



# **GLOBAL OVERVIEW OF COMMERCIAL IMPLEMENTATIONS AND PILOTS OF NFC PAYMENTS DURING 2009**

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As with all new technologies, market introduction usually happens in phases. NFC is no exception in this regard. The phases of NFC introduction are:

1. Technical testing 2005-2007
2. Consumer acceptance testing 2006-2008
3. Ecosystem testing and commercial roll-outs 2007-

The first mobile contactless payment pilot was implemented by Nordea, Nokia and Visa Inc. in Lahti, Finland, back in 2003-2004. The first NFC pilot took place during 2005 in Atlanta. To date there have been around 100 NFC pilots testing the payment functionality. This technology works, and the pilot results have also revealed its consumer potential. More than 80 per cent of pilot consumers like the NFC payment and ticketing concept, but a broad infrastructure of acceptance is needed to encourage uptake. In addition to existing infrastructure, transit systems have a large and frequent user base, which has made transit solutions a good starting point. One visible key trend has been a merging of payment and transit solutions, meaning the use of general payment for transit, and many transit payment systems are already used for general-purpose payments.

Key lessons learned so far include the need for a rather broad service offering. Payments and transit ticketing alone are not enough to motivate users and form a successful business case. Customer care processes must also be well considered and communicated to customers, and they must be easy to use. Service launches and replacements must be smooth and comfortable experiences. Another important lesson is that transport and banking applications must be multi-operator for mass-market acceptance, i.e. the customer must have the freedom to use the services independently of the mobile operator relationship.

Today's pilots mainly seek to test ecosystem-level co-operation between stakeholders and business model construction. Although there have been a large number of pilots globally, there

are few commercial implementations so far. The first commercial launch of NFC payment services took place in China in 2007, followed by launches in Germany and Austria during 2008. All of these included public transport ticket purchasing and certain related services. A commercial launch occurred in Malaysia in April of this year.

### **The Malaysian launch**

The first commercial implementation of Visa payWave on NFC phones took place in Malaysia, which was also the first place in the world where this technology was trialled. Maybank and Maxis ran a trial in association with the transit operator Touch'n Go, Visa, RapidKL and Nokia in and around Kuala Lumpur from October 2007 to February 2008. The Payment, Transport and Service Discovery pilot has now been followed by a commercial launch. Malaysia's largest mobile operator Maxis Communications and Maybank went live with a commercial NFC launch in April 2009.

This is the first commercial service to integrate multiple NFC applications – consumers can use the NFC phone for contactless credit card payment, electronic payment for transit, toll and parking payment. The Malaysian launch is also the first commercial NFC service to feature over-the-air personalisation of credit card information over a mobile service operator network using a Trusted Service Manager interface.

Around 3,000 point-of-sale terminals in Malaysia currently support NFC-compatible Visa payWave contactless cards. In addition to payment transactions, customers can use the phones to pay tolls, transit, parking and theme park charges. There are 1,800 merchant locations accepting the Visa payWave application, and over 3,000 Touch'n Go points nationwide.

### **Payez Mobile**

The first-ever collaborative pilot – involving nearly all banks and operators in the country – began in France back in 2007. Known as Payez Mobile, the pilot team is still actively working

to resolve technical and business interdependencies and business model issues. The current Payez Mobile project members are seven banks (BNP Paribas, Crédit Agricole-LCL, Crédit Mutuel-CIC, La Banque Postale, le Groupe Caisse d'Épargne, Société Générale and le Groupe Banque Populaire) and four mobile operators (Bouygues Télécom, Orange, SFR and NRJ Mobile).

During 2009 the Payez Mobile project has been tested with merchants in Caen and Strasburg, and has published its functional and technical specifications for contactless mobile payment. It has also announced that during spring 2010 the city of Nice will deploy commercial contactless mobile services for a large number of clients and retailers in partnership with the University of Nice Sophia Antipolis, the bus and tram operator Véolia Transport, and mobile operators Orange, Bouygues Telecom and SFR. Caen and Strasburg are already offering NFC capabilities. Some 3,000 Nice residents will use NFC-compliant mobile phones next spring to pay for public transportation and to receive information on routes and timetables. Other NFC-based services are expected to be available at local museums, cultural events and on the campus of the University of Nice Sophia Antipolis.

