

Smart cards: cashing in on an untapped market

Cash accounts for three-quarters of all payments made in the UK. Extrapolate this globally and you get a number in the region of £8 trillion. The rewards for those able to cash in on this sector through the application of smart cards are huge. Although the credit card manufacturers would seem the obvious choice for market leaders, they are losing ground to the more relevant brands, advanced technologies and expediency emerging from the transport sector. Stuart Whitwell analyses this fascinating new sector.



Consumer, retailer and marketer benefits

Convenience is the impetus behind the technological advances driving this sector. And it is convenience driving the trend for multi-application contactless smart cards. Having one card with which to buy a paper, renew your library books and catch a bus has many advantages for the consumer, retailer and marketer.

For consumers, smart cards make purchases a lot easier; you never have to worry about having enough change and because many smart cards are contactless, they often do not even have to leave your wallet. They are more secure than having multiple cards as the one card can replace countless others as well as cash. They speed up purchase times as most cards can be read by the reader application in less than 0.3 seconds from up to 100mm away – this makes payment up to 28% faster than cash and 42% faster than payment cards according to Amex. Smart cards are also durable and reliable; because they generally remain in the wallet and most are made from environmentally friendly, yet strong, polyethylene terephthalate. They can also give consumers the ability to track low-value transactions and provide more available funds for essential incidentals.

There are many advantages for retailers too. Smart cards can be used as loyalty cards for individual or groups of retailers; encouraging repeat and greater value purchases. Faster throughput means more customers can be served; in MasterCard's PayPass trials with McDonald's for instance, contactless payment cut between 12 and 18 seconds off the purchase time in drive through lanes, compared to cash, and according to former McDonald's CEO Jack Greenberg, unit sales increase 1% for every 6 seconds saved in drive-through lanes. Contactless payment also increases impulse buys; PayPass cardholders used their cards 23% more often than during the same period a year earlier and increased dollar purchases by 28%. This increased spending per transaction and an increased frequency of transaction results in increased revenue for the retailer.



Smart cards: cashing in on an untapped market

Marketers benefit too. The real benefit of Tesco's Club card – held by 40% of the UK – is not to the consumer, who gets £1 back in every £100 they spend, but to Tesco. However, the Tesco Clubcard isn't even a smart card but it tells Tesco exactly who, when, where, on what and how, more than 10 million people in the UK spend nearly £26 billion. If it were a smart card, and could be used in transactions outside the Tesco environment, then the possibilities of its usefulness would multiply. Tesco's Clubcard has been pivotal in tripling Tesco's size since the card's launch in 1995, from £10 billion in 1995 to £34 billion in 2004. The implications for retailers could be even more useful with access to data from other retailers. If a smart card was introduced with near ubiquity, it could map the entire purchasing and travel movements of all its users providing invaluable information to marketers.

The players

So who is in the running for a share of this potentially lucrative market? Across the world, from Asia to America, small pockets of independently successful smart card launches are emerging. As yet, none has created homogeneity across more than one territory; the smart card market is still in its infancy. Creating a generic smart card, ubiquitous across different markets, sectors and territories, is the ultimate aim for entrants. This is where the real opportunity lies.

There are two main sectors vying for dominance, with several others also trying to cash in. Credit card manufacturers, such as American Express, and brands which attach themselves to credit cards issued by others, such as MasterCard and Visa, have the international reach, experience, capability and infrastructure in place which, once adapted, stands them in good stead for global dominance. Banks, too, are trying to enter this market, with one notable success in Turkey with Garanti's BonusCard. This works similarly to loyalty cards such as Nectar which, although it operates only in the UK and is not a payment card, could also capitalise on its strong brand and independence to enter this market. Transport, however, is where the real success stories lie. The Octopus Card in Hong Kong has 98% market penetration and is the only real multi-application card in existence. Other transit based cards, such as London's Oyster Card are following a similar model, hoping to replicate and exceed the seminal success of Octopus.

Credit cards

Visa is the largest payment brand in the world. There are over one billion VISA branded cards in circulation which are accepted at more than 20 million merchant locations in more than 150 countries and its global card sales volume exceeds \$3 trillion – it is actively seeking to replicate this dominance in the cash market with smart cards. In 2001, it phased out its failed electronic purse card, Visa Cash, only to return in October 2002 with a pilot called QuickWave in North Carolina with Bank of America employees. Two thousand contactless payment cards were issued and Visa recruited 30 different retailers to participate. Although the pilot ended successfully, with participant consumers and retailers responding positively to the increased convenience, QuickWave has failed to take off.



