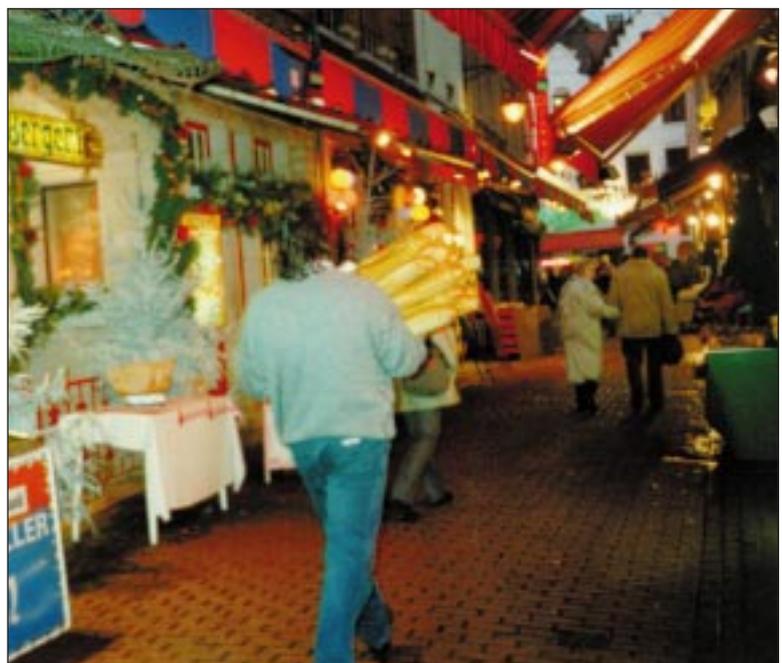# Major Players Form Proton World International

Visa, American Express, ERG and Banksys announced last month that they have become shareholders in the newly created Proton World International (PWI), a company formed by the spin-off of Proton Smart Card technology assets developed by Banksys (SCN February 1998).

The new company will continue the development and licensing of Proton Smart Card applications under Armand Linkens, Managing Director of PWI.

Terms of the investment and shares in the new company were not disclosed as new members are expected to join PWI in the near future. However, it is understood that Banksys has retained a controlling interest with a 51% share holding in the new company.

August 1998

News

Smart Card Tutorial

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Don't Forget!
Our On-Line Website, containing a Library of Smart Cards and information about the full range of SCN services, can be found at the following addresses:
http://www.smartcard.co.uk

On-Line News:
http://news.smartcard.co.uk

Proton World International

Continued from page 141

Some 30 million Proton electronic purse cards are accepted in 200,000 terminals in 15 countries. Australia, Belgium, The Netherlands, Sweden and Switzerland have national roll-outs of Proton. In Belgium alone, more than 2.3 million transactions are performed each month using Proton cards.

What does it mean for the new shareholders?

As SCN reported: "for Banksys to achieve its aim of making Proton a truly global player, it needs to refinance and take on powerful partners." With major card issuers Visa and American Express and industry leader Australian-based ERG onboard, it is on its way to further developing Proton in the international market.

In addition to capital injection in the new company, Banksys will benefit from Visa's support of Java API and the Visa Open Platform in raising Proton's status beyond stored value, while Amex brings with it experience of multi-application Smart Card trials with Continental Airlines, the US Marine Corps and Hilton Hotels.

Visa and American Express seem unlikely bedfellows to become involved with a competing electronic purse technology. This may, in part, be explained by the "if we can't beat them, join them" philosophy. (Visa Members have only issued eight million Visa Cash cards, Visa's stored value product, compared with 30 million Proton cards). Both Visa and Amex should benefit from Banksys' experience in national roll-outs.

The new company, PWI, will support and implement CEPS (the Common Electronic Purse Specifications) developed by Visa, Visa Espana/SERMEPA and ZKA (SCN July 1998) to ensure interoperability of electronic purse schemes worldwide. It also says it will support Java as an application programming interface and plans to use the Visa Open Platform as well as other specifications for Smart Card development. This will improve Visa's position against the MasterCard/Mondex electronic cash, particularly in the controversy over Java versus MULTOS.

The investment in PWI by Visa will further strengthen the card issuer's global ambitions to increase the Visa brand on cards. But it also means that Visa Member banks will be able to add Proton or Visa Cash technology to their Visa debit or credit cards.

Clearly, Visa and other major credit/debit card issuers, would rather see electronic purses as a value-add to their branded bank payment cards, but many national schemes have started with electronic purse schemes using disposable and/or reloadable Smart Cards, leaving the main brand leaders somewhat on the sidelines.

American Express has been a late starter in the Smart Card field and is benefitting from others inventing the wheel. Amex has been involved in several Smart Card projects recently, including multi-function cards, but has no major presence in the marketplace in terms of Smart Card issuance. Joining PWI increases its stature.

Peter Godfrey, President, American Express Europe, said they are committed to helping the industry to achieve Smart Card interoperability, adding: "We are working with a variety of technologies on a non-exclusive basis in this effort. For example, we are licensees of both Proton and the MULTOS Smart Card operating system specification.

"We will be working to implement Proton on MULTOS to further the goal of interoperability." Amex also said it supported Java as an application programming interface.

Perth, Australia-based ERG is a specialist in multi-purpose Smart Card and mass transit systems. It has installed the world's largest contactless Smart Card system (4.5 million cards issued) for public transport in Hong Kong including bus, rail and ferry; and has just publicly launched the Proton-based ECARD Smart Card scheme (see page 146).

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Road Charging Plans in the UK

The UK Government last month unveiled its New Deal for Transport which included plans to tackle congestion by charging for driving into town centres and for workplace parking and the possibility of tolls on trunk roads.

But it produced no co-ordinated national plan for road pricing and instead has passed the buck to local authorities to tackle the problem while the Highways Agency is to be given a key role in managing the trunk road network, "possibly with new income streams from tolling."

Deputy Prime Minister John Prescott said there would be new income streams for local authorities to tackle pollution and congestion by levying charges for driving into town centres and for workplace parking. This will raise funds for local authorities to improve bus services, provide cycle and pedestrian routes and encourage a shift of freight off the roads to rail and ship.

"The car will remain an important symbol of a prosperous, inclusive, mobile society," said Prescott. "But there needs to be a better balance so that people are encouraged to use the car less and public transport more.

"No-one really believes that we can allow traffic growth to go unchecked when projections show that the growth of the motor vehicle is going to be about 30 per cent in 20 years. That means to meet the demand I would have to build a motorway equivalent from London to Leeds with 150 lanes on it. That is bad for our economy; bad for our health; and disastrous for our environment and that is why I believe people are ready to accept our radical approach."

