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Mobile Payments: How Can Banks Seize the Opportunity?

An Approach for Financial Services Institutions

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Contents

1 Abstract

Innovation in technology has changed the way individuals fulfill their banking needs and mobile enabled financial services are at the forefront. Mobile is increasingly becoming a centerpiece of the channel strategy of the banks, not only for its own adoption but also for its role as a 'channel of channels' i.e. a gateway for other channels like telephony, the Internet or Near Field Communication (NFC).

The initial market adoption of Mobile Payments (M-Payments) was slow and sporadic due to technological challenges, limited standardization, fragmented commercial efforts, and most importantly, and the lack of a sustainable business model. Even though some of these challenges still remain, a rise in commercial M-Payments initiatives across the world is a leading indicator for the sustained interest of the channel's potential.

M-Payments can be defined as any payment transactions, whether in close proximity or remote, executed on mobile devices except for Internet payments made through mobile phones. In this paper you will be able to learn about the M-Payments market potential, as well as the different trends in business models and technologies that are shaping the global M-Payments evolution. Decision makers in banks and other financial services firms may use these insights to develop actionable plans to seize the M-Payments opportunity.

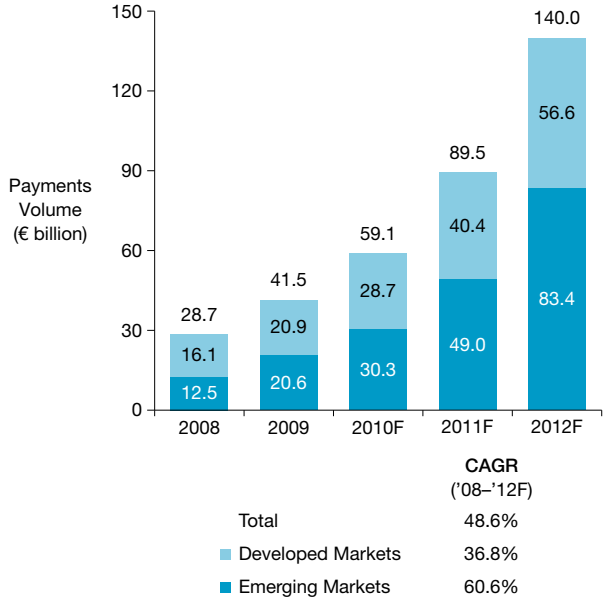
2 Mobile Payments Opportunity

2.1. Market Overview

The global M-Payments market can be termed as heterogeneous meaning that there are wide regional variations in the use of M-Payments products across parameters such as transaction size, payment methods, and business models along a complex value chain. We conservatively estimate the value of global M-Payments at €41.5 billion for 2009, and expect that number to grow to €140 billion by 2012, led by remittances and retail purchases in emerging markets (see Figure 1).

M-Payments usage in the emerging markets is expected to grow much faster than in developed economies due to a large unbanked population and widespread mobile phone penetration among all income classes (e.g. India and China). As a result, from an almost 50/50 percent market split in 2009, the emerging markets are expected to account for 60 percent of the global M-Payments volume by 2012 (see Figure 1).

Figure 1: Global M-Payments Market Volume (Euro Billion), 2008—12F



Source: *World Payments Report 2010*, Capgemini

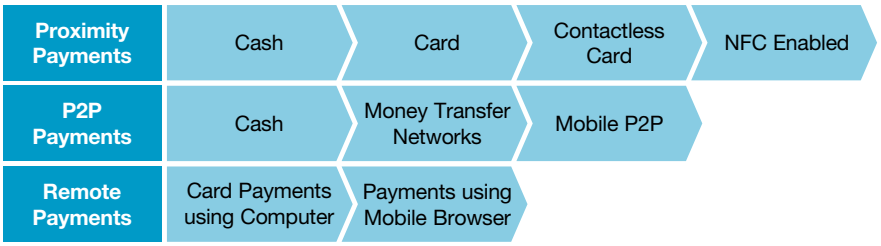
Two dissimilar technologies have emerged as leaders in the M-Payments space - Short Message System (SMS) and NFC, each with unique benefits and limitations:

- SMS will continue to dominate how customers pay with their mobile devices because of its ease of use, ubiquity, and a limited need for large network investments. Three-quarters of all M-Payments transactions were done through SMS in 2009, although the relative share is expected to decline to 65 percent in 2012.
- NFC accounted for 16 percent of M-Payments transactions in 2009 globally, but it is expected to see increased adoption in Western Europe and North America due to large volume shipments of NFC phones in 2011 and contactless infrastructure deployments during the 2010 to 2012. We expect this to lead NFC to a 25 percent share of the total M-Payments transactions by 2012.