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MasterCard has also made entries in the smart card sector. Its first foray was with Mondex in the US which, like Visa Cash, was withdrawn in 2001. In January 2003, however, it introduced PayPass which is currently on trial in several geographies including Orlando and Florida in conjunction with Chase, Citibank and MBNA.

MasterCard attaches its brand to cards issued by banks and so largely dependent on relationships with operators such as these for its existence. Sixty retailers signed up to participate in the trials and there were 16,000 card holders. Following the success of the trials, MasterCard expects there to be millions of PayPass cards in the US and claims it will be a global scheme, accepted in all 29 million acceptance locations.

Retailers are enthusiastic about PayPass. The top three categories for contactless micro payments are Petrol (88%), Grocery (77%) and Cinemas (53%) and this is reflected in the retail outlets that have currently been recruited. McDonald's announced plans in August 2004 to extend PayPass acceptance to Dallas and New York with more locations following in 2005.

MasterCard is also experimenting with contactless payment systems beyond smart cards. In 2003, it teamed up with Nokia to enable its phones with PayPass capabilities and in 2004 it teamed up with Motorola to test Near Field Communications (NFC) technologies with the PayPass system. As yet, neither system has achieved mass rollout but headway is certainly being made.

American Express' ExpressPay is another contactless payment system but, rather than using the card format, it uses a key fob. Following trials in Phoenix, American Express has started the first international rollout of the scheme at 168 merchants in Singapore. ExpressPay is also compatible with Visa and MasterCard card holders. However, with Amex launching a law suit against Visa and MasterCard in November 2004 for anti-competitive, cartel-like practices, how long this arrangement will last is questionable.

Despite all the optimism, resource and expectations of the credit card companies, there are just 35,000 users of QuickWave, PayPass and ExpressPay, according to a 2004 report from the Smart Card Alliance. And the real calamity is that none has attempted to exploit the real potential of smart cards beyond a cash replacement model. Visa, MasterCard and American Express have standardised, however, on a single contactless payment technology, ISO/IEC 14443. This brings real benefits for the retailers as card readers can be compatible with any card and it is a strong base from which to move forward.

Loyalty cards

Loyalty cards are in a strong position from which to enter the smart card contactless payment market. A good example of a well positioned loyalty card is Nectar. It is independent, has a strong brand and distinct customer benefits which would transfer effectively into the multi modal micro-payment market. Card holders earn points by shopping at dozens of the UK's largest retailers using their Nectar card. By its first

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Smart cards: cashing in on an untapped market

birthday in August 2003, Nectar had issued 18 million cards. With a third of the UK's population already signed up, Nectar has a considerable chance to capitalise on this opportunity if it is able to apply suitable resource into providing the necessary technology and build on its effective retailer relationships.

Garanti's BonusCard is Europe's largest multi-branded payment/loyalty card programme. Garanti, the Turkish bank, launched the BonusCard in 2000 and now has more than 1,000 merchant partners with 60,000 sale points. Twenty five thousand applications are received every week, trying to join the three million BonusCard holders already active in Turkey. The system operates around giving customers the opportunity to redeem and collect bonuses at the partner retailers. The retailers benefit from increased loyalty and purchases, Garanti benefits by using BonusCard as a differentiator to recruit more customers and the customers benefit by earning bonuses. Garanti now licenses the BonusCard to a competitor bank Denizbank and is also in discussions to bring the brand to Poland, the Czech Republic, South Korea, France and Switzerland.

Transport is the catalyst for multi modal adoption

Despite the efforts of credit cards, banks and loyalty cards, multi application smart cards have really only taken off when born from transport. Growth from transit smart card schemes is expected to be 61% between 2002 and 2007, according to research company Gartner. Moscow, Seoul and a few US cities already have transit-based multi-application smart cards but the real benchmark is Hong Kong's Octopus.

Octopus

Octopus has issued more cards than there are residents, has an average daily transaction value of HK\$54m from eight million users and can be used in more than 226 outlets as payment for all forms of transport, parking meters, photocopying and items in all the retail outlets. In 1994, two major railroad companies, MTR and KCRC, wanted to upgrade their common ticket system to a modern smart card system. They decided to invite the remaining three major public transport operators, KMB, Citybus and the Hong Kong and Yaumatei Ferry, to join their venture. In 1997, they launched the Octopus system.

In 2004, Octopus branded revenue was estimated at £1.5bn with 78% derived from transport. By 2013 revenues are set to exceed £2.6bn with only 50% coming from transport. The first non-transit application for Octopus was at photo booths and payphones in the railway stations. Now, 22% of Octopus' revenue comes from non-transport related services. Shopping payments account for 20% of Octopus' revenue and this is set to increase to 40% by 2013. It is accepted in outlets such as convenience stores and supermarkets, fast food outlets and cake shops, household stores and vending machines, swimming pools and markets.