UK road pricing trials

A number of road pricing trials have been carried out in the UK. The first demonstration of congestion metering and road-use pricing technology in the UK was a small trial in Cambridge in October 1993 where roadside microwave beacons were used to activate in-vehicle meters and Smart Cards. Current trials in Leicester and Bristol are testing whether charging will encourage residents to leave their cars at home in favour of public transport, including park-and-ride schemes.

A series of "daughter documents" will be published over the next few months and include: Trunk road policy, Charging Policy - a consultation on implementing road user charging and workplace parking charges.

A New Deal for Transport - Better for everyone: the Government's White Paper on Integrated Transport, is available from the Stationery Office, priced £16.50.

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UK Ministers to Use Smart Cards

Smart Cards will be used to control access to classified data by UK Government Ministers whilst on the move by using their portable personal computers in the Ministerial Red Box system.

Gemplus has been selected by the Cabinet Office and RHEA International to supply the Smart Cards and readers. The GPR400 Smart Card reader is plugged into the Ministerial Red Box (computer) PCMCIA slot and allows the Smart Cards to be used for a variety of applications including security access and data transfer. Each Minister will be issued with a Gemplus MPCOS-3DES microprocessor card, a multi-function payment card operating system with data encryption capability. The card will contain precise security information that, once inserted into the reader, allows access to relevant government data.

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Racal 35,000 Terminals Order

Racal-Transcom is to supply 35,000 Cardmate Smart Card payment processing terminals to NatWest Streamline as UK banks and retailers begin upgrading the country's 530,000 terminals to handle Smart Card technology.

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Electronic Cash at McDonald's

McDonald's Deutschland is introducing a Smart Card payment and value loading system at over 870 of its fast food restaurants throughout Germany.

It is the first Smart Card loading technology deployed in a retail chain store or restaurant in Germany and will be watched closely by the group's competitors and High Street retailers.

Millions of McDonald's customers in Germany can now download money from their bank account onto personal Smart Cards at McDonald's restaurants and use them for many different purchases. For security, customers are required to enter a PIN when loading value onto their cards.

The roll-out follows a pilot program earlier this year at 55 McDonald's restaurants in Germany. During the first 10 weeks of the trial, more than 30,000 transactions were conducted.

Rolf Kreiner, Senior Vice President, Marketing, for McDonald's Deutschland, said: "We plan to expand our leadership position through convenience, superior value and excellent operations. The Smart Card is an accepted means for making payment and speeding service, but consumers had limited access to reloading terminals."

VeriFone is providing its Smart Card electronic payment and loading terminals called TALIS (Transaction Automation Loading and Information System) which have a large, touch-panel and colour display.

"The TALIS terminal offers a convenient and user-friendly means for not only downloading value onto a Smart Card, but also serving as a multimedia marketing kiosk," said Robin Abrams, President and CEO of VeriFone. "McDonald's is setting the pace by leveraging the TALIS terminal''s marketing capabilities, while meeting Smart Card users' need to reload value on their Smart Cards at locations near their homes and workplaces."

During the brief periods that the terminal is connecting to the customer's financial institution, the terminal panel presents marketing messages and, potentially, customer loyalty and incentive program offers. Loyalty value or points can be stored on the Smart Card. The terminal has the capability to communicate via telephone lines, enabling intranet and Internet access for easy, centralised management of marketing messaging and programs.

McDonald's is the largest global fast food retailer with more than 23,500 restaurants in 111 countries on six continents.

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People on the Move

Visa International Asia-Pacific has appointed **Young Chong Kim**, formerly President of Dong Ah Securities Co., as President of Visa International, Korea.

Adam J Liff has joined the board of directors of Smart Card solutions provider and system integrator, Precis Smart Card System Inc., of Oklahoma City.

Gemplus has appointed **Jean-Christophe Lacour** as Marketing Manager Payments for the UK and Ireland. He has been with Gemplus for five years.

Mark McMurtrie has joined Hypercom from VeriFone as Director of Marketing for the Europe, Middle East and Africa region.

Art Kranzley has returned to MasterCard as Senior Vice President for Electronic Commerce from Advanta where he was responsible for strategic business and corporate development.

Hypercom has appointed **Ted Satchell** as Director of Business Development for Europe, Middle East and Africa region. Previously he was founder and Managing Director for Keycorp Europe.

Visa International has appointed **Pekka Honkanen** General Manager, Emerging Products Group covering Central Europe, Middle East and Africa. Finnish born, he previously worked for Okobank.

Philip Eames has been appointed Director of Payment Systems at ICL. Previously he was General Manager for ICL's Media business.

George A Lee is DataCard Corporation's new Vice President of Industry Marketing. Before joining DataCard he was Vice President of Business Development and Product Marketing at MasterCard.

ECARD Launch in Australia

ERG Ltd., one of the new shareholders in Proton World International (see pages 141 and 143), has officially launched the Proton technology into large-scale public use in Western Australia with the ECARD reloadable Smart Card system. The scheme was officially launched at the end of July by the Western Australian Premier, Richard Court.

More than 450,000 cardholders will be able to use ECARD's electronic purse application in over 1,200 retail outlets ranging from convenience stores and coffee shops to chemists and fuel outlets.

The Proton technology has been adapted to suit Australian requirements by Perth based ERG Ltd., which wholly owns ECARD.

The card has the capacity to support a range of additional uses including borrowing books from libraries, providing security access to cardholders' homes or offices and storing emergency contact information.

ECARDs can be reloaded at selected merchants and future transactions could eventually be carried out at ATMs, EFTPOS terminals, via home personal computers, payphones and Smart phones.

Richard Fleming, ECARD's Managing Director, said the opportunity to introduce ECARD into the state came when Western Australia's largest health insurer, HBF, had to replace its outdated membership cards and decided to incorporate Smart Card technology in its new cards for members.

"It is a case of two Western Australian organisations offering benefits to the wider WA community," he said. "ECARD has since worked hard to give the HBF cardholders a strong retailer base through which to use the card."

He said that ECARD's multi-purpose capability provided the potential to introduce further applications from paying for fares on public transport and taxis, to making public telephone calls and using parking meters and he expected the card base to increase to more than 700,000 in Western Australia alone.

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GemGold for China's Banks

Gemplus has launched GemGold ('Jin Hui Ka - Golden Smart Financial Card in Chinese) - a multi-purpose Smart Card incorporating both an electronic deposit and electronic purse for a nationwide electronic payment system for China.

GemGold is based on Peoples Bank of China Integrated Circuit Card Application specifications using Smart Card technology incorporating EMV and ISO 7816 standards.

