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SMART CARD NEWS



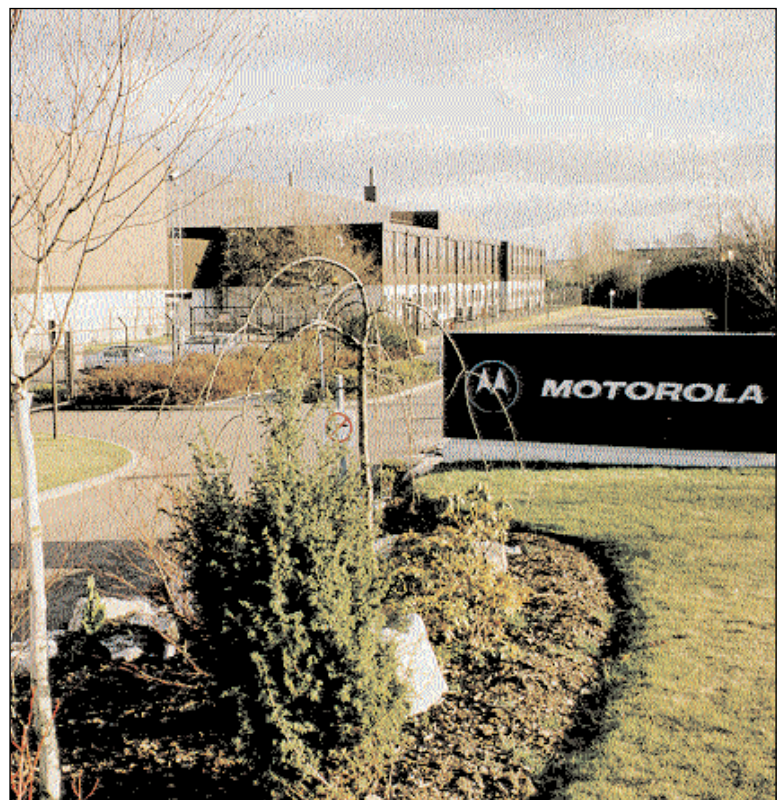
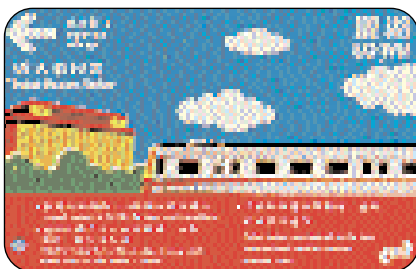
Visa Spain to Pilot New Travel/Cash Card

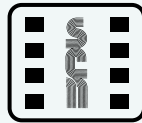
Motorola's single-chip contactless microcontroller will be piloted by Visa Spain and the Madrid Transport consortium. Developed by Motorola's Semiconductor Products Sector, the commuter card will act as a combined travel pass and electronic purse and can be read both by insertion into card readers and in a contactless mode via sensors at ticket barriers.



Trials will start towards the end of this year with the reloadable Smart Card which is seen as a replacement for existing throw-away paper tickets.

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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 address:
<http://www.smartcard.co.uk>

Important Announcement
Due to office reorganisation the SCN telephone numbers have been updated. You can now contact us on a new number:
+44 (0) 1273 236677,
as well as
+44 (0) 1273 626677.

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Smart Card Tutorial
Integrated Circuit Card Standards and Specifications - Part 12: Electronic Payment Systems

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Visa Spain Travel/Cash Card

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Visa Spain, which is developing the system's software, will issue the card to the public through its member banks. Users will be able to load value on to the card's electronic purse at Smart Card cash machines. The commuter cards will be automatically decremented at ticket terminals with contactless card readers as travellers enter the transport system. Commuters will also be able to use the electronic purse to pay for goods and services.

Enrique Ruiz, General Manager, Motorola Semiconductor Products Sector, Spain, said the card clearly offered significant benefits for commuters and transport operators.

"We are the first manufacturer to have introduced a single microcontroller chip which offers the levels of security necessary for financial and transport transactions on a single card used in both contact and contactless environments," he said.

"Motorola believes that this type of commuter-cash card will prove to be one of the compelling applications of Smart Cards which will drive the explosive growth of this global market."

The Motorola card offers 4K bytes EEPROM, 20K bytes ROM and 256 bytes RAM.

Visa Espana pioneering Smart Cards

Visa Espana has been pioneering the development of Smart Cards through its member banks. In another application of their Smart Card they have been issuing Visa Cash electronic purses.

According to Enrique Rodriguez-Bonachera, Deputy General Manager, Visa ESPAÑA-SERMEPA: "Currently Spain is the country with the highest degree of development of plastic banking cards in the world. Visa Cash has up to 1.8 million electronic purse cards which can be used in 26 provinces and have been launched by 33 financial institutions. Visa Cash can be used in 57,000 ATMs and 45,000 public phones and can be recharged at 6,200 ATMs."

Contact: Kathleen Reid, Motorola - Tel: +44 (0)135 565447.

L&G Chip Card Payphone Order

Landis & Gyr Communications is to supply Lithuania Telecom with CHF 28 million worth of chip card payphones and cards through its local partner, Katra Ltd over a four-year period.

It involves the supply of several thousand Pulsar chip card payphones equipped with the Phoenix security module which locally authenticates third generation chip cards. The payphones will be linked to five REMAS remote maintenance centres which will manage day-to-day payphone operations.

ODS R Oldenbourg DatenSysteme GmbH, a Landis & Gyr company, will supply "several million of the latest generation Eurochip chip cards."

Contact: Adolf Deyhle, Landis & Gyr Communications - Tel: +41 22 749 3510. Fax: +41 22 733 5219.

Bull Strengthens Market Position

Bull Personal Transaction Systems, the Smart Cards and terminals division of Groupe Bull, reports a 1997 first half increase in sales of 100 per cent over the same period in 1996.

The Division says it is reaping the benefits of early entry into the electronic purse sector with over 27 million of its cash cards (CC60-CC80-CC1000) sold throughout the world and a leading position in the health area with a 40 per cent share of cards to be supplied for the first stage of the French Sesame-Vitale health project (a total of 15 million cards).

With its EFT terminals, Bull reports increasing its market share in Latin America and expects to deliver 30,000 units before the end of the year.

Bull has terminated its share holding relationship with François Charles Oberthur from a card manufacturing point of view although it will continue to sub-contract a large part of its manufacturing to the Vitré FCO factory. This move, says Bull, will enable it to diversify its sources of supply and to further develop its manufacturing strategy with current and future partners.

Contact: Dominique Mercier-Chevalier, Bull CP8 - Tel: +33 (0)1 39 66 45 20. Fax: +33 (0)1 39 66 44 02

ORGA Gains Visa Approval

ORGA, USA announced that Visa has now approved the company's production site for the embedding of chip modules placing the company in a position to supply Smart Cards for banking applications. ORGA will now be seeking Visa approval of the entire production process, including personalisation and embossing.

Gerald Smith, ORGA's US Business Unit Manager for Banking and Retail, said: "Receiving Visa certification is an important achievement for our company as we develop and roll-out new Smart Card applications to meet the needs of this growing customer base."

ORGA Card Systems Inc is the North American subsidiary of ORGA Kartensysteme GmbH, of Paderborn, Germany.

Contact: Gerald Smith, ORGA Card Systems Inc USA - Tel: +1 610 993 9810. E-Mail: 70752.200@compuserve.com • Christian Charlton, ORGA Kartensysteme GmbH, Germany - Tel: +49 5254 991-263. Fax: +49 5254 991-222. Web site: www.orga.com.

Smart Card Growth

A report from the Global Smart Card Advisory Service predicts 2.3 billion Smart Cards in worldwide circulation by the Year 2000.

The report, *Smart Cards Across Industries: Vital Statistics*, offers GSCAS members a strategic analysis and breakdown of the Smart Card industry into the next century.

The report also outlines Smart Card use by industry and breaks down current and future card technology spending, which is forecast to reach US \$1.9 billion for new cards alone by the end of 1997.

Founded in May 1997, GSCAS is a co-operative venture of The Tower Group and The Centum Consultancy, a VeriFone enterprise.

Contacts: Web site: <http://www.gscas.com>. Josh Wendroff, Copithorne & Bellows (for the Centum Consultancy - VeriFone) - Tel: +1 415 975 2226. E-mail: josh.wendroff@cbpr.com. • Rob Carpentier, The Tower Group - Tel: +1 617 965 9090.

CSI US \$3 million Investment

Smart Card software company, Card Services International (CSI), has announced the completion of a US \$3 million investment package to support the on-going development and worldwide marketing of its multi-function Smart Card management system, CardBASE2000.