2.2. Mobile Payments Landscape

Mobile is evolving as a 'channel of channels', and becoming a potent alternative to telephonic, Internet, cash and card payments. As shown in Figure 2 the following evolutions in payments can be observed.

Figure 2: Evolution of Mobile Payments



Source: Capgemini Analysis, 2010

Convenience for payment along with speed of throughput has been driving the evolution in favor of M-Payments over cash or cards, as the ubiquitous availability of mobiles is replacing the traditional wallets for customers.

The development of M-Payments is driven by country-specific economic, technological and social factors which are shaping the level of penetration and the propensity of users to embrace or reject different payment means. Accordingly, each payments market is driven by a different mix of critical success factors.

In Emerging Markets, banking services are unavailable or unaffordable for large segments of the population, against the backdrop of high mobile phone penetration. As a result, M-Payments have gained significant traction, despite limited involvement by financial institutions. In South East Asia Capgemini's research shows M-Payments transactions have reached the one billion mark annually, with mobile channels most frequently used for shopping, travel reservations, product research (via Internet searches), and banking transactions.

In these markets, M-Payments represent a cost-effective and sufficiently secure medium for various types and sizes of cashless payment transactions. However, workers' remittances, including cross-border remittances, are likely to be the strongest driver of growth in M-Payments transaction volumes, given the substantial number of migrant workers seeking to return funds to their home countries as efficiently and cheaply as possible—and to recipients that may or may not have bank accounts.

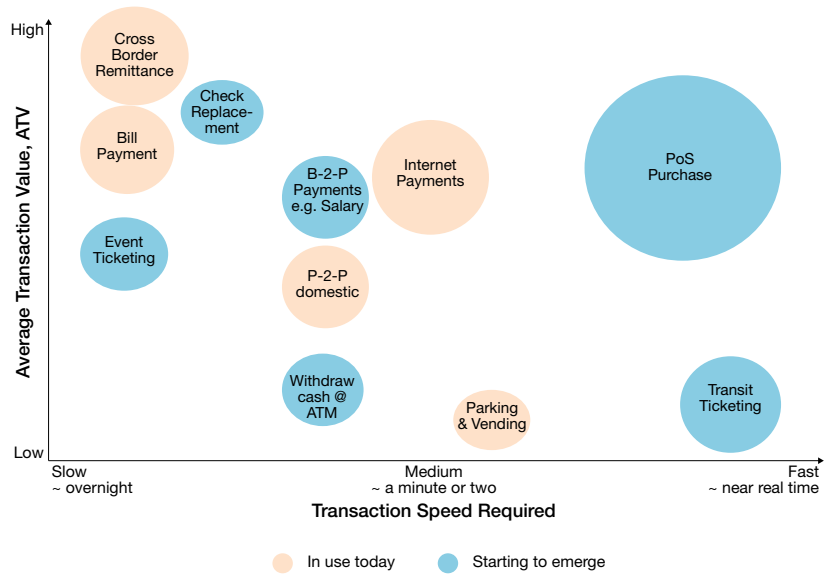
In Developed Markets, M-Payments services are in the formative stage, with commercial adoption limited by a lack of standardization and the reluctance of telecom operators, banks, and other stakeholders to resolve their conflicting interests (in revenue sharing, customer ownership, and support issues) and integrate value chains. Nevertheless, the outlook for M-Payments in these markets remains optimistic for the next three to five years due to:

1. Complementary nature of M-Payments to existing methods
2. Positioning of M-Payments as an alternative to cash and
3. Decisions to decommission checks in markets like the UK (as per the Payments Council National Plan) and the willingness to decrease usage in other countries (US, France)

In developed markets, M-Payments are primarily tied to mobile digital content purchases (ring tones, pictures, and entertainment information), and to an extent to mobile ticketing (tickets at terminals or retrieved on-site). This is in contrast to the emerging markets where M-Payments are mainly used in Person-to-Person (P2P) payments and remittances (domestic and cross-border P2P fund transfers), resulting in a higher average transaction value.