The GemGold package includes the GemGold Smart Card, a development and evaluation kit, a Security Access Module (SAM) a Key Management System (KMS) and a card personalisation system. It is currently under test with several key banks.

At the same time, Gemplus announced that its investment in China totalled over US $30 million with the setting up of new offices in Guangzhou and Shanghai and the addition of two new lines to its production plant in Tianjin, bringing the joint production capacity of Tianjin and its other factory in Zhuhai to 100 million cards per year.

Gemplus also claims it has over 40 per cent market share in Greater China and is involved in several large-scale programmes in the telecommunications, banking, loyalty and transportation areas.

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ORGA SIM Cards for US Network

ORGA USA, the North American subsidiary of ORGA Kartensysteme GmbH, Germany, is to supply Western Total Communications (as the exclusive provider) with GSM Smart Cards for use in its PCS network to be launched this Autumn. Western Total Communications, is based in Scottsbluff, Nebraska.

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Mexico Pilots SQL Smart Card

Mexican customs officials are monitoring imports in a pilot scheme using a new relational database system for Smart Cards called SQL Smart Card developed by Centura Software Corporation.

Border agents are using the system to process import permits for the North American Free Trade Agreement (NAFTA). The pilot is reported to have substantially reduced paperwork at the border and increased security at crossings.

Eduardo Honey, Project Leader, said controlling the importation of goods required co-ordinating paperwork processed in multiple locations. "Using a paper-based system, it was impossible to track and control the importing of products into Mexico, as there are multiple entry points.

"With our new Smart Card system, we have not only eliminated the problems related to the paperwork process, we have immediate up-to-date information about the status of imports and a more secure process at the border."

All companies authorised to import goods into Mexico are now issued with a Smart Card initialised with the quantity and types of goods authorised for import. Border agents are equipped with Personal Computers and Smart Card readers which can read and display which products are authorised for import. Local information is updated each night to the Department of Commerce's main server, providing a consolidated status of all imports. SQL Smart Card is part of the Centura MicroServer strategy which allows applications embedded with SQL databases to scale down to new hardware platforms, including Windows CE, Palm Pilot and Psion.

Lionel Carrasco, Centura's Vice President of Business Development, explained: "SQL Smart Card facilitates a new generation of Smart Card applications and extends the Smart Card industry beyond the flat file data structure. Developers can read and write to SQL databases on Smart Cards using the same read, write and insert commands used to manage SQL databases on disk-based storage systems via a simple ODBC driver."

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Intellect Joins VISA Smart

Intellect has joined in Visa International's Visa Smart program designed to allow banks to more easily integrate Smart Card technology into their payment offerings.

Visa Smart is a combination of products and services offered by Visa and its partners which enables the planning and implementation of the latest chip-based services.

"With VISA Smart, banks need not reinvent the wheel to capitalise on chip, which is why we have already seen tremendous industry-wide support for it," said Ms Judy Smythe, Visa's Senior Vice President, Chip Products.

Intellect was the first in the industry to deliver true multi-application support for Smart Cards running within a single terminal. This functionality is now critical for all Smart Card solutions as multi-application capability is the cornerstone of what makes a Smart Card attractive to a retailer, a financial institution and a card holder.

Intellect designs and develops secure solutions for electronic payments and networks with products ranging from Smart Card readers, payment systems, electronic wallet and mobile terminals to cryptographic processors.

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Certification for ORGA

German Smart Card manufacturer ORGA Kartensysteme GmbH has been awarded DIN EN 150 9001 certification by DQS, the German association for the certification of management systems.

The certificate covers the development, production and sale of Smart Cards, modules, terminals and systems.

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Smart Card Intranet Security

NDS Americas Inc., a division of NDS Limited headquartered in the UK, is providing public-key Smart Card-based network security technology as part of an end-to-end Intranet electronic commerce catalog pilot program sponsored by CommerceNet and the US Federal Government.

The Interoperable Catalog Pilot, based in Washington DC, aims to reduce the enormous cost and increase efficiency in operating multiple stand-alone catalogs within the Federal Government. Not only is the process costly and time consuming, but it often eliminates participation by smaller vendors who do not have the necessary resources to deal with multiple vendors. Involved in the pilot are the General Services Administration (GSA), National Aeronautics and Space Administration (NASA), Defense Information Services Agency (DISA), the Defense Logistics Agency (DLA) and the Department of the Navy.

The plan is to demonstrate a uniform platform for allowing buyers to gain secure access to a full range of product offerings, stored in electronic catalogs at multiple agencies and vendor sites.

Network security critical

Network security is critical because user access runs across multiple agencies and over public networks. NDS' Smart Card-based technologies use stored digital certificates in conjunction with private and public keys to perform RSA functions, such as authentication, digital signature and encryption / decryption, to protect e-commerce network resources and communications. NDS, a subsidiary of News Corporation, a leading global media company, is a leader in digital video compression and conditional access and provides end-to-end solutions for digital broadcasting.

Abe Peled, NDS CEO, said: "The pilot program is a great opportunity for us to explore security interoperability issues not being addressed by any other standards body or pilot project."

Electronic catalog XML-based interoperability tests have been designed to demonstrate the technical feasibility and the economic benefits that Federal agencies would reap upon mass adoption of the emerging technology. The results of the pilot will be submitted to a special US Congress subcommittee as the working model to be replicated for wide-scale government deployment.

"This pilot will pave the way for government's entry into the digital economy," said Tony Trenkle, Co-chair of the Federal Electronic Commerce Program Office. "With broad, easy access to on-line purchasing catalogs, Federal buyers will find items from a variety of sources on the Internet at competitive prices. Interoperability has the potential to slash procurement cycles and costs."

Ron Parsons, Director, eCommerce Business Strategies and Eastern Region Operations, CommerceNet, commented: "We look forward to developing a consistent growth plan that will provide the basis for secure electronic commerce environments and programs for the future."

CommerceNet is a non-profit industry association for companies promoting and building electronic commerce solutions on the Internet. Members include more than 500 companies and organizations worldwide representing leading banks, telecommunications companies, on-line services, software and service companies with the aim of transforming the Internet into a global electronic marketplace.

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SIM Toolkit from ORGA

ORGA Kartensysteme GmbH has announced the launch of its 2nd generation SIM Application Toolkit. ORGA expects this 16K EEPROM platform to be one of the most efficient and advanced Toolkit offerings on the market today.

"We spent a lot of time on this platform together with our customers in order to find the optimum balance between performance, memory limitations, security, special features and customisation flexibility. We will also be able to easily port to 32K devices when available later this year," said Peter Schnell, ORGA Telecoms Business Development Manager.