Providing the financial backing are French-based Smart Card manufacturer Gemplus (US \$675,000); Irish business development agency Forbairt (US \$750,000), the Irish Trade Board (US \$450,000), private investors (US \$375,000) and ICC Venture Capital (US \$750,000).

A CSI core product, CardBASE2000 enables major financial, telecommunications and retail organisations to offer a wide range of multi-function Smart Card products to their customers on a single card. These products include electronic purse, loyalty schemes and bill payment as well as traditional credit and debit card products.

Aonghus Geraghty, Managing Director of Dublin, Ireland-based CSI, said: "The forecast growth in the application of Smart Cards is enormous. Each card issuer needs a sophisticated software solution to effectively manage the multi-functionality of these new Smart Card schemes."

Commenting on the investment, he added: "Our objective was to combine, into a meaningful financial package, the available government support, for developing business via Forbairt and the Irish Trade Board, with efficient private and management investment, and international corporate support through our existing relationship with Gemplus."

Marc Lassus, Gemplus Chief Executive, explained; "For Gemplus the importance of having good software solution providers is vital to our continued success. Gemplus has been working with CSI for some years now and the supply of Gemplus Smart Cards and CSI application software to the largest airline in the world, British Airways, is an example of how both companies are working well together."

Contact: Sarah Flynn, International Marketing Executive, Card Services International - Tel: +353 1 284 3233. Fax: +353 1 284 3220. Web site: <http://www.csi.ie>

Mondex Australia Roll-out in 1998

Mondex Australia, comprising the four largest banks - ANZ, Commonwealth Bank, National Australia Bank and Westpac Banking Corporation - plan to introduce Mondex electronic cash throughout Australia in the second half of 1998.

Don Gregg, Chief Executive of Mondex Australia, commented: "Next year's roll-out will provide real benefits for consumers, merchants and businesses on a national scale." He added that they anticipated issuing around eight million Mondex cards over the next five years.

Meanwhile, more than 200 staff at Westpac Banking Corporation will take part in the in-house trial of Mondex in the suburb of Epping, Sydney. Staff will be able to make person-to-person and customer-to-merchant transactions for small value purchases using their cards which can be reloaded using Mondex compatible telephones.

Contact: *Gerry Hopkinson, Mondex International, London - Tel: +44 (0)171 557 5016. Web site: www.mondex.com*

Amex / ERG Alliance in Australia

American Express and ERG Limited of Australia have formed an alliance for the future development of multi-purpose Smart Cards.

The agreement will enable Amex to issue cards, including the Banksys Proton electronic purse technology, and to utilise what will become the Proton network in Australia and New Zealand. In Australia, the Proton electronic purse system is operated by QuickLink Card Systems, a subsidiary of ERG.

American Express is moving towards the launch of a full suite of Smart Card applications in Australia, including those currently in pilot overseas, such as electronic tickets, loyalty and hotel check-in. A launch date for the first of these schemes in Australia is expected soon.

In the United States, Amex has several schemes in pilot stage. They are piloting a multi-function Smart Card in the US hotel industry with Hilton Hotels and IBM for check-in and check-out. Also with IBM, Amex is piloting a Smart Card on American

Airlines to enable travellers to check-in and receive their boarding pass at gate readers installed at 21 US airports.

In another project, called Smart Ship, Amex and the US Navy tested an electronic purse Smart Card on board the cruiser USS Yorktown.

Contact: *Suzie York, American Express Company - Tel: +1 612 9271 2070. Sarah Manners, ERG Ltd - Tel: +61 8 9273 1204. Yuri Tolmatchov, Banksys (developers of Proton) - Tel: +32 2 727 6666.*

DialLine Chip Phone from Ascom

Ascom Monétel of France has unveiled its DialLine chip card-operated telephone designed for public service buildings and businesses offering a basic telephone service.

Operated with prepaid chip cards, DialLine can be installed in a variety of places such as shops, hotels, restaurants, holiday centres, hospitals, etc. It provides the user with a range of practical functions - time display, number dialled and remaining credit on the card plus user help based on pictograms, preprogrammed numbers, call follow-on.

Payments are guaranteed by a card authentication module and communications are secured by a line tapping protection system.

Contact: *Ms Claude Garoyan, Communication Manager, Ascom Monétel - Tel: +33 (0)4 75 81 41 14. Fax: +33 (0)4 75 81 41 00.*

Park'N Shop Accept Visa Cash

Major retailer, Park'N Shop, is now accepting the Visa Cash stored value card at more than 170 of its supermarkets in Hong Kong.

With the added participation of Park'N Shop, Bank of China Group will enhance their development and promotion of Visa Cash, both in disposable Prime Visa cash cards and in reloadable form as an added feature on their proprietary Smart BOC Card - seen as a step towards the multi-function card combining stored value with credit or debit.

Contact: *Jeff Perlman, Visa International Asia-Pacific - Tel: +65 437 5513. Fax: +65 437 5567.*

Proton to have Loyalty Function

Banksys, Belgium, and High Co Technologies, France, have entered into an agreement to integrate High Co's XLS loyalty system onto Banksys's multi-function Proton Smart Card platform.

The move will provide large scale customer loyalty programs while at the same time it can be used in simple, single retailer environments.

Guy Alloin, Managing Director of Banksys, commented: "Building critical mass is about offering the consumer multiple benefits on one piece of plastic. In addition to retail outlets, vending machines, payphones and electronic ticketing, loyalty is a natural function to add."

High Co Technologies supplies software systems that allow Smart Cards to carry loyalty points, electronic coupons, gift certificates, tickets and other information.

Aneace Haddad, President of High Co Technologies, said: "Loyalty provides distinct, unquestionable value to merchants, encouraging them to prefer loyalty enabled payment cards over others."

"In our opinion, this is a key to triggering the massive roll-out of Smart Cards."

High Co holds international patents covering the method in which electronic coupons are stored and processed through Smart Cards, via a Web site or directly at the supermarket check-out. Other patents cover the instant advantaged acquisition mechanism using on-card customer behaviour patterns and terminal scenario definitions, using RFM (recency, frequency, monetary value) direct marketing method.

This particular innovation allows merchants to, for example, give one bonus point on the customer's first visit of the month, three bonus points at the second visit, and five points at the third visit of each and every month. This is done off-line, instantly, through a bank payment terminal.

Contacts: *Youri Tolmatchov, Communication Manager, Banksys - Tel: +32 2 727 6666. Fax: +32 2 727 2727. E-mail: tolmatchov@banksys.be*
Marjorie Banès, High Co Technologies - Tel: +33 (0)4 42 24 58 24.

Visa Cash Arrives in the UK

The first British Visa cards have been issued to staff at Visa International in the run up to the public launch of the card in Leeds later this year.

The cards will be used by over 600 employees in staff cafeterias in both London and Basingstoke.

Colin Grannell, senior vice president at Visa International, described the cards as "a landmark event in the lead up to the Leeds programme".

There are currently Visa Cash schemes underway in 10 countries around the world including Argentina, Australia, Brazil, Canada, Columbia, Germany, Hong Kong, Italy, Spain and the USA. Plans for schemes in New York City, Taiwan, Japan and Mexico have also been announced.

Contact: *Ian Gatherum / Colin Baptie, Visa International. Tel: +44 (0) 171 937 8111.*

Omron Card Readers



Omron has launched an ultra compact card reader for reading and writing Smart Cards. It measures 74mm x 61mm x 124mm and weighs only 200g.

The SHS card reader will accept all ISO 7816 (T=0 and T=1) ICC cards. An RS232 interface provides direct connection to a PC or other host terminal.

Omron has also extended its range to offer a standalone hybrid card reader designed for reading and writing both magnetic stripe and Smart Cards. Weighing in at 300g, the reader measures 88mm x 81mm x 157mm.

Contact: *Guy Boxall, Omron Europe BV - Tel: +44 (0)181 450 4646. Fax: +44 (0)181 450 8087.*

Right:
Compact desktop
Smart Card reader
[Omron]

MULTOS Application Licences

MAOSCO, the consortium of eight leading companies in the SmartCard industry, has announced the availability of application licences for MULTOS - the new high security multi-application operating system for Smart Cards.

MULTOS enables card issuers to create "lifestyle cards" bringing together a number of separate business services, tailored to the requirements of an individual customer, on a single Smart Card, for example, a retailer loyalty program with an electronic ticketing product and a credit, debit or electronic cash product.

Nick Habgood, recently-appointed Chief Executive of MAOSCO, said: "The open availability and low cost of the MULTOS application licence means that any company or individual can develop and market MULTOS applications. This will create an open, competitive and innovative market which will drive the widespread acceptance of MULTOS and Smart Cards." He added: "Today's card issuers want to be able to select and combine services from a range of industries and issue them on a single card. MULTOS provides the flexibility to meet this demand whilst providing the security and control."