Figure 3 showcases the usage of M-Payments in different scenarios, segmented by the transaction speed and average transaction value. M-Payments are already in frequent use in some of the scenarios but is still to emerge for many of them like ATM cash withdrawal (i.e. to use mobile instead of a card to withdraw cash) or Business-to-Person (B2P) payments (e.g. to pay salary to an individual using a mobile phone). The challenge for banks is to target the right areas for immediate success with customers while in parallel developing other propositions.

Figure 3: Speed and Value Influencing M-Payments Scenarios



Source: Capgemini Analysis, 2010

Mobile proximity purchases and airtime top-ups are expected to drive the mainstream adoption of mobile purchasing. NFC technologies, in particular, offer a clear improvement over existing payment methods, being simpler and faster than network-based SMS and text messaging technologies, and even more convenient than using cash.

However, proximity payments usage cannot expand significantly until merchant infrastructures and mobile phones are more extensively NFC-enabled. Leading handset makers like Apple and Nokia are planning to launch newer devices that are NFC-enabled. To compensate for the lack of NFC infrastructure and enabled handsets, attention has moved from hardware to software and from traditional telecom operators to new entrants offering solutions that allow consumers to pay with existing methods e.g. NFC stickers.

2.3. Mobile Payments Ecosystem

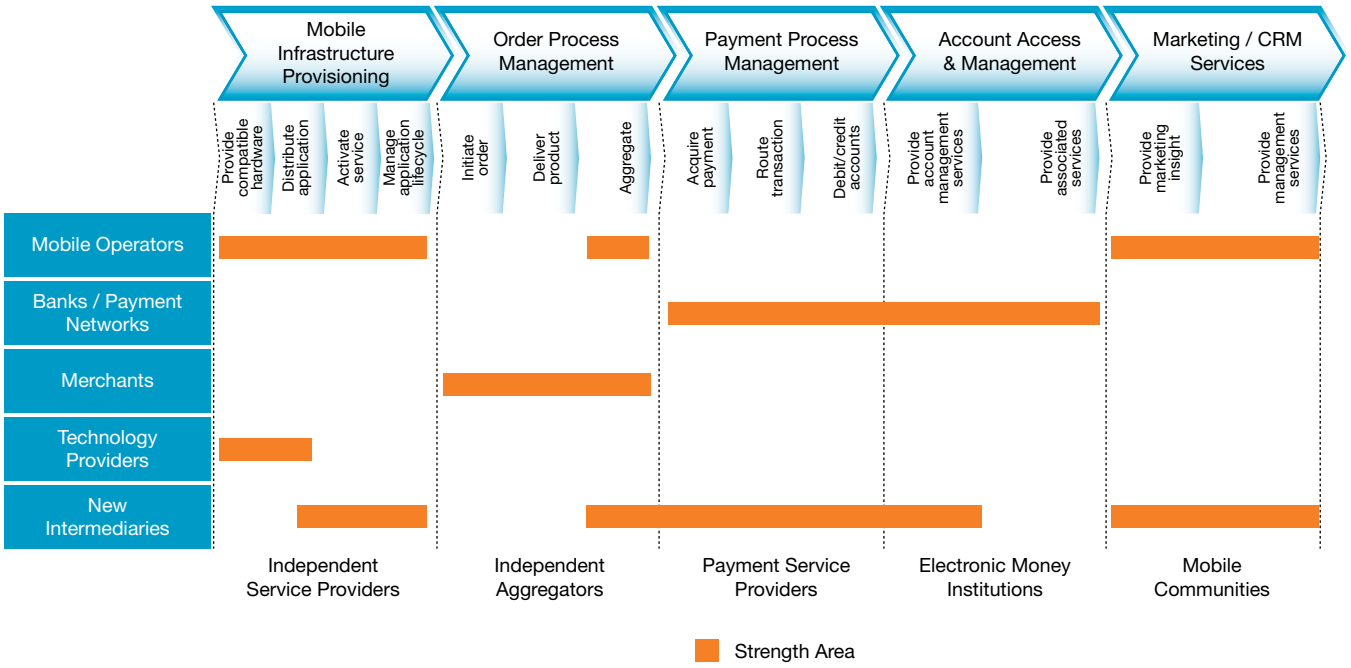
While banks and telecom companies play critical roles in the M-Payments landscape, three models of mobile ecosystems have evolved depending upon the role that these two types of companies own or share in the model:

- Operator-Centric Model: The mobile operator acts independently to deploy M-Payments applications to mobile devices. The applications may support a prepaid stored value model or the charges may be integrated into the customer's bill.
- Bank-Centric Model: A bank deploys M-Payments applications or devices to customers and ensures merchants have the required Point-of-Sales (POS) acceptance capability. The mobile network operator is used as a simple carrier.
- Collaboration Model: This involves collaboration among banks, mobile operators, and other stakeholders in the M-Payments value chain, including a potential trusted third party that manages the deployment of mobile applications.

An Operator-Centric Model is likely to find limited acceptance in the fragmented payment industry due to factors like the lack of relationships between Mobile Network Operators (MNO) and merchants, limited incentives to cooperate, and the complexity of negotiations. Furthermore, deployment aspects like application hosting on 'SIM' have 'customer ownership' implications that challenge existing industry structures, hampering the possibilities of the adoption of this model.

The Collaboration Model is likely to be the best option, although an initiative would need to navigate the complexity of negotiations and revenue sharing agreements, unless all the involved stakeholders agree on using a Trusted Service Manager (TSM). TSMs can foster trust and stability within the M-Payments ecosystem through a central position in the value chain, developing relationships and enforcing contracts with service providers on the one hand, and with mobile operators on the other. A neutral intermediary would also guarantee end-to-end security for consumer protection (such as authentication to protect against unauthorized transfer of funds) and data privacy (to protect against unsolicited text messages, malware, and spyware on mobile devices).

Figure 4: Mobile Players Strength in M-Payments Value Chain



Source: Capgemini Analysis, 2010

As shown in Figure 4, each player has relative strengths along the M-Payments value chain making the case for success of the Collaboration Model even stronger.

In general, the M-Payments market has significant potential in the medium- to long-term, but all stakeholders (mobile operators, banks, payment-card networks, merchants, and mobile device manufacturers) will need to cooperate to manage the economics of the M-Payments business models, manage the risks of each party, and deal with issues ranging from security concerns (Know-Your-Customer (KYC) protocols[1]) to customer preferences.

The specific country regulations and the maturity of mobile network operators (MNOs) are important for a bank to make decisions on screening and selecting partners. Considering the complexities of the M-Payments ecosystem, banks may need to structure multi-dimensional partnerships depending on their target product offerings on mobile. Multiple partnerships would have to co-exist, depending upon the prevalent business model(s) in particular region(s).

Our evaluation of various M-Payments initiatives (see Appendix for details) point out the following key success factors of an M-Payments ecosystem:

- Conducive regional / country conditions with regards to regulations, business model, unbanked opportunity;
- Critical mass of users enabled by ubiquitous the POS acceptance, investments in marketing and promotions, simplicity of registration and straightforward payment processes.

[1] KYC protocols comprise the systems and procedures needed to properly identify customers to control fraud, money laundering and other illicit activity.

3 Making Mobile Payments Work

To translate the market potential to a success at the institutional level, banks and other financial institutions will need to carefully calibrate their mobile propositions and platforms. We highlight three leading solution aspects that banks can integrate into their implementation approach:

Define an Agile Solution: Banks should develop multiple scenarios of the evolution paths of mobile solutions in 'target markets'. This should include as-is ecosystem; model of payments (i.e. collaborative / operator centric); central bank vision and operational plans of new infrastructures for payments; regulatory compliance; and the target product portfolio to be made available on mobile. Interim and future propositions of M-Payments should be as 'open' as possible to foster provision of a broad set of consumer payment choices.