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Fujitsu Group Endorse MULTOS

Fujitsu, ICL and Amdahl Corp., core members of the Fujitsu Group of information systems, services and solutions providers, have announced that they are incorporating MULTOS, the multi-application operating system, into their Smart Card solutions. They have also joined MAOSCO, the industry consortium formed in May 1997 to drive the adoption and development of MULTOS.

MULTOS is a high security operating system for Smart Cards that enables card issuers to create a customer specific card, combining a number of applications on a single card. MULTOS is an industry controlled, open standard available on a non-discriminatory, royalty free basis.

The Fujitsu Group will be actively supporting and promoting global market adoption of MULTOS, as well as developing new MULTOS compliant applications and services, and migrating its current Smart Card solutions to MULTOS. This will include ICL's multi-application and cross-industry Smart Card system, "SmartCity," which is installed in 40 locations throughout the world and the "Amdahl Mondex Solution" which is being adopted by clients worldwide to support Mondex implementations.

Nick Habgood, Chief Executive of the MAOSCO consortium said: "We are delighted to welcome the Fujitsu Group, which stands for advanced technology and quality around the world, to the consortium. With Fujitsu on board, alongside fellow member, Hitachi, the consortium's systems solutions expertise is outstanding.

"It is also true to say that the announcement adds weight to the argument that Japanese industry is lining up behind MULTOS."

Yuji Hirose, Fujitsu Board Member said: "We believe that multi-application capabilities hold the key to global growth and acceptance of Smart Card-based solutions. We believe MULTOS offers a combination of high security, low cost and interoperability, and as such, we are committing to it as a global industry standard, as well as migrating our current and future solutions and services to the operating system."

Tim Escudier, Divisional President responsible for ICL's Smart Card Program said: "We already have a strong presence in the Smart Card marketplace and joining the MAOSCO consortium is directly compatible with our strategy and commitment to the introduction of standards to support advanced multi-application environments.

"ICL's Smart City solution is already hugely successful in existing multi-application environments worldwide and we are now building and will be offering a MULTOS-based version, as well as new MULTOS compliant applications, to those customers seeking further openness and interoperability."

Joseph Casola, General Manager of the Amdahl SmartCard Group said: "We are now investing to make our Amdahl Mondex Solution fully MULTOS compliant."

Members of the MAOSCO consortium include: American Express, DNP, Hitachi, Keycorp, MasterCard International and Mondex International, Motorola and Siemens

Mondex International and MasterCard International are committed to MULTOS and collectively represent over 400,000,000 cardholders worldwide.

American Express joined MAOSCO in May 1998 and intends to use MULTOS as a preferred platform for its multi-applications card products. In a press announcement, American Express reaffirmed its commitment to Smart Card interoperability and its intention to implement the Proton electronic cash application onto MULTOS.

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Mondex Approval for Diebold

Diebold, Inc., has announced that its i and ix Series ATMs have received Mondex approval for use in global Mondex electronic cash implementations.

🖥 **Diebold** www.diebold.com

London Transport Gets Smart

TranSys, a consortium of Electronic Data Systems (EDS UK), Cubic Corporation, ICL and W S Atkins, has won a 17-year contract worth £1 billion to develop a new integrated revenue collection service using Smart Card technology for London's buses and Underground.

London Transport's Commercial Director, David Bailey, said: "When the Smart Card technology is introduced on a fully gated Underground network, ticketless travel will be virtually eliminated and we can offer our customers a variety of new ticket products to better suit their needs."

Under the LT Prestige contract:

- New electronic ticket machines will be introduced on 5,800 London buses and these will be upgraded to include Smart Card capability.
- All Underground stations will be equipped with ticket gates and/or card validators
- All ticket office machines will be replaced to allow an additional range of payment methods.
- Upgraded passenger operated ticket machines will offer touch screen and multi-lingual features

Contactless Smart Cards will be introduced within four years to replace the existing magnetic stripe format for the majority of tickets. These will allow passengers to move through the system without removing tickets from their wallets.

The deal was made under the terms of the Government's Private Finance Initiative (PFI) which will see TranSys invest £150 million in modernising the Underground and bus ticketing systems.

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Community Rangers Project

A Smart Card initiative aimed at creating good citizens of the future has been launched at Spenneymoor in the North East of England by UK Prime Minister Tony Blair. Called the Community Rangers scheme, it plans to reward young people for positive contributions to the community.

Sedgefield Borough Council Leader Brian Stephens explained: "Young people are the community's future. We believe this is the first initiative of its kind and we see the Community Rangers as a long-term investment."

Following a pilot at Ferryhill Comprehensive School, the scheme will go Borough-wide from September when 46 other schools join the project involving 12,000 pupils aged five to 18. Each will be issued with a Smart Card to collect reward points for taking part in community projects such as crime prevention schemes, vehicle watch initiatives, drug awareness, junior neighbourhood watch schemes, road safety campaigns and environment projects (for example, cleaning up graffiti).

Points awarded can be used through participating organisations and businesses, for example, a free swim at the local leisure centre or discounts on goods and services.

Gemplus Value-Added Reseller, Smart Card International has developed a flexible Smart Card scheme part-funded by British Gas Home Energy.

Pupils at Ferryhill, who have been using Smart Cards for two years for school meals, can use the same card for the Community Rangers project.

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UK Government Backs Virtual POs

Virtual Post Offices are being set up in five electronic kiosks in Norwich, England, and will enable small businesses using a Post Office Smart Card and on-line computer to register a new company, or the employment of a new member of staff, without having to visit government offices.

The "Open for Business" trial will run for a year, with electronic kiosks and computers in post offices, council offices, libraries and business advice centres. It is part of a government initiative aimed at enabling citizens to transact 25 per cent of their government business electronically by 2002. The Post Office-led consortium was formed to work with the Central Information technology Unit, part of the Cabinet Office, and consists of nine other companies - British Telecom, Bull Information Systems, Compaq Computer Corporation, EDS, Entrust, IBM, Microsoft and Oracle.

Initially the system will offer small businesses:

■ Information about setting up a small business and obligations to local and national Government bodies.

■ Electronic versions of two forms which are then transmitted direct to the relevant Government departments.

■ Further services or help such as "shopping lists" of Departments or bodies to contact.

While the pilot is creating a new way for small businesses to access government services, the scheme architecture is capable of being enhanced with new products and Post Office branded services.