Test cards will be available to application developers in Q4 1997 with MULTOS cards commercially available from DNP and Hitachi in Q1 of 1998.

Initial members of the consortium include DNP, Gemplus, Siemens, Keycorp, Motorola, Hitachi, MasterCard International and Mondex International.

Application licenses can be obtained via: Web site: <http://www.multos.com>. Tel: +44 (0)171 557 5423. Fax: +44 (0)171 557 5422. MAOSCO Ltd, 47-53 Cannon Street, London, EC4M 5SQ, UK.

Contact: Customer Services Manager, MAOSCO.
E-mail: Simon.Phillips@MULTOS.com

Philips RSA Chip for Visa Card

Philips Semiconductors P83C858 cryptocontroller chip is to be used in a new Visa International merchant card to be trialed in the UK and Japan later this year. The trials are described as the first high-volume use of RSA public key cryptography in a financial

application. Up to 15,000 cards are expected to be used in the UK trial and several hundred in Japan.

The cards will be used by merchants to access terminals which accept Visa Cash stored value cards. The cards are designed to securely authenticate a merchant's confidential financial information, including bank balances, digital IDs and other information. In addition, the card will be used to configure, validate and protect reader terminals that can accept and authenticate Visa Cash cards.

RSA's public key cryptography enables mutually authenticated, high security payment transactions to be processed off-line.

Jim Bidzos, President of RSA Data Security Inc., a wholly owned subsidiary of Security Dynamics Technologies Inc., said: "We are pleased that RSA encryption is playing a key role in enabling applications that require privacy for protecting sensitive financial and personal data.

"For applications of Smart Cards that involve one's own money, there is no such thing as too much security," he said, adding that Philips' arithmetic cryptoprocessor supporting RSA, provided performance that makes using the card fast and easy.

The Philips P83C858 chip is a Smart Card cryptocontroller offering 8K bytes of EEPROM and 20K bytes of ROM. The chip also contains the FAME (Fast Accelerator for Modular Exponentiation) arithmetic cryptocontroller coprocessor which is claimed to provide the highest execution speed of any Smart Card IC in production today. It supports multiple public key algorithms including RSA used in the Visa merchant card.

Irv Wentzien, Senior Vice President, Visa International, said: "We wanted exceptional security and functionality, plus high performance and memory sizes. We are confident that the trials using this advanced chip will help us conduct secure cash transfers and chart the way forward."

Contacts: Peter Stevens, Philips Semiconductors - Tel: +31 40 272 2091. Fax: +31 40 272 4825. E-mail: Peter.Stevens@ehv.sc.philips.com • Roseanne Clavelli, Visa Corporate Relations - Tel: +1 415 432 3439. Fax: +1 415 432 3856. E-mail: clavelli@visa.com

Mobile Cashpoint Machines

Cellnet, the UK mobile phone network and Mondex International have announced the signing of an agreement to jointly develop solutions to allow electronic cash to be transferred via digital mobile phones.

Cellnet intends to enable customers to use mobile phones to withdraw and deposit cash to their bank account using their Smart Card. It will also be possible to transfer cash to other mobile phones by simply making a call. Current technology allows electronic cash to be sent via fixed line telephones, or to and from the bank of another Mondex cardholder.

The new solutions will use the international digital standard GSM (Global System for Mobile Communications). This will allow electronic cash transactions to be made across the world using the mobile phone.

Michael Keegan, CEO, Mondex International said, "in effect, we have just turned the mobile phone into a personal cash machine which can operate anywhere, anytime through the extensive GSM network". Cellnet customers can currently make digital calls in 69 countries around the world, a figure set to rise to 80 by the end of the year.

Contact: Cellnet Press Office: +44 (0) 1753 565656.
Mondex Press Office: +44 (0) 171 557 5036.

Japan to Stage Card Show in 1999

The first annual card-exclusive exhibition and conference in Japan will be held in Tokyo from 14-16 April 1999. Called the Secure Card & Commerce Tokyo '99 (SCC '99), it is being organised by The Japan Industrial Journal, a daily newspaper and leading exhibition and conference organiser.

The advance announcement says SCC '99 is designed to tap into the growing interest of the Japanese market in card products and services and exhibitors will consist of leading international and Japanese companies interested in accessing the Japanese market.

According to the Japan Industrial Journal, information about ongoing test projects in Japan related to factory applications, satellite entertainment media access and the transportation industries will be of interest in the global marketplace.

It also promises a full conference programme exploring the latest global plastic card trends, and covering card technologies, applications and electronic commerce.

The exhibition will be co-organised by Tokyo-based ExpoMax International.

For information about SCC '99, contact Lori Miller - Tel: +1 609 799 3422.

Telewest E-commerce project

Telewest Communications has appointed UK-based IT management consultancy Hyperion Systems to advise on developing sophisticated interactive electronic commerce services across different technology platforms, including cable television, the Internet and Smart Cards.

Telewest's Director of New Media, Julien St. John-Dennis, explained: "We have recognised that mass-market electronic commerce depends on the TV and not the PC. With the move towards digital and interactive services, cable communications providers can deliver electronic commerce to the home in a consumer-friendly package. We have asked Hyperion to help us develop our business opportunities in this area."

David Birch, Director of Hyperion, said: "Electronic commerce is not solely about Personal Computers and the World Wide Web. The use of cable, mobile and other communications media to provide a platform for both information and transactions is far more important in the consumer market."

The project will analyse how the different technology platforms and applications relate to a variety of target groups in the consumer marketplace.

Contact: David Birch, Hyperion - Tel: +44 (0) 1483 301793. Fax: +44 (0) 1483 61657. E-mail: daveb@hyperion.co.uk

MobilSmart Launched in Sweden



A new remote banking application, called MobilSmart, has been launched by Sweden's Postgirot Bank.

The application enables customers to carry out banking transactions using their GSM mobile phones. They can pay electricity and telephone bills via the use of SMS (short message service), transfer money from one account to another secured by the SIM (Subscriber Identity Module) Smart Card in the handset which ensures the security of the over-the-air transaction by computing an electronic signature that is sent to Postgirot.

The project has been developed by Postgirot Bank, Telia (the first Swedish GSM operator) and Gemplus which adapted Phase 2+ features in its GemXplore SIM card to meet the requirements of Postgirot. Alcatel and Ericsson new generation handsets have been selected for the MobilSmart application.

Contact: Robert Leonardi, Postgirot Bank - Tel: +46 8 781 5148. E-mail: mobilsmart@postgirot.se

Gemplus Supports Microsoft Kit

Gemplus Corporation, the North American subsidiary of Gemplus, has announced that its full line of Smart Cards and readers will support the Microsoft Smart Card Software Development Kit that is based on the PC/SC Workgroup standards

The Workgroup includes Bull CP8, Hewlett-Packard, IBM, Microsoft, Schlumberger, Siemens-Nixdorf, Sun, Toshiba and VeriFone.

It was set up to develop interoperability standards and to facilitate the development of PC-based Smart Card applications.

Contact: Lisa Colley, Gemplus - Tel: +44 (0)1705 488037. Fax: +44 (0)1705 492934. E-mail: Lisa.Colley@ccmail.edt.fr

Visa Roskart Card for Russia

Visa International and Inkombank, one of Russia's largest banks, are to launch a new chip card, Visa Roskart, in St. Petersburg, Russia later this year.

The card allows consumers to carry a pre-authorized amount of funds from their bank accounts (with the money staying at the bank) in the Smart Card chip. When making a purchase, the cardholder places the card in a card reader terminal and keys in his or her PIN. The merchant also inserts a merchant chip card in the terminal and the transaction information is transferred automatically to the merchant's card.

At the end of the day the merchant can either download the transaction information to the bank or take the card to his bank for credit to his account. Visa settles individual transactions back to the consumer's bank where the purchase cost is deducted from the cardholder's account.

The card, therefore offers security against overspending and fraud.

According to Anne L Cobb, President of Visa Central and Eastern Europe, Middle East and Africa (CEMEA): "The pre-authorized functions will become a standard feature of the multi-functional chip cards of the future. Such a card will literally put a bank in the consumer's pocket with the chip carrying the customer's credit line, funds from deposit accounts, even shopping coupons, frequent flyer mileage and personal medical history.

"The consumer will actually design the card with the bank to meet his or her personal financial and information needs."

Visa plans to start testing prototypes of the multi-function chip card around the world.

Contact: Ryan Mikolasik, Visa International - Tel: +1 650 432 5769. E-mail: mikolasvisa.com

Left:
MobilSmart, a new remote
banking application
[Postgirot Bank]

Hong Kong Mass Transit

Right:
Hong Kong Bus Ticketing
Fare Collection: Contactless
Smart Card reader and
driver console



Below Right:
Contactless Smart
Card Reader
[ERG Ltd]

Creative Star, the joint venture company representing the major transit operators in Hong Kong, launched a multi-modal transport fare collection system on 1 September with the name of Octopus. Over half a million cards have already been issued out of a proposed total of 3.5 million with card sales continuing daily.

