O2 Subscribers Use Phones to Make Purchases, Access Info

Cellular service provider O2 UK is working with British credit card issuer Barclaycard, as well as Nokia, Visa Europe and other partners, in a project to test the O2 Wallet, an application in which consumers use their mobile phones to purchase goods or services, such as transit fares, and access information over an Internet connection. The scheme is powered by Near Field Communication (NFC), an RFID protocol that employs high-frequency (HF) tags and readers to exchange encrypted payment or other data.

The pilot began at the end November and, according to O2, will run until May 2008. All 500 participants, recruited by O2 though an e-mail and phone campaign, are existing O2 subscribers, as well as regular users of the Oyster Card, an RFID-based fare payment card used by more than 10 million British commuters in the city's subway and bus system. Each O2 participant receives £50 ($101) in Oyster funds and £60 ($121) worth of O2 wireless phone service. A subset of 225 participants are also being provided with a prepaid Visa Barclaycard account, installed on the phone and funded with £200 ($403). These participants can use the Barclaycard funds to make purchases of £10 ($20) or less, until the account is depleted, by holding their test phone up to payment terminals at merchant locations that accept Visa's PayWave RFID payments.

Each Nokia test phone contains an NFC module enabling it to communicate with RFID interrogators mounted in transit turnstile gates, as well as point-of-sale terminals at locations that accept Oyster or PayWave payments, because the NFC phone acts just like an RFID payment card when communicating with an RFID reader linked to a payment terminal. Each participant's Oyster account information and,

if applicable, Barclaycard account information is loaded onto the O2 Wallet application running on the Nokia 6131 handset issued for use during the pilot. The account information is transmitted to the phone's O2 Wallet application via an over-the-air provisioning system created by Venyon. Once the data is sent to the O2 Wallet, a data management application made by Giesecke & Devrient encrypts the data so financial transactions are secure and payment data cannot be stolen by a third party.

All participants can also download a VIP pass to the Blueroom, a members-only bar inside The O2, a sports and entertainment arena in London, by holding up their phone to an NFC-enabled smart poster at the club's entrance. The phone's NFC module acts as an interrogator, collecting the URL encoded to the smart poster. The O2 Wallet application then visits that URL and downloads the VIP pass, which participants can show to the bar hosts. Anschutz Entertainment Group (AEG), which is The O2 arena's parent company and operator, developed this portion of the pilot. AEG is interested in learning how it could employ NFC handsets and smart posters as part of its service offerings.
U.K. chipmaker Innovision Research & Technology is providing the RFID tags embedded in the smart posters at The O2 arena, and also distributed five RFID tags embedded in small stickers to each pilot participant. Innovision instructed the participants how to store information on the tags and use them for applications suited to their individual lifestyles.

For example, rather than searching for an NFC-enabled smart poster to download the latest transit arrival information—something being currently tested in the VORTIX trial with Transport for London (see RFID-enabled Phones Help London Commuters Make Connections)—participants can program the tag with the URL of a Web site that provides real-time transport information, then hold their phone up to the sticker (perhaps attached to their desk at work) whenever they want to

know the latest arrival or departure times for their train or bus.

Participants might also program a simple text message to the tag, such as “I’ll be home in 20 minutes,” along with the cell phone number of their child or spouse, then hold their phone up to the sticker while traveling home to transmit the message to the intended recipient. Conversely, children could be instructed to hold their phone up to the stickers placed on, say, the family refrigerator, which would trigger the sending of an “I’m home” message to a parent’s phone.

The RFID inlay embedded in each sticker contains 96 bytes of rewritable memory, which can be locked and unlocked using an NFC phone. The stickers are intended for a single use—that is, to hold a single URL or text message command. “What will be interesting is how the trialists use the tags, and what innovative applications they come up with,” Ken Robertson, manager of Innovision’s contactless tags and ticketing business, said in a prepared statement about the pilot.

Beginning in February, O2 and its partners in the pilot hope to offer participants additional elements and functions to test. According to O2, these may include the ability to enter a personal identification number into the phone in order to make purchases greater than £10 ($20). Participants will be asked to provide feedback on the various capabilities and uses of the test phones, particularly how easy and useful they find the devices to be, and how confident they feel using them. Participants’ comfort level using the phones as a payment device, in terms of the security of the transactions and electronic funds transfer, will also be gauged.