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Smart Card Driving License Could Cut Fraud by 45bn

An electronic driving license which could save the European Community 45 billion euros a year was described by its developer, Dr Fred Goldberg, at the Cards UK 98 Conference in Birmingham UK last month.

The Smart Card-based system would not only cut driving license fraud, it could be the "key" to opening the vehicle doors and starting the ignition. In addition, by programming information on the card, the system could prevent drivers who do not have a license or insurance from starting the vehicle and driving it away.

The European Commission, the US National Highway Traffic Safety Administration, Australian state governments and other agencies are said to be discussing the implementation of the system.

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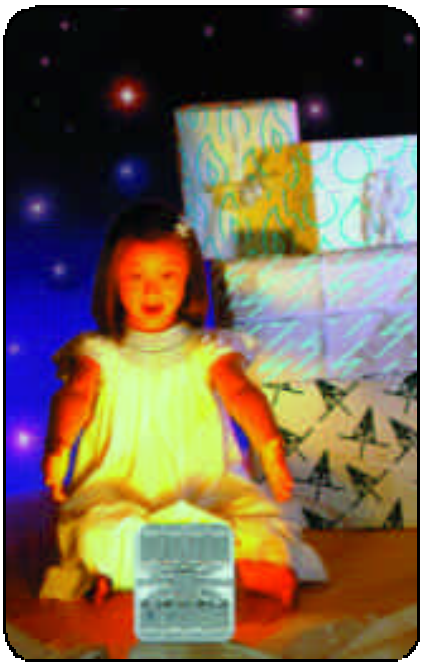

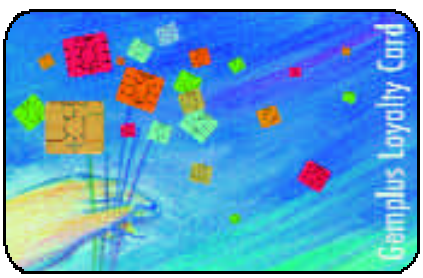

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December 1998

Cards on the Cover
Vintage Christmas Smart Cards

Main Photograph
Smart Card News Reconstruction
[Smart Card News Ltd]

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Electronic Driving License

Continued from page 221.

In developing the electronic driving license, Dr Goldberg, Managing Director of Card Safety System AB, of Sweden, said that contact Smart Cards had been found to be unsuitable after several months because of heavy wear and tear.

He compared a bank payment card kept in a wallet and used every few days, to a card kept in a pocket with coins and keys and used perhaps as often as five times a day.

The Legic contactless Smart Card from Kaba has now been selected for the scheme. It was only necessary to swipe the card over the locking system to open the vehicle door and switch off the alarm.

Amongst other uses, the card could act as a personal ID card, a passport and could hold medical information.

According to Dr Goldberg, the system could stop 50 per cent of drunken driving by forcing previously convicted drivers to take a breath test with onboard equipment to show that he or she was fit to drive before the car would start.

Dr Goldberg has received a number of awards for his work including the European Commission EURO-Case IT award 1995 and a Swedish traffic safety medal in gold.

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Citizen Card for Aberdeen

Aberdeen in Scotland is to launch a Citizens' Card for its 225,000 residents in the Spring of 1999 with initial applications for schools, leisure centres and libraries.

A Working Group set up by the Aberdeen Council to implement the project has received presentations from a selection of potential suppliers of card-based systems and is now working with its executive advisors, Smartex of Cambridge, on the design and development phases.

Chair of the Working Group and Assistant Director of Eduction, Charles Muir, said they would shortly be identifying suitable partners for the longer term aspect of the project, from both the public and private sectors.

He said: "It is essential that we design a platform for the future that will ensure that we can all use the card to its full potential, and for a useful mix of applications of benefit to all our citizens."

Council Leader, Margaret Smith, said: "Aberdeen is leading the way with a full multi-application card platform which can be built upon - layer by layer. It really is a ground-breaking project.

"We should begin to see significant benefits, even in the first phase of initial applications, for instance to children in schools, where less need to carry money could have a real impact on bullying and social stigmatisation."

Applications are likely to range from school meal payments, access to Council leisure facilities, payments on bus transport, through to library membership and retail loyalty.

Smartex says, in its final form, the very latest in secure multi-application cards will make this one of the world's first schemes of its type, with a technical platform designed specifically for the addition, whenever required, of new applications within a single card.