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New Reader from Gemplus

Gemplus has unveiled its new tiny Smart Card reader, the Gemplus GCR420, which connects to the computer's keyboard port, thus freeing the serial port and providing PIN code entry which takes advantage of Smart Card built-in security

The PIN code is entered directly from the keyboard to the reader where it is validated by the Smart Card without any processing by the PC where a breach of security could occur.

A single cable provides both connectivity and power input. The reader either sticks to a PC using an adhesive patch, or has its own retractable stand. The GCR420 is compatible with all major computer makes and operating systems and operates with any ISO 7816 standard Smart Card. A development kit with all software libraries and documentation is available.

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Nortel Announces New Payphone

Nortel (Northern Telecom) has announced the Millennium MultiPay MultiApplication payphone which includes Smart Card interoperability increasing the number of Smart Cards that can be accepted from different issuers at one time.

The new phone also provides for multiple SAM-based (Secure Application Module) electronic purse acceptance schemes and multi-application Smart Cards. Features include a standard data jack providing public access to network services, the Internet or electronic mail.

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Left:
David Clark, MP (left) and John Roberts, Post Office Chief Executive (right) demonstrate "Open For Business" virtual post offices
[The Post Office]

Below Left:
Home banking thanks to the GCR420 reader
[Gemplus]

BoA Offers Internet Loading

Bank of America (BoA) is launching a Smart Card pilot that allows Visa Cash cards to be loaded with funds via the Internet. The program is expected to be rolled out to several hundred BoA and Visa employees this month.

BoA's Smart Card Group is working with Visa and security technology company Spyrus, to develop the Visa Cash Internet-load pilot.

Participating employees will use BoA's Internet HomeBanking service to transfer funds from their account to a Visa Cash chip card which can then be used to make purchases at retail outlets or from Internet merchants who have been taking part in a separate BoA/Visa Smart Card program launched in May 1997.

To load funds, the cardholder will use a secure Internet browser to log into the PC Load system by entering his or her BoA HomeBanking ID and passcode. The user will then insert a Visa Cash card into a portable reader that can be inserted directly into a PC's diskette drive.

Michael DeVico, Executive Vice President of BoA's Interactive Banking division, said the pilot would establish the platform for what one day would become the ultimate convenience - a personal, home ATM that can be easily accessed with PC or through other emerging delivery channels, such as interactive television.

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Siemens to Close UK Plant

Siemens, Germany's largest electronics group, is to close its £1.1 billion semiconductor plant in North Tyneside, UK, with the loss of 1,100 jobs.

The current downturn in the semiconductor industry is blamed for the closure announcement. Siemens and the UK government are working together to find a buyer or joint venture partner to save the plant.

The plant was officially opened by Her Majesty the Queen only last May (see SCN June 1997).

Driver's Licenses Projects

Gemplus is supplying two million Smart Cards for large driver's license projects in Argentina and El Salvador through its partner Talsud SA, a systems integrator in the identification market.

The new driver's license projects will be rolled out at the beginning of the third quarter of 1998 and continue over the next two years. The projects will enable the governments involved to keep more accurate and current records of traffic violations and also help to prevent license counterfeiting.

Gemplus is supplying its GemClub Smart Card which is re-programmable and makes it possible to create and delete files, update data and add new information from remote terminals.

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Oberthur / TECSEC Joint Venture

Oberthur Smart Cards USA has entered into a co-operative agreement with TECSEC, Inc., of Vienna, Virginia, specialists in cryptography, key management and Smart Card-based solutions. TECSEC will provide its Constructive Key Management (CKM) software for Smart Cards manufactured by Oberthur.

CKM provides a cryptographic, role-based, access control mechanism that can be applied to facilities, equipment and information.

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ADE Patents for Sale

ADE (Angewandte Digital Elektronik GmbH) of Germany, is offering 14 of its patents to the international market as it now concentrates its activity on some main patents. The offer includes patents for card readers and for specific electronic circuits or for phone cards. The list can be obtained from ADE on Fax: +49 4105 971099.

Hilton Introduces Electronic Locks

New York City's largest hotel, The Hilton New York & Towers, is installing new electronic locks on each of its 2,041 guestroom doors by the end of September, and will be the first hotel in the US to link a SmartLock system with both SmartKeys and multi-function Smart Cards.

The system, developed by CISA of Italy, recognises information stored on a microchip in the hotel's SmartKeys or a guest's multi-function Smart Card.

"According to CISA, SmartKeys issued by the hotel are nearly impossible to duplicate, and the technology allows us to maintain a unique record of anyone who enters a room," said Thomas G Daly, Vice President-Loss Prevention for Hilton Hotels. "But we are most excited for our guests who already possess a multi-function Smart Card that will be presented upon check-in for encoding to be used as their guestroom key."

Currently more than 6,000 travellers are holders of credit and/or affinity Smart Cards that can be utilised at the Hilton New York & Towers. These cards include: the American Express Corporate Card, Hilton Optima Card and Hilton HHonors Worldwide Diamond VIP member cards.

Pascal Metivier, Executive Vice President of CISA Security System Inc., said: "Our Dual 2-Squared technology allows use of different types of Smart Cards including both memory and microprocessor cards."

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ESTEEM Loyalty Program Preview

JAC International has previewed a Smart Card-based loyalty programme, ESTEEM, to over 200 executives in the food and entertainment industries in Singapore. Involved in the project are Gemplus, Datagrams Asia and Inputronics.

The card used is based on Gemplus' GemClub, a microprocessor card that uses an operating system optimised for loyalty applications, allowing multi-

partner, multi-applications and flexible marketing programs. The chip in the card provides merchants with a history of the customer's transactions or the frequency of visits, enabling them to target specific groups, for example, young professionals to promote the latest entertainment, or families for a Mothers' Day promotion.

The ESTEEM system incorporates a bonus point system where points may be accumulated through repeat spending, frequency of visits or ad-hoc promotions.

The Silver ESTEEM Smart Card costs S$99 and entitles holders to discounts of 15-20% while the Gold ESTEEM card is priced at S$149 and earns discounts of at least 20%

There is no joining fees for merchants and over 30 retail outlets are participating, including the Fantasy Island water theme park in Setosa Island, Singapore. JAC International, a local company, says it is targeting 300 member establishments and 5,000 cardholders by the end of this year.

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Schlumberger's Mexican Plant

Schlumberger's new Smart Card production plant and personalisation facility will be inaugurated in Mexico City this month and start formal operation, said Eric Claudel, General Manager, Mexico and Central America for Schlumberger Test & Transactions.

The completion of the new facility was part of their overall expansion plan designed to complement last year's construction of the first Smart Card production facility in Latin America, he explained.

Schlumberger Mexico will be ready to locally produce and personalise a total monthly output of five million magnetic stripe cards, five million Smart Cards and 30 million cheques for the banking sector where they already have 18 banks among their customers.

