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Mobile Payment 2.0: The Next-Generation Model

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- Mobile phones have far greater reach than any other communication channel today.
- The mobile channel is ideal for making micro-payments more convenient in developed economies and micro-finance more accessible in emerging economies.
- A technology-led, next-generation model would bring about extremely rapid growth in mobile payments.
- The most influential participant in the next-generation model will be the one that has the strongest link to the paying customer.

The mobile phone is evolving rapidly as a channel for financial services. As networks expand, banks are using mobiles as a channel to reach out to their existing customers, however, in the future, mobile phones will be increasingly used for making low-value payments and purchases in developed economies, while also providing access to the unbanked rural market in emerging economies. Mobile phones are a low-cost network and ideal for micro-payments and micro-finance[1].

The key challenge for its success is to ensure that mobile payments are easy to set up, simple to make and are secure. Those service providers that can achieve this first will have an edge in capturing the mobile payments market and innovative use of technology will be key to their success.

This article aims to give an insight into current market trends and how technology will facilitate mobile payments over the next decade.

Current Market Trends

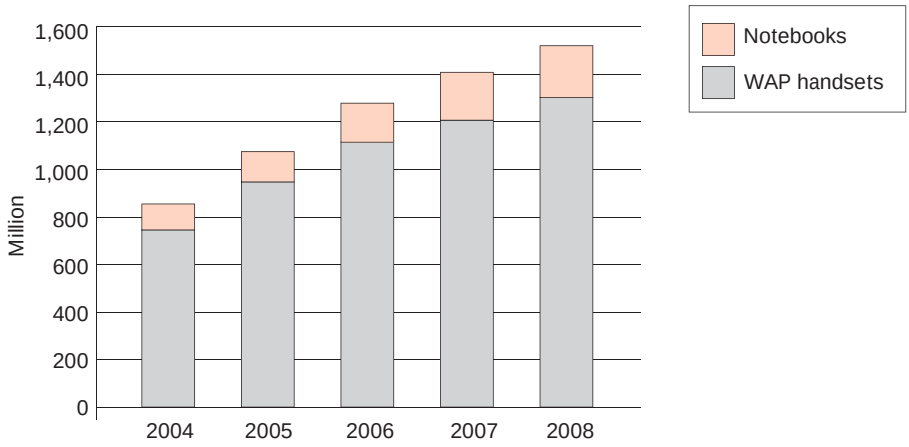
Mobile devices are gaining acceptance as the preferred channel of communication. Mobile phones are relatively affordable, personal and can be used anywhere and at anytime. Mobile phones have reached areas where personal computers have failed to go, especially in emerging economies.

Research consultancy iGR expects data sent over mobile networks to increase to 6.94 terabytes by 2011.[2] Figure 1 shows how the growth of WAP[3] handsets is far higher than the growth of notebook computers. In short, mobile devices are becoming a preferred channel of information exchange.

It is estimated that US micro-payments total USD1tr annually, which accounts for more than 20% of total personal macro-payments market by value.[4] Marketing consultants Juniper Research predicts that the total transaction value for mobile payments will reach USD22bn by the end of 2011.[5] If mobile devices can capture even a small fraction of the micro-payments business, its growth will be far greater than the size of today's entire payments market for banks.