Described as the most advanced transport fare collection system in the world, it utilises contactless Smart Cards which can be used as a ticket across all modes of transport and can be expanded into other applications such as parking and public payphones.

Initially the system will operate in the network of the MTRC (Mass Transit Railway Corporation, Kowloon-Canton Railway Corporation (KCRC), Kowloon Motor Bus, CityBus and Hong Kong Yaumati Ferry.

A spokesman for Creative Star said that the system is intended to be expanded into other transit operations and be extended to cover more service routes throughout Hong Kong so that ultimately passengers can use the same card on all forms of public transport.

The new system, supplied and designed by ERG Limited, of Australia, features six different integrated systems, one for each service provider and consists of some 5,000 reading units. Each station and ferry terminal has its own Local Area Network (LAN) which connects all barriers, validators, add-value machines, analysers and office processors to a station operator's central computer.

A Wide Area Network connects all operators' computers to the Creative Star central clearing house which apportions revenues to the operators and deposits funds into the appropriate banks.

The contactless cards can be read at a distance of up to 10 cms at high speed. This should make journeys quicker and more convenient using one common system and one card. Most cards carry an initial value of HK \$100 but can be reloaded throughout the rail transport operator networks.

Overall it is estimated that the system will handle 800 million passenger journeys per annum.

Passengers using the Octopus card said they particularly appreciated the contactless feature of the card, allowing it to be used without withdrawal from their wallet or purse.

Creative Star is investing HK \$400 million to integrate Hong Kong's complex, high-volume transport network which handles 800 million passenger journeys per annum.



Contact: Sarah Manners, Manager Corporate Communications, ERG Limited. **Tel:** +61 8 9273 1243. **Fax:** +61 8 9273 1208.

Citycard To Go Live

Hertfordshire County Council in the UK is implementing a Smart Card scheme which encompasses Entitled Cards for school children, Saver Cards for students and Concessionary Cards for the disabled and Senior Citizens.

The first phase of the scheme is due to go live in Hertfordshire in November 1997. The region's school children will be given contactless Smart Cards encoded with ID details, issue date, term and authorised journey.

The cards will initially be used on Shires Buses which will be fitted with card readers integrated into the ticketing machine and a Transmo Security Module which interfaces with the existing driver's module to relay information back to the Clearing Centre.

At present most councils in the UK run entitled and concessionary schemes and pay for passes whether they are used or not. The use of Smart Cards will allow Herts County Council to control the use of the pass for authorised journeys, allocate accurate reimbursements to bus operators on a journeys-made basis and help in the planning of subsidised routes.

The cards are manufactured by ODS R Oldenbourg Datensystem of Germany using MIFARE contactless technology. A total of 30,000 cards will be issued making this the largest contactless Smart Card scheme in the UK.

The Council hopes the system will increase the use of public transport by providing increased convenience, efficiency and reduced costs. For the public the Citycard will reduce the need to carry cash and make journeys quicker and easier.



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Smart Bill Payment

A major new national bill payment network has been launched in London this month and will roll-out across the rest of the UK over the next six months. Called Paypoint it will enable customers of utility and service companies to pay their bills free of charge at over 7,300 retail locations nationwide.

Utility and service companies will issue their customers with plastic swipe cards or bar coded bills which can be used in electronic terminals at authorised Paypoint outlets to record payment details and produce a clear printed receipt. There will also be the opportunity to purchase meter tokens and charge Smart Cards or keys for use in the pre-payment metering systems.



Left:
PayPoint in Action

Far Left:
Citycard, due to go live in
November 1997
[Hertfordshire County
Council]

The retail outlets selected by Paypoint are typically those with extended opening hours and convenient locations. The full service specification includes Smart Card and key technology for the home metering systems produced by ABB (GEC), Landis & Gyr and Schlumberger.

Contact: Rob Farbrother, Managing Director, Paypoint Services Ltd. Tel: +44 (0)1707 600 311. Mobile: 0831 654 313.

Alexander G Bell PhoneCard

This year marks the 150th anniversary of the birth of Alexander Graham Bell, inventor of the telephone.

To commemorate Bell's birthday British Telecom (BT) issued six limited edition phonecards. The cards were designed by Creative IQ and the reverse side captures key moments from the inventor's life. These include the first words spoken by Bell on the wire: "Mr Watson, come here; I want you."

The cards were manufactured by GPT and Gemplus. The chips were supplied by Siemens and a total of 750 cards have been issued.

During his lifetime Alexander Graham Bell predicted that "in the future, wires will unite...different cities, and one part of the world with another."

One can only guess what Bell would have felt had he been around today to witness the speed and accuracy of modern communication systems such as the mobile telephone and e-mail.

Contact: Les King, BT Payphones. Tel: +44 (0)181 666 7083. Fax: +44 (0)181 666 4602

US Marines Get Smart

Right:
US Marines board
Helicopter
[American Express]



American Express and the US Marine Corps have announced the launch of The Marine Corps Smart Technologies Pilot, a test of multi-application Smart Cards.

The pilot is taking place at Marine Corps Air Station New River and Camp Lejeune in Jacksonville, North Carolina. Approximately 2,000 Marines will receive either the Government Card, with traditional charge card functionality or the Government Fund Card, with stored value function. Both cards use Smart Card technology and feature a Bull multi-function chip with 8K bytes of EEPROM.

The Marines are to use the cards for a number of different functions. These include checking weapons in and out of the armory, when boarding a transport vehicle, to purchase food in the cafeteria and as an electronic purse.

Banksys' Proton technology is being used for the electronic purse application. American Express is a non-exclusive licence holder of the Proton technology. The Marines will be able to use the electronic purse to make purchases at popular locations on base such as the Officer's Club, bowling alley and barber shop.

Software for the armory, food service and Smart Card applications is being provided by Logicon. Oracle Corp is providing software to streamline the travel administration and Intermec is providing the card reader terminals.

**Contact: Molly Faust, American Express. Tel: +1 212 640 7453. E-mail: molly.faust@aexp.com
Captain Sean Gibson, US Marine Corps. Tel: +1 703 614 4309. • Yuri Tolmatchov, Banksys. Tel: +32 2 727 6666. Fax: +32 2 727 2727. E-mail: tolmatchov@banksys.be**

Automation Project for Racom

Racom Systems, Inc., the Denver, Colorado, specialists in contactless Smart Card systems, has been awarded a contract by Honeywell, Inc.'s Home Products Division to provide an advanced Smart Card system that will automate the production of its home control thermostats.

Richard Horton, Racom's President and CEO, said the contract reinforced their corporate strategy "to provide solutions in major markets, such as industrial automation, that go beyond the scope of traditional Smart Card applications."

Honeywell's thermostat production line is based on the integration of robotic, machine vision and distributed data processing assembly techniques and has only two human operators.

The new system will track work-in-process data "off-line." Once the domain of a central host computer, real-time data will be handled on the assembly line by Racom "Smart tags," and Honeywell workstations and robots, reducing production floor dependence on centralized systems.

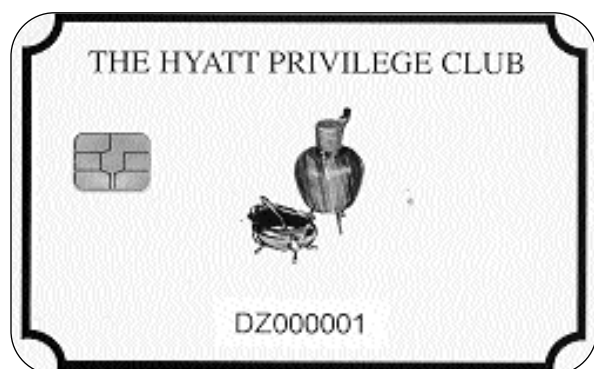
Critical manufacturing data, such as routing information, job instructions and status, will be distributed and processed throughout the manufacturing floor between the tags, workstations and robots.

Racom's Smart tags will be attached to conveyor-born, 5-inch square pallets holding the thermostats. As the thermostats travel down the assembly line, workstations will receive data from the tags using Racom's contactless communications technology. The workstations will then instruct integrated robots and other automation equipment to assemble the thermostats according to current status and assembly data.

All communications, processing and storage in Racom's tags and terminals are sealed and based on solid state electronics, reducing the risks of system failure resulting from mechanical wear. System reliability is also expected to increase, since Racom's tags use electromagnetic induction rather than batteries for power, processing and communications.

Contact: Bill Jacobs, Marketing, Racom Systems - Tel: +1 303 771 2077. Fax: +1 303 771 4708.