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Savings Role for Supermarkets?

Supermarket chains in the UK, through the adoption of new card technology, could become the major force in the new £35 billion market for individual savings accounts (ISAs), according to Logica, the international computer consultancy, systems integration and software company.

Jerry Norton, Business Development Director in Logica Finance Division, says: "It is clear that the major driver for the predicted 8.75 million new savers in these schemes will be the ability to gain instant access to their accounts whenever and wherever they want. We believe that supermarkets will play a major role in providing that access, particularly through the adoption of new card technology such as Smart Cards." Currently, customers can have cash back from supermarkets, but Logica foresees that customers will also be able to withdraw from and pay in cash to their ISAs at a supermarket checkout.

Although existing swipe cards could be used for this activity, Logica said it believes that Smart Cards will be the technology of choice for the supermarkets because they allow greater security and the ability to combine ISAs with other accounts such as loyalty schemes on a single card. The Smart Card can also be used to store up-to-date ISA account information which customers will be able to view and print out using inexpensive hardware in supermarkets, banks and even in the home.

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IBM Unveils New Microchip

IBM has announced a breakthrough in microchip technology which it claims will boost the operating speed of chips by 30 per cent and cut the power required to about one-third of current levels The technology will enable the creation of entirely new classes of portable devices, the company said, speeding the introduction of hand held personal computers capable of linking to the Internet and allow mobile phones to become even more compact and operate longer.

IBM said it had developed a technique for producing silicon on insulator (SOI), which greatly reduces the power silicon chips require to operate (this involves inserting a layer of insulation underneath a chip's micro-circuits to reduce its capacitance - the electrical charge to power the circuits). The company said it hoped to have the first chips in manufacture within a year.

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Chip Manufacturing Breakthrough

New burn-in testing of integrated circuits at the wafer level has been announced by Motorola Semiconductor Products Sector, Tokyo Electron Limited (TEL) and W L Gore and Associates Inc.

The new technology is expected to cut manufacturing costs by as much as 15 per cent and improve manufacturing cycle time by up to 25 per cent. Motorola expects to begin using the new technology in 1999. Developed under a joint programme, the new burn-in testing uses TEL wafer-prober technology in a controlled environment and allows each chip on a silicon wafer to be electrically stressed across a range of temperatures from 125C to 150C.

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US Smart Card Growth

Despite slow growth and low take-up, Smart Card usage in the US is expected to skyrocket as the US becomes the fastest growing market in the world, says a new report from Datamonitor. The company estimates the number of US Smart Cards to grow at an annual rate of 107% between 1997 and 2002. The report, US Plastic Cards 1998, also predicts that by the year 2002, debit cards will account for 20% of total card payment volume.

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MegaChip Launch in Costa Rica

Banco Credito Agricola Cargago of Costa Rica has started a Smart Card stored value card pilot called MegaChip. The multi-function card contains an electronic purse and acts as an electronic savings passbook which contains loan accounts, enables bill payment, electronic cash withdrawal and transfer of funds between accounts and other cards, recording transactions and working in real time.

Loyalty points can be stored on the card by retailers and the bank and ordering catalogue gifts earned can also be performed using the card. The system was designed and implemented by Intellect, EFTPOS Engineering, Gemplus and Card Services International. Intellect supplied its Multi-Pay terminals, for which EFTPOS Engineering provided the software and systems integration support. The terminals, which are attached to a PC, are being deployed in bank branches, retail outlets and other locations.

Cardholders can reload value onto their cards wherever there are on-line facilities, such as bank teller terminals, retailer EFTPOS terminals or self-service terminals. A reload facility at home is anticipated to be offered to consumers later this year. John Atkinson, General Manager of Gemplus Australasia, said: "The project shows the true advantage of Smart Cards - a whole range of applications stored on one card removing the need to carry a wallet full of plastic."

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Proton Performs Euro Payment

Proton World International (PWI) announced that existing Proton cards have successfully converted national currency into Euro payments. Armand Linkens, Managing Director of PWI, used his Proton card to make a payment in BEF which was then converted on-line into Euro at an ATM , he then made a payment in Euro at a Proton terminal which displayed the transaction in both Euro and BEF.

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Single Sign-On from IBM

IBM has announced the availability of a new version of software that eliminates the need for users of multiple systems to sign-on to each one individually by providing secure access to all authorised systems through a single sign-on.

Announcing Global Sign-On Version 2, IBM says its new features include the Tivoli Plus Module and Smart Card support and fingerprint authentication.

IBM claims the new version can reduce the time required to log into applications from 20 or more minutes to only a few moments. It provides a single point of entry to computing resources and reduces the security exposure generated by managing multiple passwords.

Phyllis Byrne, Vice President of IBM Distributed Systems Services, said: "Strengthening and streamlining enterprise security is essential to becoming an e-business. With about 70% of typical help desk traffic being related to password and/or log-on problems, IBM GSO is expected to reduce those calls by 50%." The system uses industry standard interfaces to support Smart Cards, including the IBM SignCard and Schlumberger Cryptoflex card from Litronic, Inc.

"Passwords are a major cause of frustration, security exposures and lost productivity," said Ron Smith, President and CEO of Biometric Access Corporation, whose SecureTouch combined with IBM's GSO allows automatic access to authorised applications with one touch of the user's finger

- **Further information on Global Sign-On version 2.0 is available on IBM Web site**
  ⌨ www.software.ibm.com/enetwork/globalsignon

Mondex Type Approval for Intellect

Intellect has announced that it has received Type Approval from Mondex International for its 8550 Purse Retailer terminal. Certification enables Intellect to manufacture and market the terminal for use in Mondex electronic cash schemes around the world.

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Smart Cards Yes! - But Has Their Introduction Been So Smart? Part 2

A Special Article by Prof. Worthington

Mondex - Hong Kong

The Hong Kong and Shanghai Banking Corporation [HSBC] was one of the founders of Mondex International in 1996 and originally it held the franchise to exploit the Mondex product in 13 countries in Asia-Pacific, where HSBC had strategic interests. Subsequent negotiations with MasterCard International resulted in that card association buying 51% of the interest in those territories, leaving HSBC with 49%. The resultant organisation, Mondex Asia is licensed to sell Mondex in the following countries, China, Indonesia, Malaya, Taiwan, Brunei, Singapore, Hong Kong, Macao, India, Philippines, Thailand, Sarawak and Mauritius.