Banks should then define the target technology solution at two levels: strategic (for the markets in scope) and tactical (for a market). While a strategic solution may be a reality in the medium- to long-term, banks have to blend multiple tactical solutions to accommodate market specific requirements on a global / near global platform. Considering the evolution, no ready M-Payments solution would fit all the requirements of a bank and accordingly build versus buy decisions have to be aligned at both tactical and strategic levels. This would mean the mobile proposition(s) at the point of departure may be more than one, but would need to have embedded agile characteristics to seamlessly merge into a unified point of arrival at the end of the plan horizon.

Forge Partnerships: Banks should also develop partnerships as a key building block in the proposition. In markets where the dominant model is under evolution, the partnership approach lowers cost of realization and enables adoption of a 'portfolio of solutions' approach. Partnerships encompass relationships with merchants, payment networks, technology service providers (software and hardware), non-banks, handset operators (e.g. NFC-enabled), and mobile network operators. Pilot launches can provide valuable insights and feedback into customer preferences.

Re-use Existing Investments: Solution / Initiative teams entrusted with mobile projects can also secure internal sponsorships for mobile projects by aligning solution requirements with the hub / factory transformation projects that the bank as a whole may be pursuing. Re-use of infrastructure delivers consistent user experience, reduces the cost of project and maintenance, thereby improving the return on investment.

4 Appendix

4.1. Selected Global Mobile Payments Initiatives

Company	Country	Initiative	Launch Year	Service Uptake	Remarks
Airtel State Bank of India	India	Form joint venture to target financial inclusion. The Joint Venture will become the Business Correspondent of SBI and offer banking products and services at affordable cost to the citizens in unbanked and other areas.	2011	N/A	The joint venture will engage airtel's retailers as Customer Service Points (CSP) all over India in a phased manner. With this existing and new airtel mobile customers will be able to visit these outlets and open new SBI bank accounts and avail of other banking products and services available at the CSPs. Additionally, existing SBI customers will also get serviced at these outlets.
AT&T Barclays Discover T-Mobile Verizon	United States	Joint venture among AT&T, Verizon, T-Mobile, Discover and Barclays for initiative called Isis, to utilize smartphone and NFC technology to modernize the payments process.	2010	N/A	Isis is planned to create a mobile wallet that ultimately will eliminate the need for consumers to carry cash, credit and debit cards, reward cards, coupons, tickets and transit passes.
Citi Standard Chartered Zain	Kenya, Tanzania, Uganda, Niger, Malawi, Sierra Leone, Ghana	Zain-Zap allows users to transfer money and manage their bank accounts.	2009	More that 12 million customers fully-enabled for the service across seven African nations as of 2010.	Transaction fees of US$0.13 are charged for the transfer of money between Zap accounts.
MTN Standard Chartered	South Africa, Uganda	MTN Mobile Money service allows users to transfer money.	2009 (Uganda) 2005 (SA)	MTN had 100,000 customers as of September 2009 (Uganda).	For money transfers above US$5, MTN charges US$0.40 per transaction.
Deutsche Bank Luup	80 countries in Europe, Middle East and Asia	Partnership between Luup and Deutsche Bank to allow the bank's GTB clients to offer instant and secure payments and money transfer service from any mobile device with any mobile network.	2009	N/A	First initiative where a major commercial bank has offered a cross-border mobile payments service to its banking and corporate customers.
Vodacom	South Africa, Tanzania	1. Vodacom- PayPoint allows users to accept payments from credit cards in SA. 2. Vodacom's M-PESA enables customers to transfer money in Tanzania.	2008 (Tanzania) 2005 (SA)	1.5 million Vodafone M-PESA subscribers in Tanzania as of 2009.	1. Paypoint service costs US$6.44 per Month. 2. M-PESA costs US$0.14 per transaction.
Roshan Vodafone	Afghanistan	M-Paisa acts as a vehicle for microfinance institutions' (MFI) loan disbursements and repayments, with salary disbursement and airtime distribution.	February 2008	N/A	Based on SMS and Interactive Voice Response (IVR) system Charges US$1.07 for sending money to registered M-Paisa user.
Tigo	Paraguay	Tigo Cash enables subscribers to use their mobiles to make payments and transfers as well as recharging mobile credit and withdrawing cash.	2008	150,000 subscribers in 2008	Subscribers pay money into a Tigo Cash account and then use this money to pay small bills in neighboring shops (which also have to be Tigo Cash clients) with very low affordable fees.
Safaricom Vodafone	Kenya, Egypt	1. Safaricom's MPESA allows users to access bank accounts and transfer money in Kenya. 2. Vodafone Mobile Banking allows users to access bank accounts and transfer money.	2007	Over 8 million subscribers, M-PESA accounted for US$300 million in monthly M-Payment transfers in 2009.	Safaricom charges US$0.37 for money transfer of up to US$440 to a registered M-PESA user.