### **Barclays**

Barclays Bank is a committed promoter of mobile contactless payment and a pioneering player in the UK. This bank, which is a major acquirer in the UK, has now decided to enable contactless payment in all of its cards issued after March 2009, and forecasts that its entire card base will be converted to contactless by the end of 2011.

Barclays previously partnered with O2 for the contactless payments and Oyster trial, but has recently signed a long-term strategic partnership agreement with Orange UK. The companies are seeking to provide financial services to a combined customer base of 28 million people. Barclays forecasts that UK customers will be able to pay using NFC mobile phones within three years (by 2012).

RBS and Barclays are now promoting a contactless POS roll-out in the UK. Together they managed to equip more than 5,000 merchants in only 6 months this year (2009).

### **ING in Romania**

The ING and Mastercard m-payments trial in Romania from November 2008 to July 2009 focused on user experience and value creation testing for consumers and merchants. 316 bank customers used Nokia 6212 handsets incorporating NFC technology, enabling them to make low-value payments by tapping their phones against specially equipped terminals at some 36 merchant locations in Bucharest. Participants were also able to top up their Maestro PayPass account balance over the air to their phone using a special code, and could check their balance over the air. Customers could also download a mobile banking application, and merchants were able to offer mobile vouchers to consumers. Smart posters were used to support marketing services during the pilot.

The Romanian pilot demonstrated that consumers and merchants want fast, easy-to-operate and safe payments. Merchants noticed that mobile payment has a direct impact on their turnover. Mobile payments seem to respond to the needs and lifestyle of clients by providing a modern, trendy, safe and convenient (swift and comfortable) payment solution. Increased usage also improved the success rate of payments during the pilot, and satisfaction at how payment took place increased significantly. 92 per cent of consumers found ING Mobile to be a safe way to pay. Consumers also reported that ING Mobile was very easy to use, although they would appreciate a higher limit for transactions (currently RON 80 / EUR 20). The balance and top-up functionalities increased client satisfaction more than other functionalities.

ING also noticed that building the business case will be easier in Eastern Europe than in the West of the continent. A major element in the business case is expected to be value-added services for merchants, where incremental revenue potential is expected. Merchants seem keen to continue offering mobile payments after the pilot ends, because of their main benefit of securing rapid payment. In spite of the favourable reception enjoyed by ING Mobile, none of

the merchants are willing to pay an additional fee for mobile payment, which may be because card payment fees are already rather high in Romania.

According to ING, the main challenges for commercial implementation are the business model, missing infrastructure and lack of standardisation. Regarding the business model, a common understanding should be established between banks and other stakeholders concerning financial flows in the ecosystem. Regarding the infrastructure, both NFC phones and contactless EMV acceptance need to be in place. Although several standards are available, some adjustments still need to be made, especially with respect to international payment standards.

### **Citi Tap and Pay in Bangalore**

At the end of June 2009 Citibank launched a six-month production scale pilot project in Bangalore, India, for Vodafone Essar Ltd users, employing a Nokia 6212 that enables customers to use the mobile phone as credit card via NFC technology. This is the world's largest pilot project to date testing mobile NFC payments, involving 3,000-5,000 mobile users and around 500 merchants. The phones are offered to customers at a subsidised price: normally costing INR 11,650, the NFC-capable Nokia N 6212 is available to Citibank customers at an inaugural offer price of INR 5,000.

Citibank tested the technology in New York three years ago, followed by another trial in Singapore earlier this year, but has not been able to find a business model to suit it. Citibank cites the Bangalore trial as a "business model trial", including new service offerings such as discount coupons and information download, which they hope will bring incremental revenues. Until these new revenue streams kick in, Citibank will earn revenue from charges for the use of its credit cards, Vodafone will benefit from value-added network services, while Nokia will profit from handset sales. MasterCard will offer its PayPass contactless payment and security infrastructure. After the trial Citibank plans to roll out the technology commercially with multiple mobile service providers supporting handsets from various vendors.

### **DnB NOR and Telenor team up in Norway**

Norway's largest bank, DnB NOR, and largest MNO, Telenor, have teamed up to run the first NFC trial based on commercially available SWP (Single Wire Protocol) products, using the UICC (SIM) as Secure Element. Phase one of the trial was conducted earlier this year with positive results.