HSBC had been using their franchise in Hong Kong to 'soft' launch Mondex, during the period October 1996 to August 1997 and then with their fellow Mondex member, the Hang Seng Bank, they have subsequently instigated the first full-scale Mondex roll-out in the world. This commenced in November 1997 using the new Mondex branding of interlocking blue and yellow circles, with cards being issued by both HSBC and Hang Seng. By the end of January 1998, over 110,000 cards had been issued and recruitment was still so strong that there had been difficulties in meeting the demands for cards and balance readers. Given the current demand, the expectation is that cards in issue will reach over 280,000 by the end of 1998. Cardholders were charged an annual fee of HK$100 and the 7,000 merchant acceptors were charged between 0.35 and 0.6 per cent of the value of the transaction, although they received their terminals without charge. There were over 600 ATMs where cardholders could reload their Mondex cards and the average reload value was HK$360, whilst the average transaction value was HK$55. There is no charge for reloading the card with value, but there is a limit of HK$3,000 that can be loaded onto the card. The only criteria used for issuance of a Mondex card, is that the applicant must have an account with the issuing bank.

Hong Kong would seem an ideal location for a stored value Smart Card such as Mondex. Cash is still the dominant payment medium, with an estimated 90% of all transactions conducted in cash and yet there are frequent coin shortages, particularly as some of the mass transit fares require exact coinage, paid in small denominations. The people of Hong Kong are also known as early adopters of new technology. Yet despite this welcoming environment there are still lessons to be learnt from the introduction of Mondex. Evidence of relatively low activation of cards was apparent even during the 'soft' launch of Mondex, but this was attributed to the restricted opportunities to use the card, then only accepted in two designated shopping centres. However even post roll-out and with a wider merchant base, there are still problems with activation i.e. getting cardholders to load value onto their cards and if activation rates are not improved, there may well be problems with attrition once cardholders are asked to renew their annual fees. Part of the problem is that the task of merchant recruitment for Mondex was given to the merchant acquirer side of each of the issuing banks. These quite naturally turned to their existing merchant relationships based on credit and to some extent debit card acceptance and persuaded those merchants to accept Mondex. The result is an inappropriate merchant base for the Mondex proposition, with too many relatively high average value transaction merchants and too few low average value merchants. For example in the Mondex Shop List issued with the Mondex card, there are 118 Fashion shops listed, compared to 44 Food and Restaurant outlets. Mondex transactions at an average value of HK$55, are surely more likely in food, than in fashion. Other categories included in the Mondex Shop List include, Shoes and Leather Goods [34 entries], Watch and Jewellery [11 entries] and Household [49 entries], whilst notably absent are vending or mass transit applications. This points up the danger of handing the merchant recruitment for stored value Smart Cards to the existing merchant acquirer teams at the issuing institutions. New payment card opportunities based on low value frequent payments, may require dedicated merchant recruiters to secure acceptance of those merchants who are currently cash - only and who thus have no existing merchant acquirer relationship.

Another issue yet to be fully addressed by the stored value Smart Card issuers and one that will affect the changes of success for such payment cards,

is whether they see such a card as yet another product or as a delivery mechanism for a range of products. Those who adopt the paradigm of 'its just another card product', will have a mind-set on criteria for cardholders and merchant acceptors, that parallels their existing views on credit and/or debit cards. On the other hand, those who see the Smart Card as a delivery mechanism for a number of their [and others] products, will have a mind-set that can place the card, alongside existing distribution channels such as the branch, ATM or telephone and build an implementation strategy and business case, based more on the upside that the Smart Card offers to build brands and relationships, rather than purely on the downside containment of fraud.

The planned introduction of Mondex in Australia during 1998 may offer evidence of alternative roll-out implementation strategies. The four major Australian banks who own the Mondex franchise for Australia are head-quartered, two in Sydney, two in Melbourne, and therefore it is likely that the Mondex launch will occur simultaneously in these two major markets. However, rather than trying to flood the market with Mondex cards on general release or recruit merchants across the entire city, the four franchise holders are talking of the 'corporate campus' approach to the launch. Here a number of corporate office buildings are chosen for a 'closed' Mondex launch, with the card offering security access, as well as payment functionality for cafeterias and vending machines. As familiarity, confidence and usage grows, the acceptance points will be slowly rolled-out to include merchants in the immediate locality, such as newsagents, coffee shops and fast food restaurants. In this way the corporate campus will act as a 'hub' of activity, and usage will develop along spokes from the hub, eventually reaching other 'spokes' and hubs. Such an approach, whilst eminently suitable for the Australian market, may well be applicable elsewhere in the Mondex world.

Octopus - Hong Kong

Returning to Hong Kong, there is an example of a successful introduction of a stored value Smart Card, the Octopus card, used in a mass transit application. The Octopus card is a contactless Smart Card used primarily on the Mass Transit Railway [MTR] system of Hong Kong. By February 1998, 3.8 million Octopus cards had been issued, against a

HK$50 deposit, which is refundable if the card if returned. The cards are personalised by a number, which resides in the chip and four different cards are available in four different colours for adult, senior citizen, child and student segments. Such was the success of the card that by February, the adult version had sold out and leaflets in the MTR stations were advising potential customers that new batches of Octopus cards would arrive in April 1998. Creative Star Limited, the holding company for the different transport providers and system suppliers involved in Octopus, state that their target sales for the card are 6 million, roughly one per Hong Kong resident, a figure which if achieved would give them the ultimate in 'critical mass'.

The card is currently only reloadable by inserting dollar notes into a terminal at the MTR station, which then adds the required value to the card, although opportunities are being sought for cardholders to be able to reload Octopus from their credit or debit cards and/or to sign up for a direct debit which would automatically recharge their card, as the value embedded in it reached zero. The card is passed over a reader at the start of the journey, and an audible click is heard to acknowledge this and then the card is passed over a similar reader at the end of journey, again with an audible click. The card is then decremented of value, according to the distance that has been travelled. Some 4 million transactions per day are currently being recorded using the Octopus card, with the card also being accepted in HKY ferries and in photo booths in MTR stations. The card holds an audit trail of the last 10 transactions [including reloads] and to allow leeway in cardholder calculations of remaining value, Octopus allows a small negative balance to be carried on the card, to facilitate completion of all journeys.

The interesting aspects of Octopus from the point of view of the introduction of stored value Smart Cards, are that its success in achieving critical mass has been based upon its concentration on the 'killer application' of mass transit. Compared to both Mondex and Visa Cash, with their emphasis on multi-application, at least in terms of the merchant acceptor base, Octopus has limited functionality [at the moment!], but obviously appeals to cardholders and to the transit service suppliers. Could it be that one of the critical factors for success in the introduction of stored value Smart Cards, is to focus

on one core competence application [transport, telecoms, health provision], achieve a critical mass of cardholders by demonstrating the power of the Smart Card to improve their lives and then where relevant add applications to the existing card and widen its functionality and utility.