Company	Country	Initiative	Launch Year	Service Uptake	Remarks
Mobile Money	Jamaica	Mobile Money allows users to prepay for goods and services by adding funds to their Mobile Money account and transfer money between accounts.	2007	3,000 active affiliates selling to more than 30,000 customers.	Payments made at Paymaster of less than US$1,200 made through payment agencies / banks will attract a recovery fee of US$45. Payments of US$1,200 or more will NOT attract the US$45 recovery fee.
3 O2 Orange T-Mobile Vodafone	United Kingdom	Orange, Vodafone, T-Mobile, 3 and O2 launched a payment system called Payforit that allows subscribers to use the mobile phones to pay for low value purchases.	2006	Over 52 million mobile phone users in the UK alone.	Only browsing costs are charged in accordance with the mobile operator data tariff. Any purchases made are charged directly to the monthly phone bill, or deducted from the prepaid credit.
Oi Paggo	Brazil	Oi Paggo offers the virtual credit card using a relatively simple SMS based payment service from the clients mobile phone to the stores.	2006	More than 1 million.	This initiative competes against traditional credit card players and is launching a trial of NFC technology.
Zain	Jordan, Kuwait	Zain M-payment service allows users to recharge airtime with funds from their bank accounts and allows users to transfer airtime to other users.	2006 (Kuwait) 2005 (Jordan)	N/A	Zain charges US$0.20 per transaction.
Rabo Mobiel	Netherlands	Rabo Mobiel runs in cooperation with parent company Rabobank Nederland, postpaid and prepaid mobile telecommunications services, and mobile banking and payment services.	2006	At the end of 2007, Rabo Mobiel claimed to have 125,000 customers.	Using SMS payment, transferring money from account to 'ordinary' bank account costs €0.50.
Citi MasterCard Verizon	United States	Obopay is a peer-to-peer mobile payment company enabling cell phone users to send and receive money through their phones via a mobile web browser or SMS.	2005	N/A	Obopay charges a fee of US$0.10 for sending money and a 2.5 percent charge for adding money from a debit or credit card.
NTT Do Co Mo Sumitomo Bank	Japan	The Osaifu mobile phone can be used as a wallet, credit card, ID card or a key to the home. It is equipped with FeliCa contactless IC Chips.	2004	53.5 million customers.	One of the most successful mobile payments scheme.
Globe Telecom	Philippines	GCASH is an internationally-acclaimed micropayment service which allows G-Cash subscribers to transfer credit between mobiles, make retail payments and person-to-person transactions.	2004	GCASH has more than 1.2 million registered users with transaction volume of about 5 billion a month.	Cost of a text message and withdrawals and deposits (made through GLOBE offices) cost 1 percent of the transaction.
Vodafone	Spain	Mobipay can be used for purchases on the Internet, pay for a taxi, top up a prepaid card, public transport ticketing, authorizing payments and send money to another person.	2002	400,000 registered users in 2009 with 2,000 transactions per day.	Charges €0.08 cent per transaction.
MasterCard PayPass JP Morgan Chase	United States	MasterCard worked with Nokia, AT&T Wireless, and JPMorgan Chase to incorporate MasterCard PayPass into mobile phones using Near Field Communication technology, in Dallas, Texas.	2002	N/A	The use of MasterCard PayPass technology has no bearing on pricing. Pricing is entirely dependent on the underlying, existing payment application.
Mobilkom Austria One	Austria	Austrian mobile operators Mobilkom Austria and One are the owners of Paybox Austria. Paybox offers mobile parking, ticketing for public transport, online shopping, mobile POS (e.g. vending machines, gas station), remittance (money transfer).	2001	N/A	Charges €19 subscription fee per year. All post-paid subscribers are automatically enabled for the service.

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