



Australian Business Online

Submitted by our Contributing Jo-anne Fisher. Note that the JIBC Editorial Board reserves an unrestricted right to shorten any original document submitted for publication.

Jo-Anne Fisher

Joanne.Fisher@BusEco.monash.edu.au

<http://www-mugc.cc.monash.edu.au/cec/index.html>

Jo-anne Fisher is Executive Director of the Centre for Electronic Commerce at Monash University, Gippsland Campus, Churchill, VIC 3842

The CEC is a national independent consulting, training and research centre for electronic commerce services to assist industry and government, and specifically SMEs (small to medium enterprises).

Enthusiasm in Australia for electronic payments and delivery systems such as EFTPOS (in which Australia leads the world) is fuelling industry thoughts about a cashless generation using chip-card technology. Australia is currently the test bed for the increasingly "cashless" society as four separate stored value smart card scheme trials have been initiated by Australian and international financial institutions, in strategic geographic and demographic areas of the country. These scheme operators include MasterCard, Visa, Quicklink and Transcard. It is also believed that Mondex will introduce their scheme in pilot form within the year.

The smart card of the future is envisaged as going well beyond today's functions of providing access to funds and payment facilities - it may become a true relationship card, a single financial management tool which bonds consumer and bank in a broad relationship.

This article reproduced from Business Review Weekly March 25 1996, and authored by Sandy Plunkett, examines some of the smart card trials underway and their impact within the context of other emerging electronic payment mechanisms.

On, On to the Cashless Economy

A new piece of plastic that is fitted with a tiny computer chip is threatening to do away with cash, and to change forever the relationship between banks and consumers.

Not so long ago, when Australians would drop into their local bank branch at least once a week to deposit pay cheques and draw cash, the bond was strong between branch and customer and few people used the services of more than one bank. Today, the bond has weakened and many bank services have become depersonalised commodities. Consumers now are more likely to pay a bill over the telephone, and to buy petrol or withdraw cash through Eftpos (electronic funds transfer at point of sale) facilities or ATMs (automatic teller machines).

Behind this drift away from branches has been a quiet but far-reaching revolution in electronic-payments technologies. Through ATMs, Eftpos and phone banking services, Australians enjoy an ever increasing convenience around the clock in making purchases, paying bills and managing their finances.

Now as a result of trials initiated by Australian and foreign financial institutions, even more profound change is in store, and Australia is the test bed for the next stage of our increasingly cashless society. A new form of electronic money is imminent, using an integrated-chip card, tagged the "smart card" or "digital cash". This small piece of

plastic, which looks much like a conventional credit card, contains a tiny computer chip as powerful in itself as an early personal computer. Although types of smart card have been around for years, only now, say financial industry leaders, is the switch about to be thrown on a chip-based revolution in payments.

In this era of rapid change in telecommunications and information technology, and increasing "commoditisation", banks are eagerly studying how to acquire and keep customers. In Australia, financial institutions are openly preparing for an environment that will involve far less cash. They are examining new distribution channels that predominantly involve electronic interaction with customers and fewer brick-and-tile branches. Any they are acutely conscious of technologically proficient outsiders (non-banks) moving into the business of moving money.

The smart card of the future is envisaged as going well beyond today's functions of providing access to funds and payment facilities, but it will do even more. The intelligent chip card (also called a stored-value card) is evolving into a device to access the information superhighway. Most institutions argue that, sooner or later, it will become a true "relationship card", a single financial management tool that bonds consumer and bank in a broad relationship. The chip is able to store up "digitised value", effectively cash, and it can initiate, calculate and memorise transactions with banks, merchants and other organisations. Hilton Sack, executive vice president of Visa International Australian and New Zealand, says: "By having the ability to combine numerous products and services on one piece of plastic, this card will become the new symbol of the customer-bank relationship".

Cashless activity already abounds in Australia. The speed with which Australians have adopted electronic-payment technologies has encouraged several local and international institutions to test more-ambitious schemes. Visa International, the four big retail banks and the Credit Union Services Corporation (CUSCAL) are piloting the VisaCash stored-value card trial on the Gold Coast. The stored-value function of the card is designed as a replacement for cash and will be promoted as an alternative method of payment for small transactions such as bus fares, groceries, parking and petrol.

In Canberra's Westfield Mall in Belconnen, MasterCard is about to begin trials of a reloadable smart card that combines credit, debit and stored-value functions. MasterCard, with ANZ, Westpac and Commonwealth banks, is seeking 10,000 cardholders and more than 200 merchants in the next nine months. The VisaCash and MasterCard trials are global firsts for this type of technology on a wide scale.

Trevor Whitworth, MasterCard's vice-president of chipcard operations, says: "Our initial pre-pilot research indicated the demand for stored-value cards was high. Some 76% of respondents said they would use a chip card for a range of smaller (under \$20) transactions and 55% said they would be willing to swap banks to get it."