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OpenCard Consortium Expands

Four more companies - 3-G International Inc., Intellect, Newcom Technologies and Siemens Microelectronics - have joined the OpenCard Consortium driving the creation of an open standard framework for interoperable Smart Card solutions across multiple hardware and software platforms. The release of OpenCard Framework (OCF) version 1.1 was also announced. Details on www.opencard.org

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First AFC System for India

India's first automatic fare collection (AFC) system on buses is being introduced in Mumbai by the Brihanmumbai Electric Supply and Transport (BEST) and Philips India. It will be based on MIFARE contactless Smart Card technology from Philips Semiconductors.

Philips has formed a consortium with Gemplus Technologies and V J International for the AFC system. The MIFARE equipment is manufactured in Korea by Intec while the local system integration and maintenance work has been awarded to Aftek Business Machines.

The first phase of the scheme started in October with buses between Oshiwara depot and the World Trade Centre and within the next few months BEST plans to have a total of some 74 buses equipped with the AFC system.

In this implementation, passengers have to place their cards within 10 cms of the validator at the entrance to the bus and again at the end of their journey to have the correct fare deducted from the value on the card which is pre-loaded with Rs 200 and can be recharged in denominations of Rs 100.

All transaction data is recorded on a memory pack mounted on the validator. This data from all buses is downloaded to the main computer at the end of every shift to provide management information.

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AMMI 16K bytes Microcontroller

American Microdevice Manufacturing, Inc. (AMMI) has unveiled a new multi-application microcontroller based Smart Card with 16K bytes of EEPROM and targeted at the growing Internet security market. The card features AMMI's AMOS Smart Card Operating System written in high-level language C and is available now.

AMMI's latest innovation is a field-upgradable Operating System extension which makes the new card universal and open to system advances.

Using this new feature, enabled by AMMI's Flash microcontroller technology, the service provider no longer has to replace Smart Cards when adding a new feature or upgrading the system security. Upgrades can be done immediately, even over the Internet.

Friedrich Plankensteiner, Director of Marketing and Sales for AMMI, said "After expanding our product line to tackle the GSM market (SCN July 1998, p. 125), this latest extension gives AMMI a leading position in the Internet security market."

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Dual Mode ASK for Chip Cards

Siemens Semiconductors SLE66CL 160S chip card controller is claimed to be the world's first device to support the two contactless modulation methods for transmission in the radio frequency band, ASK 100% and ASK 10% (Amplitude Shift Keying).

Jürgen Kuttruff, Head of Marketing in the Security and Chip Card IC Product Division, explained: "The chip offers maximum flexibility to any service provider supplying contactless cards. With our chip, the service provider can opt for the alternative modulation method at any time - and can do so at minimal expense on the chip card side." Siemens says the 160S is particularly suitable for chip cards in combined applications such as an electronic purse which can also be used in public transport schemes. Other application areas include healthcare, access control systems and mobile communications.

The chip allows fast DES encryption even for contactless transmissions. Siemens says its Triple DES accelerator is implemented in hardware and performs DES calculations much faster than conventional software-only solutions. Memory capacities of 16K EEPROM, 32K ROM and 1.2K RAM simplify programming and allow implementation of multi-application operating systems on a single chip card.

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De La Rue Partner Programme

De La Rue Card Systems has announced its Smart Partner Programme with a "think global - act local" methodology.

It plans to recruit over 100 Value Added Partners and Software Providers within two years who will provide systems integration, consultancy, project management and software solutions based on De La Rue's range of Smart Card products.

The partners will work in markets such as identity, loyalty, security, access control, campus, electronic purse, e-commerce and GSM to provide end-to-end solutions. They will be provided with Smart Cards, introduction kits, training, readers and development kits and personalisation systems to implement a comprehensive smart solution.

Jean-Marc Brunswick, Smart Partner Programme Manager, said: "Using the specialist in-country knowledge of Value Added Partners and Software Providers, we will be able to offer De La Rue's global expertise on a local scale."

Companies interested in becoming a De La Rue Smart Partner should contact:

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Smart Label for Logistics

Gemplus previewed its first Logistics Smart Label at Scantech in Paris last month and said they will be available in the first half of 1999. The low-cost label is designed to enhance traceability in logistics applications such as baggage and parcel handling.

About the size of a conventional bar code label, it contains the Philips ICode chip which allows the label to act as a portable and updatable database. It also has a built-in radio frequency antenna and can be read at distances of up to 1.2 metres.

In use it can be directly attached to a product or packing carton, or fixed onto a crate or pallet. It can be concealed, covered with another label or printed over. Currently, the labels measure 5 cms x 5 cms with a thickness of less than 0.5mm where the chip is located, and approximately 0.1mm elsewhere.

Products can be monitored at all stages of the distribution chain. Label data readers, which can read several labels simultaneously, are suitable for use with conveyor belts or assembly lines as well as at packing or palletisation stations, delivery check-points, and when putting into or taking out of storage.