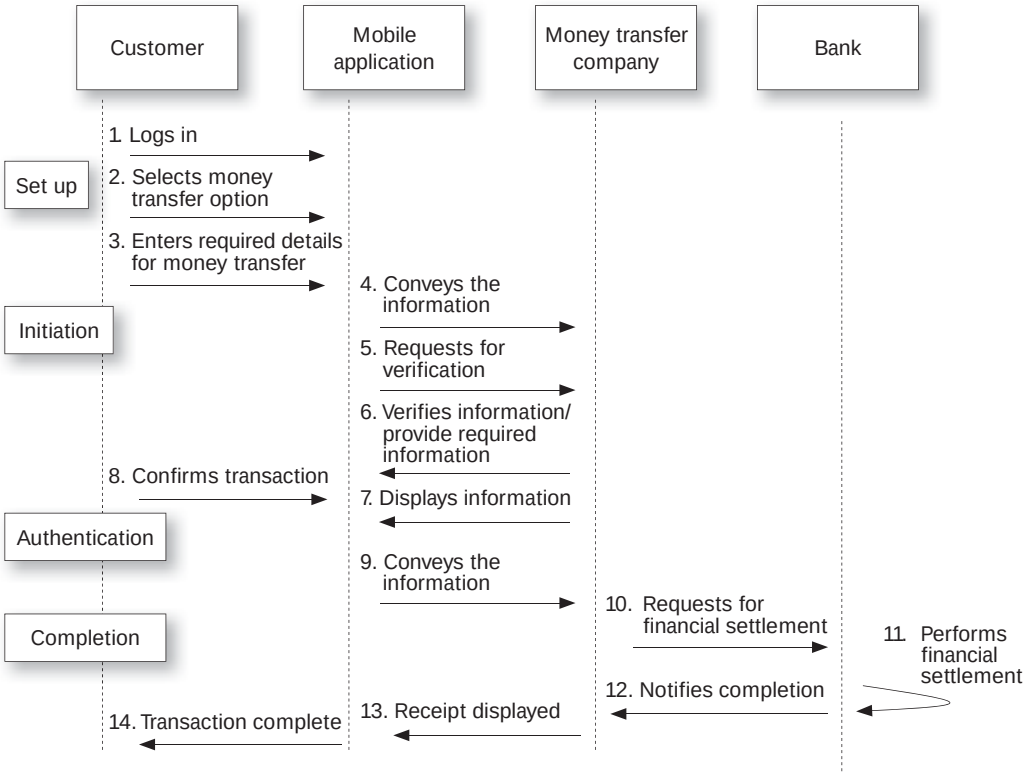
1. *Micro-payment is defined as a transaction of less than USD5. Micro finance is a loan to poor or low-income clients in the range of USD50 to USD600 with a repayment period of six to 12 months.*
2. *"IMS: A Model of Bandwidth Usage", iGR, Inc., April 2007.*
3. *Wireless Application Protocol is the technology that allows access to the Internet by a mobile phone.*
4. *"Mobile Payments: Mobile Operator Market Opportunities and Business Models", Diamond Consultants, August 2007.*
5. *"Mobile Payments to generate almost USD22bn of transactions by 2011 and be adopted by 204 million mobile phone users", Juniper Research, press release dated 9 July 2007.*

FIGURE 1: Forecast of Comparative Growth of Notebooks and WAP Handsets



Source: T-Mobile, modelled on Credit Suisse First Boston, Mobile Data 2004, Pyramid Research, Global Mobile Chapex Handbook, August 2004

FIGURE 2: Mobile Payment Work Flow



Source: Infosys Technologies

Figure 2 shows a typical mobile payment transaction and illustrates how the process depends on banks for financial clearing and settlement. The key to success for this business lies in a payment business model that can efficiently deliver these work flows without relying too heavily on banks.

Mobile Payment Models

Multiple payment models have evolved as a result of the boom in mobile phone services. Following are some of the business models that provide access to existing payment services of credit and debit cards and bank accounts over the mobile phone.

GPRS/SMS Payment

Payment by General Packet Radio Service (GPRS)[6] or short message service (SMS) is one of the most commonly used models where mobile payment companies are looking to bridge the gap between the financial services world and mobile operators. One such example in the UK and Europe is Monitise, which has HSBC, first direct, Alliance & Leicester, Royal Bank of Scotland, Vodafone, Orange, O2, T-Mobile and Hutchison 3G among its partners.[7] Instead of liaising with a particular bank and operator, Monitise's service is designed to be compatible with any bank or mobile network and it claims to be available on 95% of the handsets currently available in the UK. The service connects directly into financial institutions using their existing payment processing connections, and is built on international banking standards. In June 2008, Monitise revealed that user registration in the UK is growing, with service coverage exceeding 50% of all current account customers, up from 37% in January 2007. The group has established operations in the US and is assessing opportunities in other territories worldwide.

Near Field Communication

The technology that enables payment by mobile phone is called Near Field Communications (NFC). The service offerings are embedded on a consumer SIM card (the portable memory chip), and an NFC chip in the handset enables short-range wireless radio communication between the phone and the reader, which triggers the payment. Customers can simply swipe their phones across a reader for low-value payments, or punch in a pin code into the phone to authorise larger payments.

This is a more advanced payment method where a new-generation mobile phone can be linked to credit or debit accounts. The one-swipe payment technology could potentially replace cards and cash and make it possible to go shopping armed only with a mobile phone.