Others doing smart-card trials include Quicklink in Newcastle, NSW, where 50,000 cards have been distributed to consumers for a small fee. The Quicklink trial enables cardholders to transfer funds from their accounts to their cards through ATMs and other card reading devices. They can use the card to buy goods at several hundred service-provider outlets and on public transport systems. In Sydney, Transcard and Visa are testing 3000 smart cards that also have a magnetic stripe. This is a reloadable stored-value card aimed particularly at the transport sector. At present it is planned to be used in 15 taxis, in 30 private buses and on the public transport system. It also will cover 50 retailers in the "public-transport corridor", including newsagents and food outlets.

Telstra intends to take the cashless revolution even further. In conjunction with its \$4-billion cable rollout to four million homes and businesses by the year 2000, Telstra Multimedia hopes to get the jump on competitors by providing an environment for electronic commerce. It has been canvassing the big retail banks in an effort to establish an electronic payments platform that can be accessed through a variety of devices - the telephone (using interactive voice response technology), modem-equipped PCs and, eventually, through interactive TV. Telstra's electronic-commerce project manager, Rob Kirby, says it is planned to introduce the service in some form later this year or early next.

Although the banks see Telstra as a future competitor, Kirby says it is essential that Telstra co-operates with the banks. "Who owns the customer in this new environment?" he asks. "No one. The best you can do is rent them. But banks have credibility in handling money. It is hard to conceive of a future situation where the banks are not still very much involved."

Dr Vern Harvey of CUSCAL, which counts 26% of Australia's adult population in its membership, agrees. He says: "I think it is a lot harder for a Microsoft or Telstra, for instance, to get into the banking business than it is for a bank to get into electronic commerce, although the planned merger of Microsoft and Intuit (the leading financial software company) made a few hearts in the banking community skip a beat or two."

As a result, Australian banks are preparing themselves for more intensive direct-selling techniques, using customer-information files, new technologies and a wider range of financial-services products to better meet the needs of a more aware customer base.

Although cash is being used less to make payments, the idea of a cashless society must be put into perspective. Visa estimates that only 15% of payments in Australia are made electronically, split evenly between Eftpos and credit or charge cards. That still leaves a huge slice of payments by other than electronic means.

Enthusiasm in Australia for Electronic payment and Delivery systems such as Eftpos (in which Australia leads the world) is fuelling industry thoughts about a cashless generation using chip-card technology. Australians' use of direct-debit arrangements, ATMs, Eftpos and electronic access to credit facilities, and the introduction of home banking services, have presented an enormous challenge to the big banks as they negotiate their way from bricks-and-mortar branches to an electronic and remote-access customer-delivery systems.

Neil Berkett, head of retail banking for St George, says: "There is little doubt that Australians are changing their attitudes towards cash. I think the move to intelligent stored-value cards is a natural progression, but we really have to be very careful about how we handle the timing and mix of electronic-delivery systems and services. There's no doubt that customers love the added convenience and security of these things, but it is a technology-driven trend more than customer-driven."

In the past two years, St George has made a substantial investment in telebanking, says Berkett, and today 95% of customer loans are carried out over the phone. This has coincided with a 20% reduction in the bank's branch network in the past 12 months, he says.

A banking survey last year by Ernst&Young, *Technology in Banking: Managing the Virtual Bank*, predicts that the percentage of transactions expected to be processed through ATMs will grow by about a third by 1997, to 24%; that transactions in branches will fall by 27%, to 44%; that Eftpos transactions will grow by close to 50%, to nearly 21% of all retail transactions; and that home-banking and telephone-service centres will be handling more than 11% of retail transactions.

Tim Holden, publisher of the Ernst&Young survey, says: "With such a fall in branch transactions expected over the next three years, it will be vital for Australian banks to monitor the success or otherwise of alternative-delivery mechanisms and to ensure that their investment is properly balanced to satisfy customer needs."

Half of Australia's credit-card holders have already opted for the convenience of using the same piece of plastic to make credit-card payments and to access their cheque or savings accounts at domestic Eftpos terminals and ATMs. The co-branding phenomenon is also helping fuel the transition of the card from a line of credit to a far broader, multifunction payment mechanism.

With co-branded (loyalty) cards, a company invites a bank to use its customer base to improve customer loyalty and to increase profitability for itself and, perhaps, the card-issuing bank. The National Australia Bank was first to start co-branding when it began its Fly Buys program with Coles, Telstra, Shell and Qantas, Westpac followed with General Motors and the ANZ with Telstra.

As the popularity of electronic transactions has soared, traditional branches have become costly channels for dispensing banking functions. By indulging in discretionary pricing, some banks are encouraging people to use less-costly electronic transaction devices. An American survey has found that a branch transaction costs a bank \$1 over the counter, but only \$0.35 over the telephone and \$0.27 by ATM.

Westpac's general manager for cards, Robert Bishop, says: "The move to electronic and smart-card-delivered

transactions can dramatically reduce a bank's internal cost of handling cash. Research in the US shows that even the biggest retail banks are experiencing significant increases in the cost of handling cash. We could always justify providing chipcard services for customers on the basis of increased security. But it is not enough to cover our investment. The issue was one of cost and the chip itself. Now, those costs have come down to the point where a much closer assessment of demand is worthwhile."

