Mobile Payment – The Next Big Thing?

01 Dec 07

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Cutting-edge Technology a Pre-requisite for Disruptive Innovation?

In October 07, I wrote that with 2.7 Billion mobile phone subscribers across the world, companies that develop business models or strategies that focus on using the mobile phone to deliver services that give the consumers choice and control over what they do will create the disruptive impact.

Before we discuss some of such possibilities, let me remind that that business proposition that create the disruptive impact need not be supported by the latest technology. Very often, an existing simple and well-used technology can similarly achieve the same outcome if the appropriate business prepositions are adopted with good understanding of market conditions and consumer expectation are met.

To drive home the point that newer or cutting edge technologies do not often bring about the disruptive impact, let's look back at what some banks have been doing in this arena.

Europe, in particularly the Nordic region where well known handset manufacturers such has Nokia has its headquarters are amongst the world's early adopters of mobile technology. The mobile phone penetrations in these countries are also amongst the world's highest; for instance, Italy (146%), UK (128%), Czech Republic (125%), Austria (115%), Germany (111%), Finland (106%), Norway (106%), etc. As a consequence, a number of non-profit organisations were set up in Europe with the noble intention of establishing framework for collaboration for mobile financial services amongst various interested parties ("actors" as they are commonly referred to in Europe) such as financial institutions, equipment manufacturers, payment service providers, telephone operators, card manufacturers, etc.

One such setup is the Mobey Forum (www.mobeyforum.org) that was established back in May 2000 by Europe leading banks and handset manufacturers with the single mission to encourage the use of mobile technology in financial services; namely banking and payment. Since early 2002, various trials were conducted in Europe but while Mobey forum advocate the use of open architecture, significant amount of considerations went into security measures and the development of untried and newer technologies. As a result, these earlier trials did not extend beyond their trial period.

In 2006, Mobey Forum published a document "Mobile Financial Services Business Ecosystem Scenarios & Consequences". In this Executive Summary, it was highlighted that financial sector worldwide must meet three requirements in order to develop successful mass-market mobile financial services and these requirements are:

- Services must be easy to use
- Services must be secure and trusted
- Services must be based on commercially viable business models

While these requirements appear to be common-sense stuff, very often an in-balance emphasis on one or more of the requirements could lead to disastrous results. For instance, in earnest to make an application very user friendly, minimal security measure could be overlooked resulting in fraud. On the other hand, an overemphasis on security requirements such as downloading of security plug-in through registered site, separate visit to branches for face-to-face verification, use of additional hardware token and specialized handset could turn-off consumers.

Are We Learning?

Back in 2001, the Infocom Development Authority (IDA) of Singapore as part of the Wired for Wireless initiative embarked on the first Call-for-Collaboration (CFC) with the industry players. This CFC focused on Mobile Payment and the IDA in conjunction with 5 short listed consortiums comprising financial institutions, mobile phone manufacturers, smart card manufactures, certification authority, telephone operators, retailers and payment service providers invested about US$12.5 Million in a total of 11 technology trials to assess the viability of mobile payments.

Technologies used in these trials ranged from the latest wireless public key infrastructure coupled with dual SIM-Card phones, Radio Frequency Identification (RFID), Interactive Voice Response (IVR), Infrared (IR), Bluetooth, Wireless Application Protocol (WAP) and Short Messaging Service (SMS).

Involving more than 7,000 consumers in the various trials, the following observations were compiled to aid future mobile payment developments:

- Consumers are more likely to use mobile payments for six categories of services including the purchase of perishables (goods with limited shelf lives), bill and fine payments, unmanned vending payments, purchase of Internet and mobile content and applications, top-up of pre-paid accounts and finally, Person-to-Person (P2P) payments.
- Consumers are less likely to use mobile payments for face-to-face retail payments, compared to remote payments.
- Consumers prefer to use credit, if available, as a form of payment method for mobile payments.
- Consumers prefer to use existing handsets for mobile payments and are unlikely to purchase new handsets in order to conduct mobile payments

For businesses and would-be developers, the findings from the 11 pilot programmes revealed that:

- Consumers aged 20-40 (and not teens) appear to be the most receptive to using mobile payments for the services deployed in the trial.
- Registration processes and user interface need to be simplified in order to encourage greater consumer adoption.
- SMS may not be well-suited for mobile payment transactions that are lengthy.
- Wireless PKI may be too costly to implement for smaller value mobile payment transactions

The full 109-page report published in 2003 can be downloaded from:
http://www.ida.gov.sg/doc/programmes/programmes_level3/programmes/mobile%20payment/M-Payments_CFC_Report_March_2003.pdf

Notwithstanding the earlier finding that consumers are less likely to use mobile payment for face-to-face retail payments and that consumers prefer to use existing handsets for mobile payments, NETS (Singapore) and SingTel announced collaboration in Sep 07 to launch a pilot program using Near Field Communication (NFC) and Over-the-Air (OTA) technologies for over-the-counter payment using the mobile phone as the electronic purse. Touted as the first of such trial in Asia, you can read the press release at http://www.nets.com.sg/corporate/press2007_04sep.php

Not to be out-done by NETS and SingTel, EZ-Link and Starhub started their pilot trial on 17 Oct 07 by issuing 1,000 special phone sets that are NFC enabled to a group of pre-selected customers. Even if consumers' preference has changed over the past few years, for the longest time, industry players and interested parties have lamented that given the limited market size in Singapore; players like NETS, EZ-Link and banks should be collaborating than competing with each other.

Dated Technology, Disruptive Innovations

The Short Messaging Service (sms) often also known as text messaging was established as part of the GSM standard more than 20 years ago in 1985. History has it that the first commercial sms was sent by Riku Pihkonen, an engineering student using a Nokia GSM phone in 1993. While sms adoption was slow initially, about 0.4 sms per GSM customer per month in 1995; this has grown to 9 million sms per hour on New Year's Day in 2007 just in UK alone. Globally, sms is a massive industry generating US$80 million revenue for telcos across the world in 2006.

A dated technology, sms other than being used as text messaging for communication, flirting, etc it is widely adopted in numerous applications, from downloading of ring tones, online polling, online donation, lucky draws and many other applications. Back in 2003 and prior to the regulatory requirement to use hardware token, DBS Bank was the first bank in Singapore to use sms as an added security layer to complement the static PIN-based security features of Internet Banking.

While monetary authorities and most banks across the world frowned upon the usage of sms as the only security measure for mobile transactions; many companies adopt this feature for a number of small to medium value mobile transactions. The reasons for adopting sms are plentiful; from the fact that sms is available in all mobile phones; it is easy to use, it is well-embraced by mobile phone users and development cost is much cheaper than other mobile applications.

Well-known companies (other than banks) such as PayPal Mobile CheckOut offer sms as one of their payment activation. In 2005, Obopay, a US payment services company was setup primarily to use the mobile phone infrastructure for online payment services. In Aug 2007, Obopay tied up with Citibank to pilot the person-to-person (P2P) mobile transfer and payment services in Chicago and Boston.

Obopay mobile payment service stands out in two areas; firstly it allows customers to use sms as the mode of payment which effectively means anyone with a mobile phone will be able to use the service. Secondly, by offering a companion pre-paid debit card through tie-up with MasterCard, the customer is able to either withdraw cash or make payment over-the-counter using any of the existing credit/debit card infrastructures that accept MasterCard. This is clearly an example that demonstrates how a small company can leverage on existing technology (sms) and well-established infrastructure (debit/credit card) to offer mobile payment services to meet the demand created by the proliferation of mobile phone users.

Conclusion

While mobile phones impose a different set of constraints compared to desktop and notebook computers, these devices also open the door to a slew of new applications and services and created new demand. The most important consideration is that mobile phone follows you wherever you go, making it possible to replace our wallets and credit cards in the near future. Quite often companies and banks that embarked on developing mobile payment services are too concerned about protecting their investments by developing new and untried solutions and taking the slow and painful steps of re-inventing the payment infrastructure. Many of these companies struggled to influence existing retailers and merchants to install proprietary readers that interact with specialized mobile phones. Telephone operators on the other hand, create "walled-garden" to protect their turf and hence making it difficult for mobile payment service providers to offer their services to customers of competing telephone operators. Until all these players recognize the value of co-operation to co-exist, the mobile payment industry will continue to be fragmented.

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