



RESEARCH NOTE

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Towards the Cashless Society?

Smart cards now & ahead

Imagine paying for your groceries with a small card and then using it to make a phone call, travel home on a bus and later buy something on the Internet. Such dreams of smart card technology evolve from current phonecards, transit far-cards and mobile telephone cards. These systems avoid costly cash handling, but also allow commercial operators to monitor personal monetary transactions. However, our society seems willing to try new types of online systems.

Australians have readily embraced automatic teller machine (ATM) and electronic funds transfer at point-of-sale (EFTPOS) technology to the extent that there are now almost 10 000 such units around the country. Together, these aim to provide universal card access to all banking consumers through networks such as Maestro, Cirrus, VisaPlus and Interlink. New mobile and taxi EFTPOS units further widen

the availability of locations where consumers can pay for goods and services by accessing online electronic bank accounts.

There have been few major problems with this technology, although sometimes system failures, fraud and privacy concerns have arisen. Note that Australia's cash economy has

While smart cards may enable consumers to spend their money without using cash notes and coins, there arise some concerns. Each transaction, as an online electronic event, may enable financial bodies to directly monitor information on individual spending patterns. This becomes a type of automatic data capture, possibly intruding on personal

privacy and liabilities. As well, like cash, cards may be lost or stolen or become unusable in some way, perhaps stranding their user. Smart cards may not accrue interest on held funds. Equally, financial institutions may impose charges on all transactions according to their own whims, plus a possible fee for the card itself. Note that smart card

networks may involve non-bank entities that may not be subject to standard banking regulations either here or elsewhere in the world.

Timeline

Trials of smart cards are already underway in Australia

SMART CARDS

Stored value cards or smart cards are plastic credit-card size units that enable consumers to pay for goods and services with or without involving receipts. Consumers may accrue funds into the cards either through outright card purchase, adding value at an ATM, or by some other online access, perhaps even after the actual transactions. The cards may be disposable or reloadable, anonymous or personalised, according to customer choice. Consumers may use them to purchase goods or services by swiping through a merchant's card reader or by tapping cards with inbuilt radio transmitters onto the reader. Whereas current debit or credit cards contain a magnetic stripe holding around 140 characters of information, smart cards have a microchip capable of storing anywhere from over 16 000 to 100 000 characters of information. This storage may enable consumers to use cards, at a wide variety of locations, for many types of services and may also include personal information such as medical records, voice recognition and credit. Consumers may also obtain a balance record on request.

some \$18 billion in cash transactions, with \$2 billion and rising in electronic movements each year, along with a growing credit card debt of around \$6 billion. However, the development of smart cards suggests a more startling future not far ahead.

and overseas. Mastercard has tested a reloadable combined debit and credit card in Belconnen, Canberra. Visa has similarly trialed a disposable or reloadable smart card on the Gold Coast. In Western Sydney, the reloadable Transcard has involved local merchants and taxis. The reloadable QuickLink pilot has occurred at Newcastle University. American Express is active in tests involving United States and Australia Post. In the United Kingdom, the Mondex smart card trial is underway, with reported links to Australia's big banks: Commonwealth, National, Westpac and ANZ.

Linked to these tests is use of the global Internet for electronic transactions. Internet users may already transmit funds to purchase software, access databases or electronic mail. Firms such as DigiCash, CyberCash or E-cash claim to provide secure electronic transactions using patented encryption technology. This enables transmission of Visa-card, Mastercard, Dinerscard or American Express credit details between users and service providers.

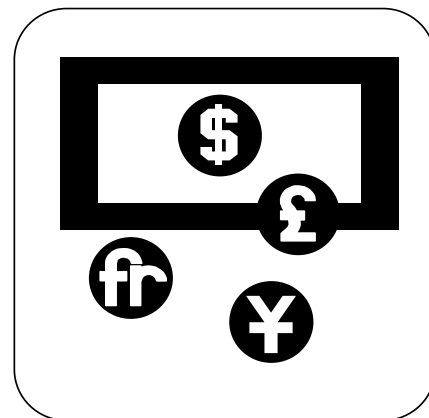
Further Applications

These types of transactions are just a taste of possible things to come and suggest the probable eventual convergence of all consumer financial and information services. With an individual smart card acting as an identification card comes the possibility of online voting, electronic visas, online social security payments, air ticketing, rent payments, parking and toll fee payment, etc. Moves towards all of these activities, except voting, are already underway here. Perhaps one area where electronic transactions may not be welcome involves tipping and the informal economy where taxation is minimal and the black-market rules. So cash may not necessarily disappear from common use.

Smart Card Manufacture

Australian industry is already manufacturing smart cards in it eagerness to serve an anticipated global market of 2 billion cards by the turn of the century. Some 25 companies undertake activities including card design and manufacture, mask development, application and operating software and hardware. However, Australian companies face severe competition from a group of international corporations that produce over ninety per cent of the world's smart cards. It therefore remains important for Australia to establish its own

interests in smart code technology, applications and the wider social implications before overseas commercial interests dictate the global future of financial transactions.



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