Ernst & Young's Holden also sees a shift in Australia toward higher-tech ATMs that can cash cheques, open accounts, process loan applications and provide other non-banking services. By 1998, at least 8% of ATMs will have the ability to capture the image of cheques and will have full video capabilities. Australian banks are predicting a big rise, from a low base, in the number of customers conducting banking business in the home via PCs or special terminals - perhaps a telephone with a card reader. The continuing rollout of Telstra and Optus cable networks is expected to greatly increase the use of the PC as a service-delivery channel.

Holden sees the success of Eftpos as a catalyst for the recent move towards smart-card services. "But I think a lot of banks are unprepared for how fast future smart-card services will be adopted," he says.

Enthusiasm for electronic-delivery systems varies among bank executives, as do their views on how much progress can be made toward a cashless society - and how quickly. David Kelly, the National Australia Bank's general manager for marketing, distribution and electronic banking, says increased industry co-operation will be crucial. "The biggest problem facing us," he says, "is the potential for new players to enter the game because the technology makes it much easier for them to do that now. There are definitely some very capable organisations (software and telecommunication companies) that are all going to be looking to taking a position down the value chain."

Other institutions have already joined the trend toward a cashless environment. Australia Post, through the Eftpos network infrastructure, was able to join the national banking network last July. The postal authority's 4500 offices, more than half equipped with Eftpos readers, give customers of regional banks access to their accounts across the country.

Telstra Multimedia's Rob Kirby says: "I think there has to be an acceptance by the banks that if there are more players in the game (merchants, retailers, banks, and carriers) then the banks have to accept less." Telstra wants its proposed electronic-payment platform to extend the value chain to incorporate suppliers as well as merchants and customers. It plans to use its huge customer databases to achieve this and to extend the service to include electronic billing (real time) and the inclusion of non-financial transaction services. Customers would be charged on a user-pays basis.

Most finance industry executives say the biggest challenge in the shift to electronic cash and commerce is being able to manage the rapid increase in delivery systems and the number of products directed at a growing number of niche sectors in the community.

CUSCAL's Harvey says: "Essentially, you don't see the end of one service over another, and that's a problem for us. Where before we had one method of servicing the customer (the bank branch), now we have several all at once. Nothing is being killed off totally. There will always be some customers who prefer to deal with the branch and there will be others who prefer to bank through a PC. We have to cater for all of them. This is not about new inventions; this is about new means of distribution. If you have a business model as a financial institution that can't afford to offer these new means of distribution, then you're not going to make it."

St George's Neil Berkett says banks have to learn how to be customer-focused again if they are to reap the benefits of an electronically driven and highly competitive market. "According to our research," he says, "Australian banks rated lowest in a ranking of branch loyalty in the international finance community. A lot of institutions don't realise the implications of this as we move from a closed distribution system to an open one. The new technologies force banks increasingly to be one component on a supermarket shelf. If you haven't got the brand power of a Kellogg's, in the future, when it comes to banking, people will go for the no-frills product. The key issue is how to transport your brand so that it is recognisable to an open platform."

While banks and finance institutions struggle to understand the pros and cons of electronic payments, merchants and customers face pluses and minuses. For consumers, the benefits of cashless-payment technologies and services are,

undoubtedly convenience and security. In the medium term, a chip-based payment system will provide consumers with instant, secure electronic access to their liquid assets, to lines of credit and to a range of financial and non-financial information-based services. New developments will enable the chip to follow its own programs and to organise its own memory independently of any on-line systems network; and it will know where the money has been spent and what it has been spent on. Visa's Hilton Sack says: "With these capabilities, the cardholder can use it as a powerful personal and household budget management tool."

But there are also potential drawbacks, privacy being the big issue. If the cards are adaptable of keeping electronic records of a customer's banking and buying patterns, could a situation arise where every transaction a person makes is recorded? Will the individual be powerless in a dispute with a financial institution over money that exists only as a computer record? And will the convenience and versatility of cash be lost as all transactions come to rely on terminals and passwords?

Visa's Sack and MasterCard's Trevor Whitworth say their pilot schemes are sensitive to privacy and security. Both companies have guaranteed merchants and card holders in the trials that transaction records that would allow them to be linked to a particular card holder will not be kept. In the case of MasterCard, if a card is reported lost or stolen, it will be cancelled and the remaining value restored to the holder. Although comprehensive records of transactions will be kept to allow the value on a lost or stolen card to be reimbursed, MasterCard has guaranteed those records will not be available to anyone other than MasterCard.

Elsewhere, the cashless transaction technology gets ever smarter. In Swindon, England, the Midland and National Westminster banks are testing a system called Mondex. Under this scheme, funds can be loaded onto a smart card that can then be used to make payments. Unusual about Mondex is that funds can continue to circulate in electronic form without any reference to a scheme operator. This means that, as well as being able to use Mondex to pay retailers in the scheme, cardholders will, via a pocket sized electronic wallet, be able to transfer funds to another person's card. Mondex is considered to be the closest example of the electronic simulation of cash.