Hyatt Hotels Get Smart



Microcache and ORGA have announced that Hyatt Hotels are to introduce a Smart Card system to their exclusive dining club. The scheme is due to be launched in one hotel later this month and will be rolled out to other restaurants soon.

Members will be given a re-chargeable Smart Card which, in conjunction with portable read / write 'handy' devices, will be used to accumulate various incentive values. Card holders will be able to check, spend and receive value instantly with the help of staff.

A spokesperson for ORGA said there has been considerable interest in the scheme and confirmed that another large hotel group is to follow Hyatt shortly.

Contact: Simon Reed, ORGA Card Systems. Tel: +44 (0)1628 624265. Fax: +44 (0)1628 624838. E-mail: sreed@orga.co.uk

Internet Commerce for Turkey

VeriFone Inc., a subsidiary of Hewlett-Packard, is to provide Internet commerce technology for Garanti Bank in Turkey to enable it to offer a complete Internet payment solution for its merchant partners.

The solution will be based on VeriFone's vPOS, vGATE and vWallet software conforming to the SET (Secure Electronic Transaction) protocol, and run on HP servers.

Internet commerce is an emerging market in Turkey and Garanti Bank, the first bank in Turkey to extend on-line/real time service to its entire branch network, plans to establish a leading position.

Contact: Mark McMurtrie, VeriFone - Tel: +44 (0)1895 824031. E-mail: Mark_m1@verifone.com

New Card Operating System

Amazing Controls!, formerly US³ Inc., has introduced its Amazing Operating System (AOS), a multiple application Smart Card operating system based on Personal Cipher Card Corporation's Secured Smart Card Operating System (SCOS).

Left:
The Hyatt Privilege
Club Smart Card
[ORGA]

According to Amazing Controls! the system allows the creation of up to 15 separate "virtual SmartCards" within the confines of a single card. Each "virtual" Smart Card inherits the full security feature and abilities of the parent SCOS Smart Card. Thus every application on the card can create its own set of passwords for access to its files.

"We are providing the Smart Card industry with the easiest to use and most robust operating system that is available to date," claimed BK Marya, President and CEO.

Contact: Don Witmer, Amazing Controls! - Tel: +1 408 566 0300, ext. 130. E-mail: donw@amazingcontrols.com

Bank to Market DataCard Product

DataCard Corporation has announced that US Branch Banking & Trust (BB&T), an acquiring bank with a portfolio of more than 26,000 merchants throughout Virginia and the Carolinas, will market and sell the DataCard Jigsaw modular POS solution.

Jigsaw can be configured as a transaction terminal or PIN pad and offers both magnetic stripe and Smart Card capabilities.

Contact: Mark Iverson, DataCard - Tel: +1 612 988 1763. E-mail: mark_iverson@datacard.com

SET Trial in Malaysia

Southern Bank is to introduce the first Secure Electronic Transaction (SET) programme in Malaysia in collaboration with Visa International, Sema Group Asia Pacific/Trintech, and Microsoft Malaysia/PDX Infoworld.

Contact: Jeff Perlman, Visa International Asia-Pacific - Tel: +65 437 5513. Fax: +65 437 5567.

French Airline Launches FFP

French airline AOM has launched a Smart Card frequent flyer programme (FFP) on all its routes worldwide. The scheme uses High Co Technologies XLS multi-function Smart Card system and Schlumberger's Payflex microprocessor card.

The airline is targeting frequent flyers with the new Smart Card version of its existing Carte Capital and extending it to new passengers. AOM ticket and check-in desks have been equipped with 85 bank card type payment terminals with High Co Technologies' loyalty software.

When a passenger checks in, his/her card is credited with a number of points based on several parameters such as destination and class. Promotional campaigns can be launched at any time to offer bonus points.

Points are stored in the card's microprocessor chip and can be debited in exchange for free tickets or instant upgrades at any time and at any AOM sales counter. The airline plans that points will soon be accepted by its partners such as car rental companies, taxis, hotels, restaurants, entertainment centres and other airlines worldwide.

Customer benefits

- Points are credited and debited instantly each time the card is presented at a terminal.
- Points stored in the card's electronic purse can be exchanged for rewards at any time and at any terminal belonging to AOM or a partner.
- The terminal prints a detailed loyalty statement after each transaction showing the full status of the cardholder's Carte Capital account (prior balance, points earned with the transaction, new balance, promotional and incentive messages, etc.).

AOM benefits

- Loyalty statements printed at each transaction are used as a direct marketing tool.
- Printed receipts also eliminate the need to mail out costly account balance statements, resulting in significant savings.

- The program functions on a cost effective IT infrastructure.
- XLS technology for multi-function Smart Cards will be enhanced to allow for electronic ticketing capabilities.

The system brings together the Payflex microprocessor card from Schlumberger and High Co Technologies' software. The two French companies entered into a partnership last year to develop next-generation multi-function payment / loyalty cards.

The chip has an easily partitioned memory array allowing several applications to co-exist securely on one card with no possibility of switching between applications without additional checks.

As each application has its own security mechanism to ensure flexibility, the card can support multiple loyalty schemes alongside electronic cash facilities if required.

Contact: Isabelle Marad, Schlumberger Electronic Transactions, France - Tel: +33 (0)1 47 46 55 42. Fax: +33 (0)1 47 46 68 26.

Book Review

Smart Cards in Transport by Bob Dean, Dr. Dave Arnold and Dr. Peter Harrop Published by Footnote Publications, Oxford. ISBN 0 9530563 0 9. Price - £350 for the UK, £375 rest of the world.

Did you know that the world airlines have lost more money in the period 1990-95 than they have made since the Wright brother's first flight? 23% of revenue is lost due to distributing tickets. Just one of many examples of business cases for Smart Cards in this 200 page, easy to read, soft back book.

The authors have comprehensively researched the transport market with future forecast's, successful role models and the lessons to be learnt from the failures, transport law and Smart Card fraud along with a glossary of terms.

For more information email bobdean@btinternet.com. Telephone +44 (0)1235 868937 Fax: +44(0)1235 868953. There is a full list on <http://www.isiselec.demon.co.uk>.

CardSwitch

Australian company Oratel Pty Ltd have launched a product called CardSwitch which allows mobile handsets to hold two GSM SIM cards.

In its simplest form a person can receive all their incoming calls on one carrier and make all outgoing calls on the other. Other possibilities include using one carrier as a loyalty or stored value Smart Card allowing applications such as electronic banking.

The second generation product, due to be completed later this year, will be a software CardSwitch which will enable any mobile phone chip to communicate to any network, effectively creating an open system.

Vice President Leon Vandenberg told SCN that he is seeking partners for licensing and distribution worldwide. He added their first patent will be issued in South Africa which will be followed by a further 84 patents.

Contact: *Leon Vandenberg, Executive Vice President, Newcom Technologies. Tel: +61 8 8271 5311. Fax: +61 8 8271 5268. E-mail: leon@oratel.on.net*

Loose Chippings

- Coms21 claims to have a Smart Card deal in China worth a potential A\$1.5 billion. The deal, supplying cards and readers to The People's Insurance Company of China, may eventually have 242 million cards in use.
- Gemplus has a second Japanese shareholder. NTT Data Corporation has acquired an undisclosed stake in Gemplus.
- Mondex has unveiled a new high security chip which will be used by Mondex chip card issuers as they move to wider consumer roll-out.
- Racom Systems has announced the availability of a new generation of affordable Smart Card systems in contact and contactless operation. The series of cards is called RX-1500.

Smart Card Diary

Smart Cards in the Airline Industry - The Profitable Way Forward?, London Heathrow Hilton, London, UK, 7/8 October.

International Conference Group - Tel: +44 (0)181 743 8787. Fax: +44 (0)181 740 1717.

The Holland Chipcard Experience, The Hague, The Netherlands, 9/10 October.

Dutch National Chipcard Platform - Tel: +31 40 296 4845. Fax: +31 40 297 4976. E-mail: akl@euroforum.nl.

CarteS '97, Exhibition and Conference, Paris, France, 15-17 October.

CEP Exposium - Tel: +33 (0)1 49 68 52 43

ICMA Seventh Annual Card Manufacturing Expo '97, The Royal Lancaster Hotel, London, UK, 19-23 October.

ICMA - Tel: +1 609 799 4900. Fax: +1 609 799 7032.

Electronic Cash Industry Meeting

Hundreds of members of the international electronic cash industry met in Guelph, Ontario, Canada, this month to discuss the future of money.

This was the second meeting of the international Mondex Suppliers Forum and brought together equipment makers, systems designers, programmers, consultants and Mondex members in Guelph which hosts the most advanced Mondex implementation worldwide and where more than 90 per cent of merchants in the city accept Mondex.