A "pay-by-mobile" system is already in operation in Japan, where it is commonly called "o-saifu keitai" (or mobile wallet). Trials are also currently taking place in France, Sweden and the US.

Manual Remittance

The manual remittance model that has been pioneered by Vodafone's M-Pesa service has a huge amount of scope in developing markets, where the distribution of mobile providers enables them to reach out to locations where banks don't have a branch.[8] Cash remittances to countries in Africa and Asia remain a large payment business. The M-Pesa model sees mobile providers as a financial service subsidiary that offers the final delivery of cash to the ultimate beneficiary – the mobile phone user. In effect, in this model the mobile service provider becomes a channel of the bank.

6. *General Packet Radio Service is the wireless communication system used by Global System for Mobile communication phones, one of the most popular mobile phone systems in the world.*
7. *For more information, please refer to the Monetise web site, www.monetisegroup.com.*
8. *For more information, please refer to the Vodafone web site, www.vodafone.com.*

Challenges

But challenges remain that could hinder the growth of mobile payments, as all of these models require the linking up of both the payer's and beneficiary's bank accounts to mobile phones. All these business models rely on making payments through existing bank accounts and payment networks – which are not designed for high-volume low-value transactions such as micro-payments and micro-finance.

The future mobile payment business model needs to address the following challenges to be successful.

Ensuring Instant Person-to-Person Transfer of Value

Mobile payments currently get processed over existing financial clearing mechanisms through bank accounts and usually take two working days to settle. Only mobile payments via debit and credit cards result in real-time transfer as they use payment card networks. Today, the payment beneficiary must have a bank account to receive the payment, and the receiving merchant must have a link with a payments network. These clearing and settlement networks are either slow or expensive for micro-transactions.

Balance between Security and Convenience

Central to mobile payment success is finding the proper balance between security and customer convenience. The Internet banking channel has been quite successful in this regard, implementing stronger authentication and, in some instances, layers of advanced back-end fraud-detection solutions. A mobile payment set-up process should be simple, and transactions should be easy to complete and secure.

Payment Clearing and Settlement

Current clearing and settlement of mobile payments use the existing mechanisms of the banking industry. Primarily, payments are settled through automated clearing houses for account debits or payment card networks for credit and debit card payments. These networks have their own costs and settlement delays, which are not adequate for the large growth of mobile payments. Ensuring real-time clearing and settlement will be important for person-to-person micro-transfers.

Fraud Prevention and Anti Money-Laundering Checks

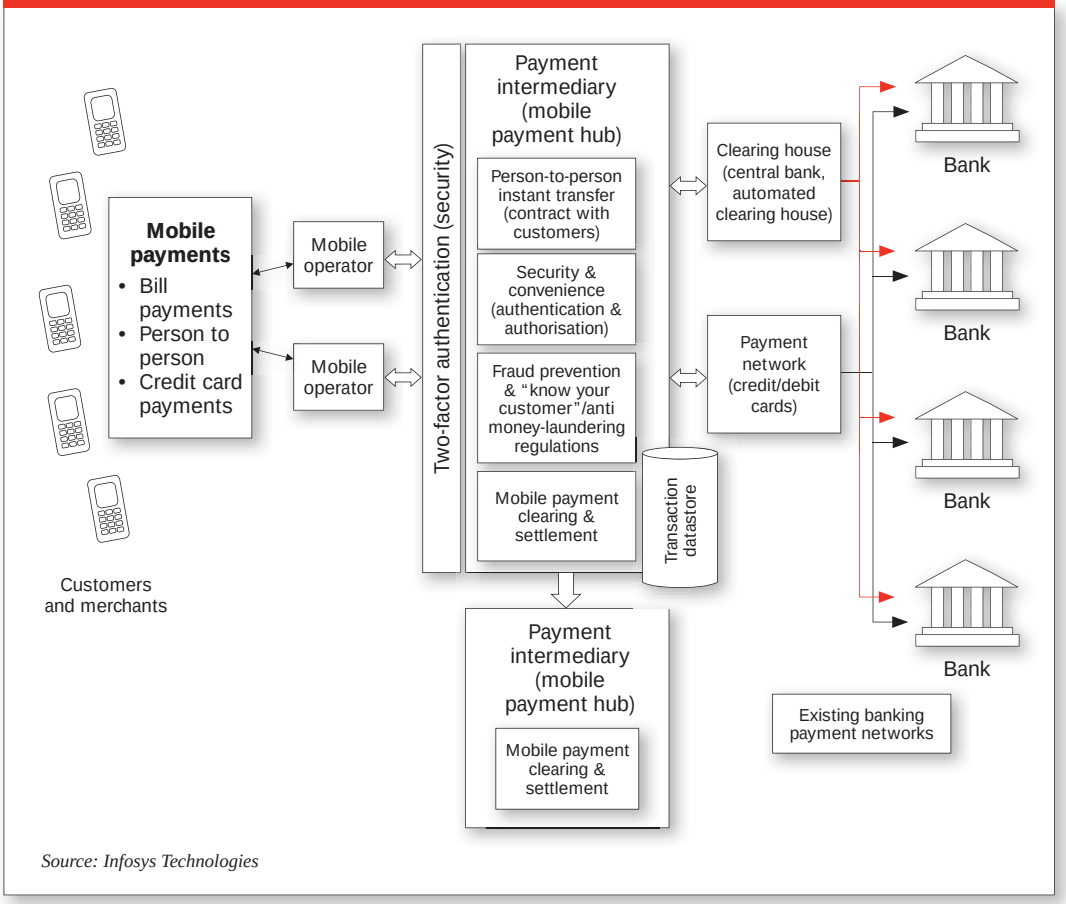
Central banks in most countries have enacted legislation that requires that all payments be monitored for money laundering and fraud prevention. While most high-risk cross-border payments are compliance-filtered by banks, current systems are not adequately built to a handle a large number of small-value payments. A new set of controls would be required to prevent the fraudulent use of mobile channels to make illegal payments. Payment pattern recognition tools will be more relevant as most mobile payments will be low-value transactions.