Octopus could take that path, for one of the members of the Creative Star team is AES Prodata, itself owned by ERG Ltd., a transit fare collection system provider. ERG owns the Australian licence for Proton and recently in a joint venture with Banksys, won the tender to develop a Smart Card for the Malaysian government. Using the proven Proton technology and with a critical mass of cardholders already in place, it would be possible to add a contact electronic purse, to the contactless Octopus transit card and thereby deliver a 'combi' card with a committed cardholder base. The mass issuance and usage of stored value Smart Cards, is essential if this type of card is to avoid the 'Chicken and Egg' conundrum that has previously inhibited the rapid uptake of credit and debit cards. Here merchants will not accept the card because not enough consumers carry it, whilst consumers will not carry the card because not enough merchants accept it. A successful introduction of a Smart Card based on a 'killer application', can make the 'Chicken and Egg' into a virtuous, rather than a vicious circle, with more cardholders, leading to more merchants and so on.

Cash Card - Singapore

Another way of achieving critical mass in the introduction of a stored value Smart Card, is by government edict. Here the government decides that a smart card will be used in health, transport or welfare payments applications and is able to drive the implementation, resulting in a critical mass of cards in usage, to which can then be added other functions. The Singaporean government acknowledges that in a country with no national resources, other than its 3 million people, Singapore has no alternative but to rely on technology as its source of competitive advantage. Their most ambitious project is ONE [One Network for Everyone], which will deliver a high level of interactive, multi-media applications and services to every home, school and office. The network will include entertainment on demand, government services, on-line shopping, home banking, ticketing

and other electronic commerce applications. By the end of 1998, all 800,000 households in Singapore will be able to connect to ONE, although from April 1998 Singapore will already have an electronic road pricing system, which deducts tolls automatically from Smart Cards located on the dashboard of all cars in the country. These same Smart Cards, called Cash Card, will also be used to make payments for services accessed through ONE.

The Cash Card is supported by the Network of Electronic Transfers [NETS], established in 1985 to provide a common infrastructure for debit card transactions, shared ATMs and Cash Card. The success of NETS is demonstrated in *Table 1* and it now involves the seven major banks in Singapore.

Year	Value [$million]	Volume [Million]
1987	140	4
1990	520	8
1993	1,400	24
1995	2,100	34
1997	3,400	51

Source : NETS

Table 1 : The Growth of NETS Transactions

Cash Card is an anonymous stored value Smart Card, reloadable with up to $500 in value through the ATM network, supported by NETS. Originally piloted in 1994 with 60,000 cards issued to university students and customers of workplace canteens, the Cash Card was eventually rolled out nationally in November 1996. There are approximately 800,000 Cash Cards currently in issue with a projected total of 1.5 million by the end of 1998. The cards can be used in the same terminals as those that accept debit card payments under NETS, some 7,000 of which are located throughout Singapore. The cards can only be reloaded from a current or saving account, via the ATM and not from a credit card or by using cash. The balance of value on the card is displayed on the ATM screen and/or printed on a paper receipt and transfers of value are only allowed onto the Cash Card, for which the cardholder pays a small fee.

Whilst Cash Card has been a success in terms of the number of cards issued it has yet to become a success in terms of usage, mainly because it has been piggy-backed onto the existing POS terminal network which already accepts all debit cards. The electronic road pricing introduced on April 1st 1998, uses the Cash Card as means of payment and the government, which has promoted the road tolling, is hoping that by forcing the use of Cash Card, this will be the killer application that enables the card to achieve a critical mass in terms of usage. One danger of this approach is that the cardholder will just leave the Cash Card in the reader installed in the car and to overcome this NETS are examining both usage incentive programmes and widening the acceptance to new sectors such as the corner "Mom and Pop" stores and vending machines.

Whatever the means, it is obvious that the Cash Card is central to the "Singapore Vision", of using technology quicker and more comprehensively than any other country in the world. With such guaranteed government support, there is no doubt the Cash Card will eventually "fly" as a stored value Smart Card and that other competing cards such as Mondex, Proton and Visa Cash will be effectively denied entry into Singapore. The same "directed" approach to the introduction of the road tolling via the Cash Card, may well see its functionality increased to payphones and to mass transit, in the latter case possibly as a combi card, allowing contactless access to the Mass Rail Transit [MRT] system in Singapore.

To be continued next month...

Professor Steve Worthington
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Falcon Card at US Air Force Base

The first multi-application EMV (Europay/ MasterCard/Visa) compatible Smart Card to carry independently loaded applications, is being used by personnel at the US Air Force Academy in Colorado Springs.

Called the Falcon Card, it contains an electronic purse for cadets to use around the campus instead of carrying cash.

The system was developed by North American Smart Card solutions company 3-G International Inc. (3GI) and Smart Card software developer and solution provider, Product Technologies Inc. (PTi) and includes PTi's SmartCity electronic purse platform and 3GI's multiple application Smart Card platform.

"The aim of the scheme is to enable the Air Force Academy to continue to add non-financial applications, such as medical and dental, to the card, while ensuring the security of the SmartCity EMV compliant platform," said Thomas L Gregg, President of 3GI.

"The system was also designed to allow the Falcon Card to be independent yet interoperable with the US Department of Defense Smart Cards."

PTi's President, Bill Mangino, described the Falcon card as "a significant industry milestone because it combines applications developed by independent companies on the same EMV-compatible Smart Card."

Other organisations involved in the implementation of the scheme included Intermed Corporation, Debitek and the 34th Support Group's Air Force Automated Identification Technology (AIT) office at the Academy.

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Canada Debates Card Duality

The proposed merger of the Royal Bank of Canada and the Bank of Montreal is causing Canadian regulators to focus on the question of duality of card issuance and of keeping a competitive balance in the financial services marketplace.

Canada does not allow banks to issue both Visa and MasterCard credit cards, but Bank of Montreal is the largest MasterCard issuer in the country and Royal Bank is a Visa issuer.

The merger could almost eliminate MasterCard's presence in Canada. Meanwhile MasterCard is making the case that a one-card industry in Canada would be bad for the consumer.

At the same time, Bank of Montreal is pressing ahead with its plans to launch Mondex (MasterCard-owned) electronic cash for its consumer and merchant customer base. It will use Amdahl Corporation's Mondex solution of hardware and application software.

Ron McKerlie, Vice President, Smart Cards at the bank, said: "Bank of Montreal will be a leading participant in the Mondex offering."

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