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Identity Cards and Financial Services: How will the introduction of ID cards affect financial services providers

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As readers of the JIBC will be well aware, we are awash with new payment mechanisms (everything from mobile phones using infrared to RFID toktens and from Peppercoin to Simpay in the online world). Attention is becoming more concentrated, however, with RFID (contactless microprocessor smart cards) beginning to dominate mind share. RFID has been used successfully in a range of programmes, including the *Oyster* Transport Card in London, UK, the *Octopus* Card in Hong Kong and the MasterCard PayPass programme in the USA [1]. Note the examples: while the international schemes are all developing their RFID offerings, for many people, RFID isn't really new. One sector has already been using it for retail purchases for some time, and understands the benefits. That sector is mass transit.

The transit operators have already discovered that the drivers for contractless payments are real. Obviously they are quick and convenient: you can't hold people up while boarding a bus. But they are also cost-effective. Transit operators calculate that the annual maintenance costs for magnetic stripe readers more than double those for contactless readers (meaning around $360 per annum for magnetic stripe and $75 for contactless) [2]. With a quick, convenient and cost-effective retail e-payment scheme in place it doesn't take a genius to realise that transit operators have developed an interesting platform. Many people have pointed out that that platform is well placed to take a fraction of the retail e-payments franchise away from banks [3].

This trend has now reached the UK. Transport for London (TfL), which is already planning to remove all cash from buses in London next year, has announced that wants to extend use of the Oyster contactless smart card to retail point-of-sale (POS). Initially it will focus on the 3,000+ retail outlets that sell transit passes, allowing customers to use the contactless smart card to pay for newspapers, sandwiches and chocolate, but is was enough for London's newspaper, The Evening Standard, to run a front page headline announcing "The Death of Cash" [4].

Is this a realistic possibility? It may well be. We know from experience that the banks' first attempts at

cash replacement (in the days of Mondex and VisaCash) failed to gain traction and even the most successful schemes (eg, Proton in Belgium) haven't made much of a dent in cash volumes. For new entrants, it's been difficult to figure out how to get secure hardware (generally a smart card) into consumers' hands. But the transit operators already have millions of cards in consumers' hands. We also know from experience that where a bank-issued cash-replacement card went head-to-head with a transit card, it had no automatic advantage because of the bank heritage.

This was the case in Singapore. The EZ link card, primarily used for transport, is extending into the retail payments space. In comparison, the banks' CashCard has far fewer active users [5]. It looks as if the fact that commuters have the cards in their wallets translates directly into an exploitable leadership position. There doesn't seem to be any evidence that the fact that a card was originally issued for transport applications is any barrier to consumers using it for non-transport applications (just as in the US, where road-tolling transponders have been used for non-toll payments and Speedpass tokens for gasoline purchases have been extended to convenience stores).

Octopus

The standard case study in this field is Octopus. It was originally developed to get cash out of the transit network (there were 25 tonnes of coins being moved per day in the system), but was subsequently extended beyond transit to retail and other services. This has been incredibly successful. The latest usage figures show 10 million Octopus cards in circulation and 8 million Octopus transactions every day (of which 25% are non-transit) [6]. The card is used for small purchases (retail transactions average $2.50 [7]) such as newspapers and coffee.

The transit heritage means that it is fast: in fact, as experiences from other contactless payment systems confirm, it is the speed that makes it attractive to merchants as well as customers. American Express say that transactions using their contactless scheme, ExpressPay, are 53% faster than paying with payment cards with no signature and 63% faster than cash [8]. As the schemes expect for their products, Octopus has proved especially useful in environments where cash is a real hassle: unattended vending. The cards are used in phone booths and vending machines (Octopus-enabling vending machines led immediate sales increases of between half and 90% [9]) as well as for parking and so on [10].

With millions of cards out there (and 150,000 Octopus smart watches!) the scheme soon got over the "chicken and egg" problem that bedevils new electronic payment systems. Therefore Octopus is already accepted by hundreds of merchants [11]. This has not gone unnoticed by banks: since any large city with a transit system is either already converting to contactless smart cards or will inevitably do so in the future, transit schemes present potential entrants to the retail e-payments space with an attractive platform.

Octopus is a pre-paid scheme. Funds can be added to the card at machines in subway stations, at convenience stores such as 7-11 and by automatic top-up from bank accounts. In summary, it's an e-purse and it has begun to function as a genuine cash replacement, so it is not only in retail purchases that it is displacing notes and coins. Anywhere that business is conducted in cash is a potential revenue stream for Octopus. As an example, note that Octopus has 120,000 horse-racing transactions per day [2].

The success of Octopus in the cash space means that somewhere between 1% and 2% of all cash transactions have been displaced by the card. As the CEO of Octopus, Eric Tai, told the Wall Street Journal [12]: "Our business assumption is we're going to compete with cash,"That's a big market, so it's no wonder that Transport for London is looking in the same direction.

E-Cash on the Horizon

The use of contactless mass transit smart cards for payments and other services beyond travel., however, also highlights a strategic direction: the use of RFID and NFC technology at POS. The key

consumer device here is probably not a contactless smart card but the mobile phone. Mobile phones and RFID are just too good a combination to ignore [13]. Now that handsets are sprouting RFID and NFC interfaces they have the ability to replace cards so that consumers can pay with their phones. When combined with the mobile channel's ability to enhance basic ticketing services (one can imagine topping-up a transit card by sending a SMS, for example) the proposition seems pretty straightforward. There is, frankly, no doubt that adding RFID to mobile phones will finally bring m-payments to the mass market and plenty of reasons to suspect that, given a free choice, consumers might well prefer to use their phone rather than any of the cards in their wallet [14].

Mobile phones are already used to provide ticketing services. Japan is in the vanguard, where the integration of local RFID interfaces and remote 2.5G/3G interfaces means that customers can buy tickets using the mobile and then pass through transit gates by waving their handsets. Other transit operators are moving in the same directions and a number of mobile ticketing schemes are operational. There are schemes in Europe. Helsinki city area encompasses 500,000 people who make about 200 million bus, metro and tram journeys every year. Plusdial (an operator-independent service provider) provides a mobile ticketing application. The scheme operates over SMS: someone who wants to get on a bus sees the "service number" on the bus stop (eg, 16353) and sends an SMS with the bus number in it (eg, A641) to the service number. They get back an SMS which says what the ticket is for together with a validity code that can be checked by ticket inspectors. The ticket is charged to the phone bill, although they are looking at a mobile wallet solution [15].

The collision between non-bank contactless payment schemes run by transit operators and the burgeoning technology of RFID and NFC means that real competition is finally coming to the retail e-payments world. Transit schemes have a footprint that new entrants were never able to create in the past and they have a compelling reason for consumers to carry the cards with them every day. If the industry goes one step further, so that transit operators can do away with the card and use customer's mobile phones instead, the long-held dreams of the purse pioneers have some chance of being realised, although not in the way they imagined (ie, without banks).

These and other related issues will be discussed at the 8th annual Digital Money Forum to be held in London on March 16th/17th 2005. See www.digitalmoneyforum.com for further details.

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