Using NFC to boost mobile payment

By Jose M. Huidobro

John owns a pizza shop in the US and when he delivers his homemade pizza to customers, accepting credit cards for payment becomes an issue – as it requires an expensive terminal and every transaction costs him a priced fee. In late 2010, John started using Square, which provided him a matchbook-size credit card reader for free and John can plug the reader into his iPhone and swipe the customers’ credit cards easily with lowered transaction fee.

An increasing number of entrepreneurs and individuals in the US and other part of the worlds are using smartphone card readers for their daily transactions, which gives bigger momentum to the growth of Near-Field Communications (NFC) technology. Recent reports are indicating that Google is intending to include m-commerce support in the planned Nexus S device and future versions of the Android platform. While Apple is also believed to be exploring the technology for the future iPhone evolution, and other smartphone providers are searching into the business potential of NFC.

As a set of short-range wireless technologies, NFC operates in the 13.56MHz band and allows the exchange of information between two devices within a very short range. NFC is based on a wireless solution combined with radio frequency identification (RFID), which consists of a reader and a tag. When the reader is on, it emits a radio signal that triggers a short-range microchip on the label, which allows the reading of a small amount of data that can be stored.

With a mobile equipped with NFC technology, users can easily access services or perform operations on the different functions of the device, without need for physical contact, just by tapping the phone in a reader. The “tap-and-go” technology will allow consumers to pay for newspapers, coffee or sandwiches etc., quickly and easily without having to input their PIN or fumble at the till for change.

Racing to the game

For years, industry leaders have been expecting NFC to turn smartphones into electronic wallets. With cheaper and more accessible NFC chips, a growing number of smartphones are set to be equipped with this technology and they will potentially replace many cash registers and credit cards.

Mobile operators are racing to launch systems for mobile payments using NFC. Orange is applying for an e-money license for NFC payments and also preparing to launch UK’s first mobile payment system. In France, Orange has teamed up with a number of partners for the year-long plan in Nice, where about 3,000 residents can use NFC-enabled phone to use on internal trams and at 1,000 internal retailers.

Deutsche Telekom plans to launch “mobile wallets” based on NFC tech in Europe in 2011. “That’s our opportunity,” says Deutsche Telekom Chief Technology and Innovation Officer Ed Kozel in an interview (source: Bloomberg). According to Kozel, Google’s lack of a billing relationship with its customers and Apple’s preference for proprietary systems may become a hurdle in developing their mobile payment services. Missing the game might mean a big loss. According to IE Market Research, NFC payments have great potential for growth, and are likely to account for a third of the USD1.13 trillion global markets in mobile transactions by 2014.

One possible advantage for operators entering the mobile payment field would be the right timing. “You could argue that it’s the right time for new payment services, as there’s less trust in banks due to the financial crisis,” says Christophe Uzureau, Research Director at Gartner. On the other hand, operators can explore a new market segment with NFC. By becoming the applications portal for the mobile wallet, operators may gain a leading position in the mobile payment game, though they are lagging behind in online apps. Whatever the motivation would be, more players are
entering the game and fighting for a chance to win more.

Vodafone has gained great success on M-PESA, a mobile-phone based money transfer service launched in six developing countries including Kenya and South Africa. In November 2010, China Unicom started the commercial application of its mobile payment service in four Chinese cities. While in the US, AT&T, Verizon and T-Mobile have teamed up to develop ISIS, a mobile phone commerce technology based on NFC communications, which is expected to be rolled out in key areas by mid-2012.

Early practices around the world

In some countries, such as Japan, for years the use of mobile phones to access public transport or to buy in stores has been a reality for years. An NFC chip inside the case allows the transaction and it is only necessary to pass the phone near the reader and go. The system works like a debit card that can be recharged from an application on the mobile phone itself, but is not directly associated with a banking account or operator.

In the United States there are many shops that have opted for new forms of payment via mobile phone. The most innovative is to send money via text messages (Venmo) with no processing fees for individuals – Venmo is 100% free to use, or by swapping the credit card on a mobile device (Square), but there are many others: VeriFone, Mophie, etc.

In Europe some experiences with mobile payment systems have been tested, most of them using short text messages (SMS). But the reality is that very few have passed the test phase. Weak infrastructure and low support from the manufacturers and traders, as well as the lack of support from credit payment institutions (Visa, MasterCard, etc.), which have seen m-commerce as a threat to their credit card business and the substantial fees charged for use, thus hindering its implementation.

Although the use of payment methods via mobiles is marginal – only 2% of mobile users (as of Europe, Middle East and Africa) – the situation, however, could change during next years, thanks to the emergence of new payment systems based on mobile platforms. For example, Square does nothing more than transform the phone in a credit card reader; Visa now has shown interest in entering this business with determination and also PayPal, is positioning itself in the payment via mobiles.

Most of these solutions are either software applications or an update of the traditional systems, such as credit card magnetic stripe, but there are enough clues to suggest that in 2011 the manufacturers will make a serious effort to integrate NFC chips in their phones and strongly support mobile payment. Consequently, we could end up soon with a system similar to Japan, which besides being a wallet could be used for other applications, although some consultants think that the growth of payments through mobile is going to stall until a friendly model environment for end users is created.

A possible barrier to the widespread adoption of the technology could be the many consumers concerns over security, but regarding this, most mobile phone users around the world feel safe while using their mobile devices. For example, buying boarding passes, making small payments or accessing online banking. The reality is that the system is especially safe when used appropriately with the right passwords, even more than using the traditional systems.

Moreover, the so-called “mobile money” is rapidly progressing in Africa. For example, in Kenya, where banks have few branches, M-PESA is an alternative to banks. Most M-PESA customers have no bank account, but they can make payments and send money using their mobile phones. Similar initiatives exist in the Philippines and South Africa, which, together with that in Kenya, are among the most successful pioneer experiences worldwide.

An emerging ecosystem

Though NFC is becoming a hot topic, its eco-system still needs time to become mature. To be commercially viable, the NFC system will require NFC-enabled handsets, point-of-sale terminals, software, security, and transaction processing platforms.

At the Mobile World Congress 2011, 16 operators – including Vodafone, Telefónica, Bharti, China Unicom, Deutsche Telekom, and more – announced their intention to launch commercial NFC services by 2012. GSMA Chairman Franco Bernabe noted that NFC will not only enable mobile payments but also other services and applications like mobile ticketing, mobile couponing, and control access to cars, homes and hotels. In addition, GSMA “will develop the necessary certification and testing standards to ensure global interoperability of NFC services.”

Several manufacturers are developing plans to incorporate NFC technology for the new smartphones, which allow the exchange of data – not in massive amounts as Wi-Fi or Bluetooth do – but is intended for communication between devices with processing capacity. Nokia announced in June 2010 that almost all smartphones will include NFC in 2011. Samsung has been testing phones for some time, the new Google’s Nexus S comes with NFC technology, and it is confirmed that both Apple and RIM are working on bringing NFC to their handsets, while Sony Ericsson, HTC and LG have yet to release NFC-ready handsets promising the technology later in 2011, so it takes time for the technology to become a little more widespread.

Moreover, there are several entities that are beginning to use technology, such as La Caixa, BBVA, Barclays, Bank of America, Citibank and Visa, which are running a series of tests with the NFC system, that will allow to make payments via smartphones without the need for cash or credit cards, and the transaction amount is added to the user’s monthly bill.

The fact that the largest US bank and the largest worldwide payment processing company are carrying out these tests, gives us an idea of the enormous leap that payment with mobile phones is taking.

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