Next phase, with a larger number of users and merchants, was planned to start this fall in the city of Oslo, but is now postponed to beginning of 2010 due to delay in delivery of some SWP products. The objective of the trial is to explore user experience and acceptance of NFC payment services. MasterCard PayPass will be used as the payment product and it will be the first trial using MasterCard MOTAPS, mobile provisioning services, for EMV provisioning to a mobile.

### **Stickers used as bridge**

In April 2009 Mastercard and Blaze Mobile launched PayPass mobile stickers, which can be used with a pre-paid account issued by the US-based MetaBank. The sticker can be attached to any phone, and is viewed as a bridge to offering full NFC capabilities. 141,000 merchant locations are currently equipped to accept PayPass contactless transactions. The Sticker technology is expected to increase the comfort level among consumers with converging technologies on mobile devices. The hope of the industry is that by having a payment capability *on* the phone consumers will see the benefit of having a payment capability *in* the phone.

### **SD card-based trials in US**

There have been several trials, mainly in the US, testing SD card-based NFC payments. There are two types of SD-based Secure Elements – some even have NFC functionality built into the SD card. The main benefit in these trials is that existing phones can be used – the only requirement is to have an SD card slot. At Brigham Young University in Idaho over one hundred university students are paying with their phones equipped with SD cards containing an NFC antenna and secure storage for payment credentials. The OnPoint Community Credit

Union in Oregon plans to offer MicroSD-based contactless payment services as a follow-up for their mobile banking services.

### **Charge cards testing the concept**

Wright Express Corporation, a US charge card provider, had a multi-city NFC mobile payment pilot with Sheetz and ViVOtech starting in May 2009. During the trial drivers used a Sheetz Fleet Business Advantage card loaded into their NFC phones to make fuel and convenience store purchases at hundreds of Sheetz locations. Wright Express authorised and processed the transactions.

The next steps in this project are to work on a business model and evaluate how commercial mobile payment services could be offered to customers once NFC phones become widely available and accepted by merchants.

### **Summer 2009 saw banking services in Indian villages**

The State Bank of India launched a payment pilot in Mizoram during summer 2009. The special feature of this pilot is to serve rural people without setting up a branch. Limited banking operations are offered to customers through NFC phones. A “banking executive” appointed by SBI in the village has an NFC phone. People deposit their money with this bank executive, who is a trusted person in the village. Customers have contactless cards, which the banking executive will read with the NFC phone. Customers are authenticated through fingerprint recognition. The banking executive provides the customers with a printed receipt for the transaction.

### **Mobile operator launches credit card jointly with Visa Europe**

Together with Visa Europe and its wholly-owned subsidiary A1 Bank, Mobilkom Austria, the mobile subsidiary of Telekom Austria Group, has launched a credit card including mobile services for the Austrian market. The A1 Visa Card combines the features of a conventional

Visa card with special mobile services such as A1 loyalty points, transaction confirmation by text message for greater security, Paybox (the Austrian mobile cashless payment system), and a mobile insurance package. Based on the new generation of NFC-capable handsets, the A1 Visa card is also intended eventually to function as a contactless payment tool via the mobile phone.

### **Conclusions**

Business model creation really seems to be the main focus area for pilots running this year. There seem to be several different scenarios under trial. Most of the pilots described here are one-to-one pilots, meaning collaboration between one bank and one operator. The business model may still vary: in some cases the bank may have rather extensive control, and even partial ownership of the SIM card. The division of revenues also varies: it seems that banks want to and are keeping the transactional revenues, while operators benefit in terms of a value-added service increase achieved by enabling payments.

It appears that many banks would like to be able to provision their services to the mobile channel more easily than is currently possible. This may be a reason for the interest in Sticker and SD card-based pilots initiated by banks. There also seems to be interest from mobile operators in direct involvement in the payments business.

A collaborative model is used in only one of these pilots. Although in the long term this might become the prevailing business model, it is also the most challenging to implement from day one. Projects testing this concept have suffered from several delays, and business model negotiations have not progressed as rapidly as planned. It seems likely that the market will start with simpler models, gradually developing towards a more collaborative and interoperable model over time.