Another growing use for Octopus is in security. This currently accounts for 2% of revenue but is expected to grow to 10% by 2013. Octopus can also be used as an access card for offices, buildings and apartments and in 2004, it launched the SchoolPlus Scheme. Octopus has teamed up with schools and universities in Hong Kong to allow access and take payment as well as monitor the attendance of pupils – even sending a message to parents of missing students.

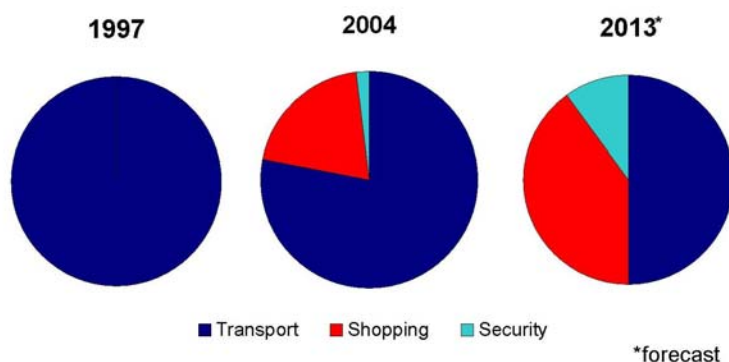
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The major growth will come from these non-transit related sectors. Octopus CEO Eric Tai says its aim is to turn Hong Kong into 'the first ever cashless society' – a bold statement for an economy like Hong Kong where cash is king. With Octopus's ubiquity it is well on its way to achieving this. Also, with consumers dependent on the transport system, there is little chance of new entrants encroaching on Octopus' market.

Octopus card revenue sources



Banks are also under threat from smart cards such as Octopus. Because the average consumer has HK\$65 on their card, banks are losing out on interest of HK\$400million at any one time. And with more retailers signing up every day to Octopus, revenues are set to rise by 60% over the next 10 years. This is a threat that will only increase.

Not content with remaining in Hong Kong, the Octopus technology is being exported abroad by its operating company. In 2003, it won its first contract to help implement a similar smart card system in mainland China. And In November 2003, it secured a \$200m contract to help provide the same in The Netherlands.

Oyster

After spotting the evolution and brand opportunity of Octopus in 2003, TfL, the consortium responsible for London's ticketing system, introduced Oyster at the end of the year. By May 2004, there were 1.4 million regular card users in London. Prior to its launch, TranSys recognised the potential for Oyster outside of transport and said, 'Although Oyster has its core focus on London's public transport services, it has the potential to be extended. The security and flexibility of the technology enables smart card ticketing to serve as a basic platform for other applications. In the longer term other uses for the card are possible, such as parking, leisure centres, libraries etc. TfL and TranSys have been exploring these opportunities.'

Some of these opportunities are already underway. Oyster has already extended its use from transport into libraries in some London boroughs including Croydon, Greenwich and Lewisham. The transition to holding cash on the cards is the next step and this is when the real benefit and rewards will come.



Smart cards: cashing in on an untapped market

Rest of the world

Recognising the benefits of smart card based transport systems is beginning to catch on. In the Seoul Metropolitan Area, Korea, there are 4.5 million transactions a day using payment/transit smart cards from C&C, the smart card technology company. In early 2004, the Moscow Social Card scheme piloted contactless transit cards with credit/debit payment functionality. SmarTrip in Washington DC, US, has introduced 325,000 of its smart cards since its launch in 1999. And in May 2004 it announced plans to partner with a national bank to add a credit/debit facility to the card. Sao Paulo in Brazil is also catching on and has plans to issue 2.5 million smart cards for a generic contactless travel card system for the city.

Conclusion

From an analysis of the different smart card systems already in operation, it is clear that although the credit cards would be, perhaps, the obvious choice, it is only in the transport sector that multi application smart cards have really proven successful. Allowing travellers access to multiple modes of transport on a single card has proved an effective proposition and a successful spring board from which to launch other services such as micro payments and security. The major hindrance to their growth, however, is not signing up retailers – who are convinced of the sales benefits – or convincing consumers as they are sold on the convenience benefit, but installing the card readers in the outlets.

Once suitable investment is given from successful transit-based smart card operators to installing card readers in retail outlets, the market will really start to grow. And when a brand's move to a second city, then a third, then a different country is on the cards, the real benefits for consumer, retailer and marketer will really emerge.

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