The Forum is designed to allow suppliers to meet, keep abreast of developments and prepare for international roll-out.

David Taylor, Senior Vice President, North America for Mondex International, explained: "The pace of development in the electronic cash industry is extraordinarily rapid. It is vital for key industry players to stay in contact to share innovations and solutions."

Integrated Circuit Card Standards and Specifications - Part 12

Electronic Payment Systems

Nothing can be so exciting as the world of electronic commerce. Developments abound and every day we hear of yet new applications being applied on the Internet. It is here we are going to see some of the real killer applications for Smart Cards emerge. Whether for conventional home shopping or some of the newer applications such as on line gaming we need to establish secure and efficient methods of payment.

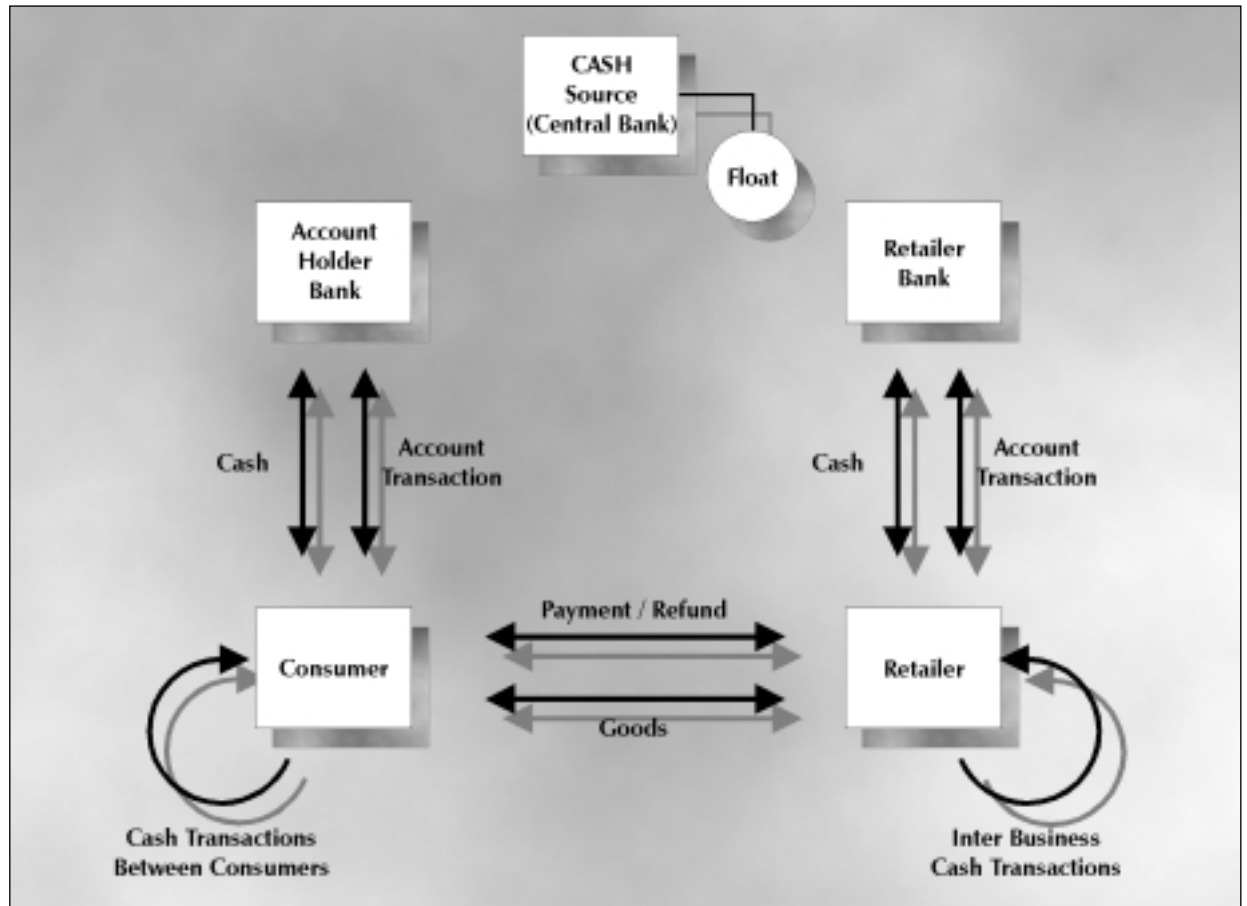
This month we are going to have a look at electronic payment systems as the basis for showing the role of Smart Cards in this new business opportunity. To start with we need to examine how the different payment systems operate and then to show how the use of Smart Cards opens up new horizons.

In *figure 1* we can see the basic cash model. Consumers obtain their cash from the bank using the conventional account relationship. Cash is provided in return for debiting the consumers account. Cash is totally transferable and allows consumers to make payment amongst themselves for whatever reason. Retailers collect cash in exchange for

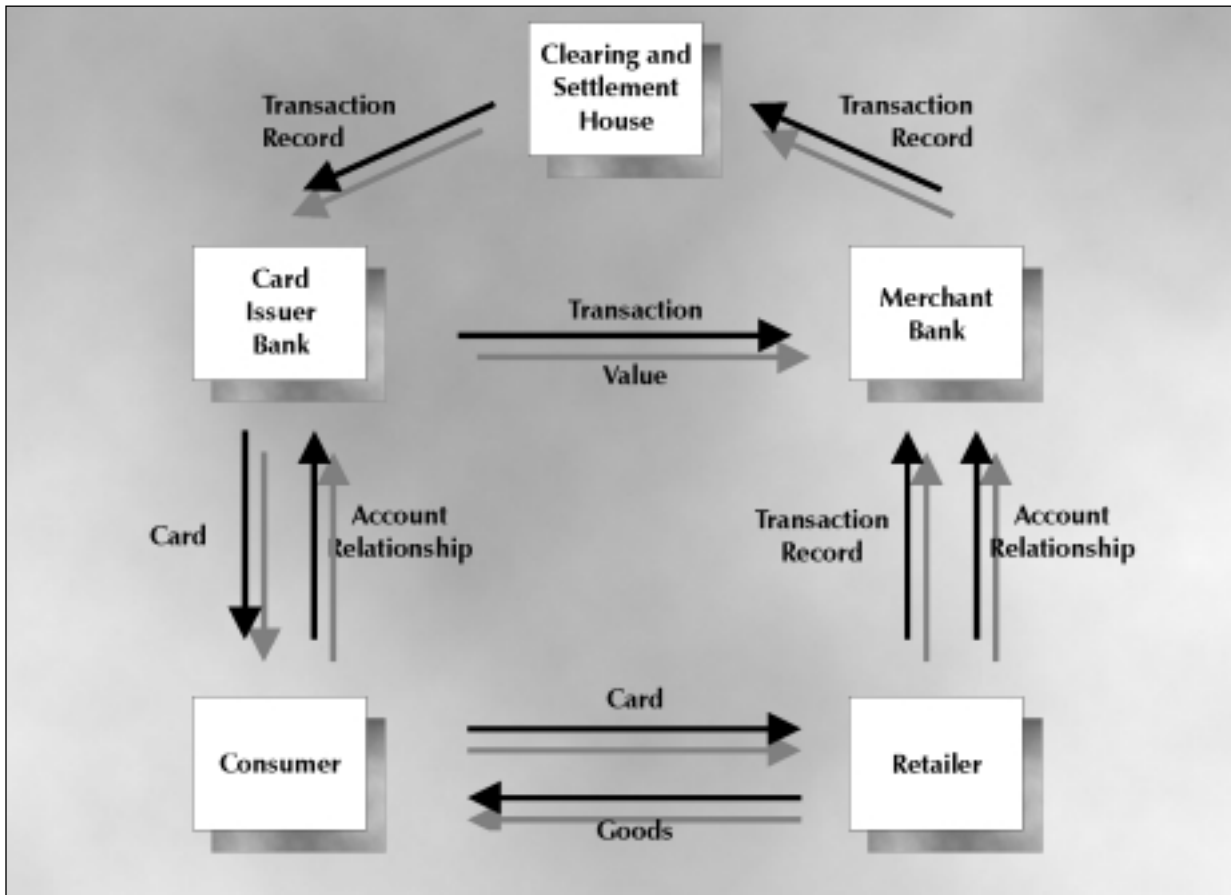
goods and services which is subsequently lodged with their bank along with the associated account credit. In dealing with the bank there is no record of the individual transactions, only the cumulative totals are processed. The important point to notice here is that there are no individual transaction charges and the particular payments are anonymous. Cash transactions are usually handled on a person to person basis with the immediate transfer of goods or services. The source of this cash is the central bank for the national currency. The central bank effectively sells notes and coins to the consumer bank for distribution to their customers. As such the central banks effectively hold a float, an asset which can be managed for financial gain with the attendant liability to make repayment on demand.