Next-Generation Model

To address these challenges, a business model would require a payment intermediary to ensure instant money transfer, security, clearing and settlement and money-laundering checks.

Such an intermediary would act as a hub for mobile payments – connecting with users of their services over different mobile networks. Users would be able to make payments to each other directly through mobile phones without necessarily going through a bank. The intermediary would maintain payment accounts for each mobile payment service user. It would perform real-time clearing of payments between users. Users could both make and receive payments, so merchants would just need to have a mobile phone. It would perform net settlement with banks only at the end of the day.

FIGURE 3: Mobile Payment 2.0



Source: Infosys Technologies

The intermediary would offer a technology and operations platform where:

- Mobile operators are the communication channel provider; and
- Banks are the ultimate account holding institutions.

Entry barriers to the intermediary market remain low. As has been seen in other industries, there can quickly be a profusion of new entrants, all with links to merchants, mobile service providers and banks. The key features of a market-dominating, next-generation entrant will be:

- First-mover advantage: Tying up with the maximum number of merchants and attracting paying customers to the service; and
- Operational efficiency: A settlement mechanism with banks, mobile providers and merchants.

Benefits of Mobile Payment 2.0

The benefits of mobile phone payments services are diverse. Given the limited access to financial services in "unbanked" rural locations, mobile payments will bring convenience and access to customers, especially those in remote areas. The rise of the mobile phone channel will potentially shift the balance of power

between customers and banks. For example, in the UK, price comparison web sites for motor insurance have become so popular that all insurance companies have been forced to offer their products on such intermediary web sites. Similarly, in mobile payments, the ownership of the customer relationship will pass from the bank to the payment intermediary, thereby allowing customers to benefit from the convenience of another payments channel for small-value transactions.

Conclusion

The evolution of mobile payment models will be determined by the power balance between the key participants – mobile providers, banks, merchants, the regulatory agencies and, most importantly, the customers. Next-generation models will evolve based on customer preferences. The most influential participant in the next-generation model will be the one that provides the greatest benefit and has the strongest link to the paying customer.

Ultimately, the long-term success of mobile payments depends on the following factors:

- Instant person-to-person transfer of value;
- Security and convenience;
- Efficient payment clearing and settlement;
- Fraud prevention and regulatory anti-money-laundering monitoring; and
- Attractive pricing.

Those mobile payment intermediaries using new-generation technology that can deliver the above requirements are set to dominate the mobile payments market in the next decade. And as this next-generation of technology makes payment by mobile more convenient and commonplace, extremely rapid growth of mobile payments can be expected.