-wallet, do they want to develop their own, or partner with an established payments organization or technology firm (OS, OEM or perhaps even an MNO)? Banks have played a key role in combining payments and marketing in the credit card business and should now measure the broader sources of value in the digital environment, whether in mobile marketing (coupons, posters, loyalty) or mobile banking (P2P, billing, e-wallet). On this basis they can then decide where and how to make their best play. For example, each organization should decide whether to cooperate or compete with Google on the marketing front.

Banks must develop ways to think and act like a digital company, while retaining their strong focus on security and reliability.

3. Maintain flexibility

While NFC-based solutions may represent a strategic challenge to banks, banks should remain open to partnerships with organizations willing to fund the implementation of NFC. If banks and other established players avoid working with new entrants to deliver new services to their natural space (airtime, advertising, search), the new challengers will develop payments solutions independent of banks. This would leave banks vulnerable to disintermediation. Any NFC payments initiative should, however, depend largely on funding from the true beneficiaries of proximity payments, that is, MNOs or Internet innovators.

4. Leverage the bank's digital nature

The irony of digital commerce is that physical stores, branches and ATMs give their owners a strategic advantage in the digital ecosystem, where the combination of online and physical presence creates a more dynamic, interactive customer experience. Banks, in the way of sophisticated merchants, can use location-based services to support online searches and price comparisons, while also leveraging their physical presence to deliver value here and now. Banks should create a customer experience that encompasses branch, ATM, online and smart phone. Again, building on their experience in developing the credit card business, banks can also develop solutions to help merchants compete more aggressively in the digital ecosystem.

* * *

Digital commerce poses significant challenges and opportunities for traditional players and young companies alike. For financial services providers, the challenges and opportunities lie in finding the optimal way to participate in this new business landscape by harnessing the power of mobile applications to strengthen their traditional role as a trusted advisor in financial management, payments, liquidity, investments and risk management.

Monica Adractas *is an associate principal, and* **Kausik Rajgopal** *is a principal in McKinsey's San Francisco office.* **Philip Bruno** *is an expert principal in the New York office,* **Olivier Denecker** *is a senior knowledge expert in the Brussels office,* **Viken Gazarian** *is a consultant in the Paris office, and* **Kiyoshi Miura** *is an associate principal in the Tokyo office.*