In many cases the handling of cash is practically inconvenient and accordingly cheques became the common way of making payment for larger amounts. This cheque is an instruction to the cheque holders account to transfer the transaction value as an asset to the payee's account. Clearly the management of this paper material was a significant overhead which led to the introduction of the debit card (*figure 2*). This is a payment instruction that allows the transaction instruction to be handled in an electronic form. This is faster and cheaper to implement and also allows the payee to obtain authorisation for the transaction before handing over the goods.

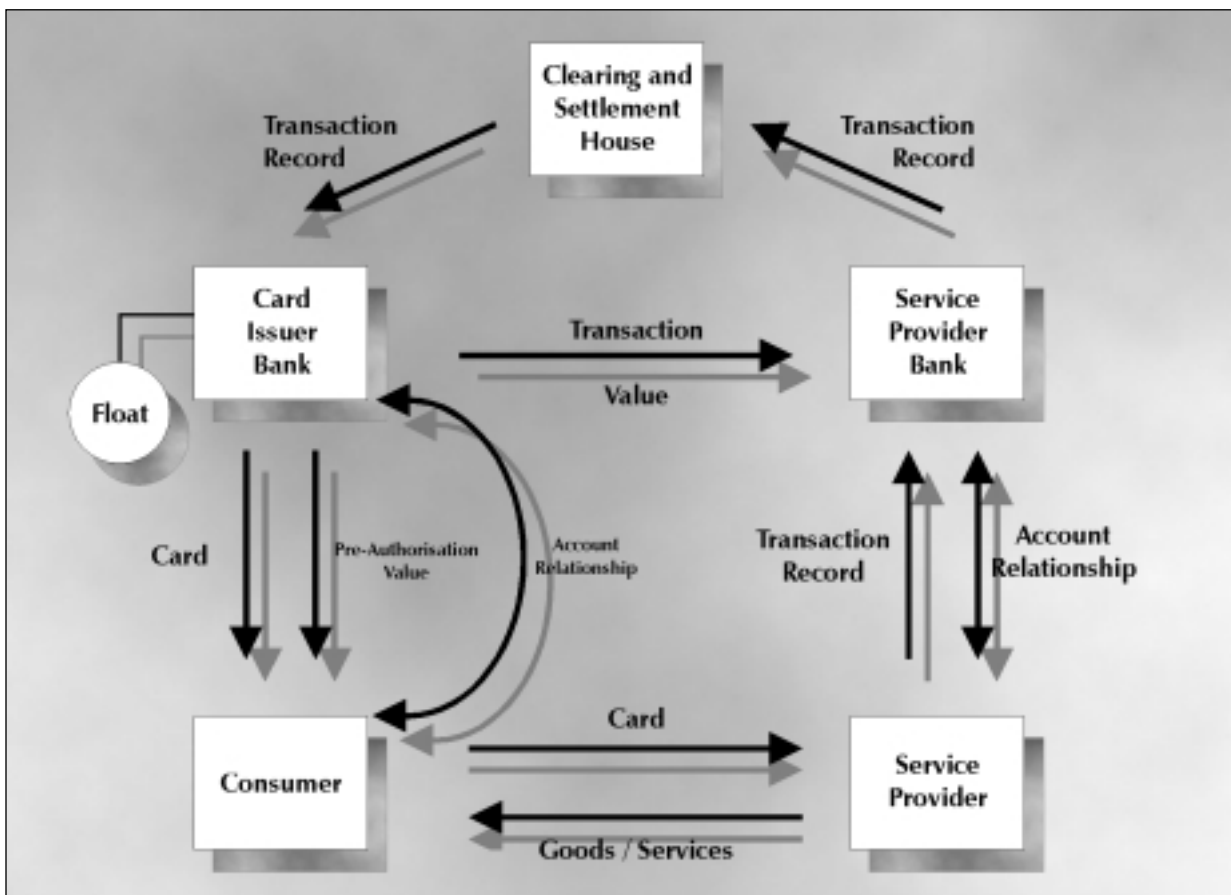
Right:
Figure 1
CASH Payments



Left:
Figure 2
Debit Card Payment

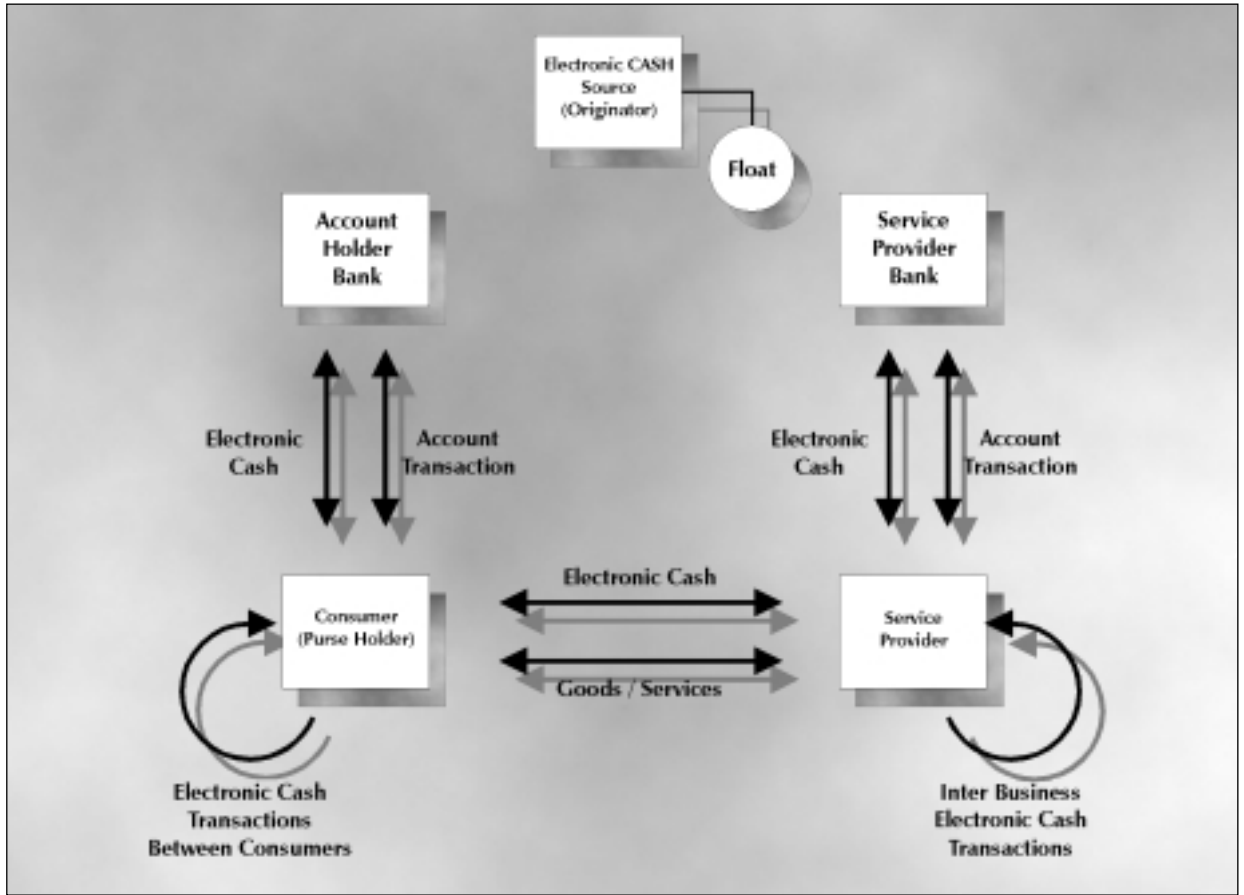


Left:
Figure 3
Electronic Purse Payment
(Classical Model)

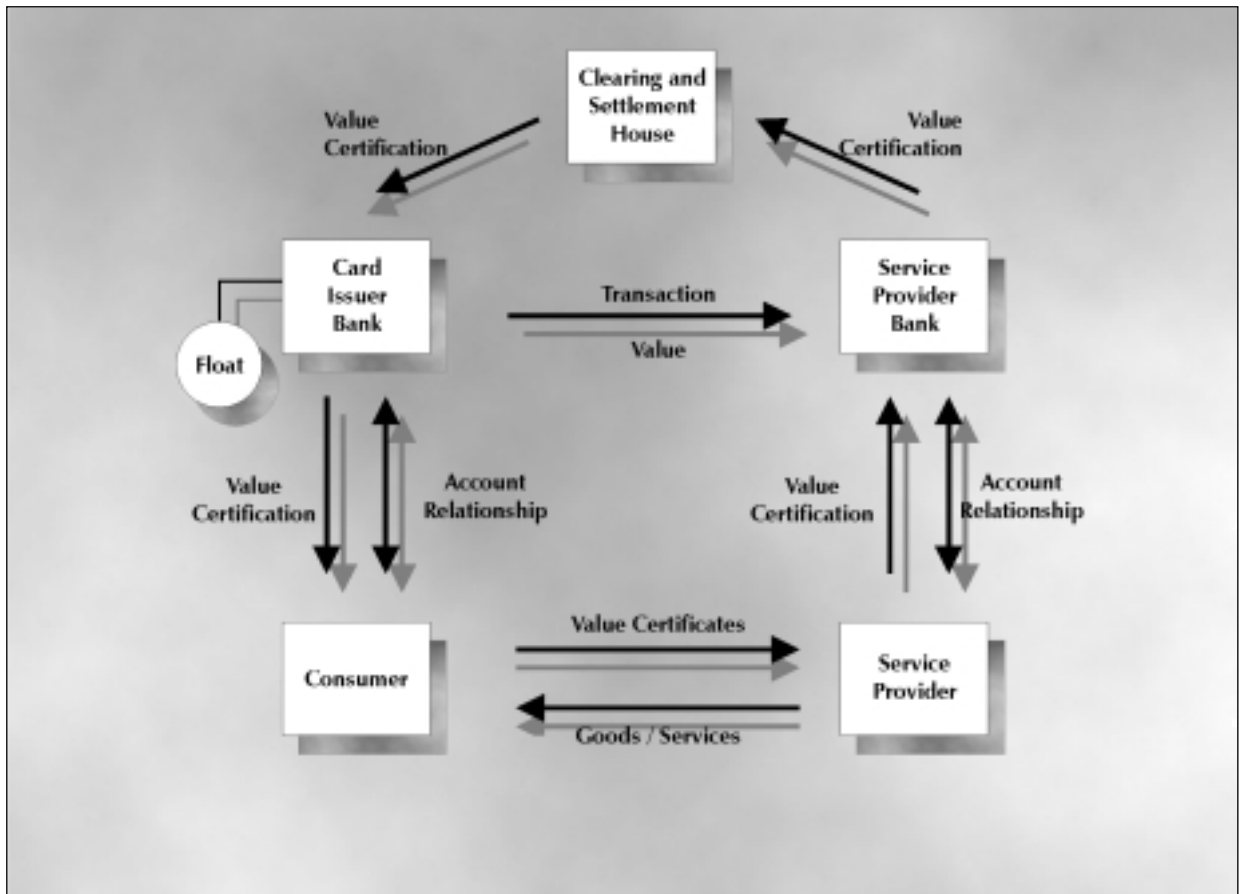


Smart Card Tutorial

Right:
Figure 4
Electronic Cash
(Mondex Model)



Right:
Figure 5
Electronic Certification
(DigiCash Model)



Subscription Form

The overheads in this system are not insubstantial. Just as with cheques there is a need for a clearing and settlement system. This is operated between the banks by a trusted third party that collects all the individual transaction data to allow a net settlement between the banks. Charges are made by the banks to cover the cost of their overheads. It is readily apparent that the cost for a particular transaction will be the same regardless of the amount. This explains the reluctance of retailers to accept cheques or debit cards for low value payment.

With the move to electronic commerce there is an increasing need to find a more effective payment mechanism. Such an operation must allow the processing of low value payments with negligible overheads. It is instructive to examine the classical electronic purse scheme as shown in *figure 3*. What we can see here is an operation very similar to the debit card. We still need to have that clearing and settlement house for the individual transactions. The main difference is that the consumer's bank effectively pre-authorises a value amount to be represented in the Smart Card electronic purse. In the process the bank builds up a float which holds the value of all pre-authorised payments to meet the eventual liability incurred by the consumer in purchasing goods. Although it is clear that there can be little difference in the cost of managing these transactions, but there is however a float that allows the bank to invest for financial gain. Such a gain can be offset against the transaction overheads. It should be noted however that a new risk creeps into the system due to this liability for repayment. The central banks who are usually the regulator for financial integrity are still considering the implications of such risks.

Mondex is an electronic cash system quite unique in its approach as shown in *figure 4*. We can see that it operates like cash. There is no clearing and settlement system. As such there are no individual transaction fees which eliminates the main cost overhead. Although there is still the concept of a float this is managed high up in the chain similar to the cash model described earlier.

Another electronic payment model has been developed by Digicash which effects payment by means of electronic certificates. The certificates are issued by the consumer's bank and are very much like a bankers draft. Again we still need to implement a clearing and settlement system in order to complete the payment between the consumer and service provider banks.

The role of the Smart Card is quite different between the particular systems and next month we will examine in more detail the functions and security requirements that allow these payments to be processed.

Next month: Electronic Payment Systems continued
David B Everett



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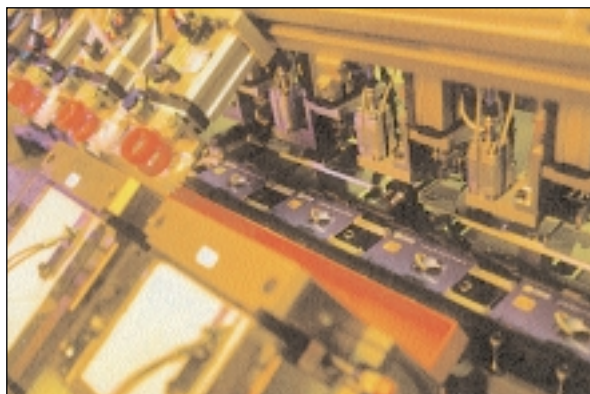
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News

Schlumberger Card Factory in HK

Right:
Smart Card manufacturing
in Hong Kong
[Schlumberger]



Far Right:
The International Smart
Card Industry Guide, due
for publication in October
[Smart Card News Ltd]

Schlumberger has opened a new Smart Card manufacturing plant in the Aberdeen district of Hong Kong. The 20,000² ft facility will be capable of manufacturing up to half a million cards per month initially, and has room for expansion.

The new venture is called the Hong Kong Cards Industrial Centre (HKCIC).

In combination with the Schlumberger Hong Kong Electronic Transactions Technical Centre - an application development centre opened last year - the factory aims to meet the demand for new Smart Card services throughout Asia.

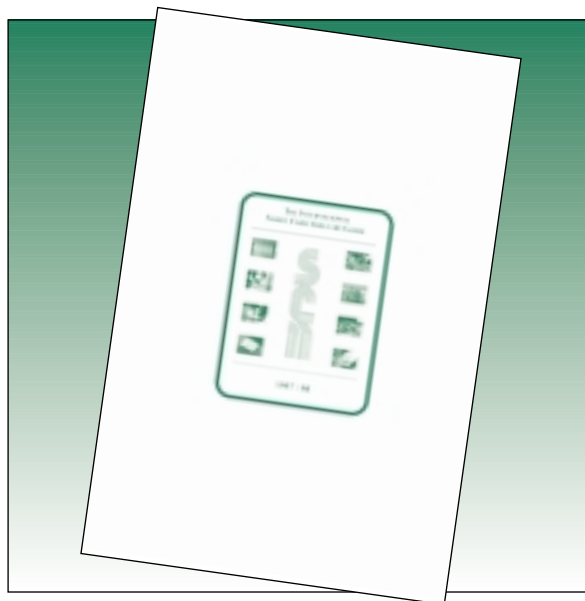
Schlumberger says that the strategic location of its Hong Kong design and manufacturing capabilities can substantially reduce time to market for Asian clients developing new Smart Card-based services.

“This latest factory will play a key role in helping our Asian clients to create more efficient businesses, and to design products for a new worldwide marketplace of immense proportions,” noted Jack Liu, Managing Director of Schlumberger Test & Transactions Asia.

“We have selected Hong Kong for its excellent infrastructure, pool of technical and management talent, and its proximity to the largest potential customers in the world.”

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Industry Guide Available Soon



The third edition of *The International Smart Card Industry Guide* is due for publication in October.

This year's edition will be even more comprehensive, covering the following:

- Detailed information on some 200 companies involved in Smart Card technology.
- Descriptions of their products and services
- Contact names, addresses and numbers
- Information on some 100 of the main Smart Card applications around the world, including electronic purse schemes.
- A glossary of terms used in the industry and comprehensive indexes.

In addition there will be feature articles on the *Java Electronic Commerce Framework*, *Java Card or MULTOS - What Do I Choose?* and *Electronic Money and Government* written by industry experts.

If you have not ordered your copy of the Guide yet do it now by letter, phone, fax or e-mail (details on inside front page).

The Guide is available to subscribers for the discount price of £70, and to non-subscribers at £125 plus postage and packing.