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G&D Support for MULTOS

German Smart Card manufacturer Giesecke & Devrient (G&D) has announced support for the MULTOS multi-application Smart Card operating system by joining the MAOSCO Consortium promoting it as an open industry standard.

Dieter Bulle, G&D Executive Vice President, explained: "In the short term our efforts are focused on building and commissioning MULTOS card manufacturing and personalisation capability."

He added that some of the first MULTOS cards would be manufactured by G&D subsidiary Security Card Systems in Canada later this year. Plans include extending G&D's product range to include MULTOS applications and an application development service as well as full implementation of the operating system.

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Gemplus to Distribute Smarty

SmartDisk Corporation has announced that Gemplus will distribute its Smarty reader/writer for e-commerce applications on a worldwide basis.

The device offers universal Smart Card accessibility to any user who has a PC with a floppy disk drive. It has the same dimensions as a 3.5 inch floppy disk and includes a slot for inserting a Smart Card.

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Mobile Datacomms Service

Telecom Italia Mobile (TIM) is trialing Schlumberger's new Java-compatible Cyberflex mobile solution that enables mobile subscribers to configure Smart Card GSM SIM (Subscriber Identity Module) cards in the field with value-added information and e-commerce services, downloading applications remotely to suit individual requirements.

TIM, the biggest mobile phone service operator in Europe with more than 13 million customers in Italy and operator of GSM 900 and 1800 MHz digital networks, sees this technology as a powerful way of creating a dynamic 'self marketing' environment for the mobile industry, in which users can choose, load and delete application programs freely while on the move. An Aremis server, provided in the Schlumberger package, enables the remote management of subscribers and applications and provides advanced tools to interrogate and update users' GSM cards and profiles. TIM has installed this server and developed a customised access tool to interact with the server and is trialing it with Java-compatible SIMs from the Schlumberger Cyberflex Simera family and handsets compatible with GSM Phase2+ specifications and the SIM Application Toolkit.

Sergio Cozzolino, Project Development Manager for TIM, said: "In addition to allowing subscribers to manage their own service portfolios for the very first time, the solution provides an open environment that allows us to work easily with third-parties such as content providers."

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Portable Smart Card Reader

An all-in-one portable Smart Card reader with twin card interfaces is now available from Gemplus.

Called the GCR800-MS, the reader is specially designed for applications requiring mobility, user authentication and data transfer, for example, healthcare and social programs, loyalty and electronic purse.

With the twin Smart Card interface, the reader can handle the reading and writing of two cards at the same time, an important feature for authentication or digital signature.

A docking station for the card reader has an integrated modem that allows connection if required to a central server for data transfer or the updating of an application program.

One thousand of the readers are being used in the Adicarte system, a French nationwide project for the tracking and management of home help for the aged.

Stephane Michelin, CEO of Adicarte, the company acting for the French social services, explained: "The GCR800-MS is an ideal terminal for our work. It automates the data capture for recording the home visits made by helpers Adicarte is based on the use of the Smart Card to identify the service providers as well as the beneficiaries.

"We were looking for a portable terminal with a double Smart Card interface and able to support a digital signature system between the beneficiary's card and the helper's card."

The reader is based on Gemplus' GemCore technology and accepts any type of memory or microprocessor card.

The MS in the product name stands for Multi-SAMS and it can be specified with 0-, 2- or 4-Security Access Modules and can handle up to four different applications individually protected and secured.

Prices start at 1,500 French francs for the basic version.

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Vodafone Buys Bell-South NZ

Vodafone, the UK-based mobile phone operator, has bought New Zealand's only GSM cellular network for NZ $750 million (£237 million) from Bell-South New Zealand owned by BellSouth and Singapore Technologies.

The acquisition expands Vodafone's GSM operations which already include networks in neighbouring Australia and Fiji.

Visa Cash in Australia

St. George Bank, is to offer Visa Cash cards to the 16,500 members of the South Australian Cricket Association (SACA) for entry to the Adelaide Oval and to make purchases inside the cricket ground.

The SACA has used Smart Card ground access for the past two years, but now cricket fans will be able to use their cards for purchases of food, drinks and souvenirs inside the ground using the Visa Cash electronic purse. The card design features the Adelaide Oval under lights.

The St. George Smart Card breaks new ground in combining a number of applications on one card - Visa Cash, membership, access to the ground and the option of a Visa credit card. This means cardholders can use the Visa Cash services available at the ground, and use the same card to obtain cash at any ATM for general EFTPOS transactions at other retail outlets.

Deluxe Data International has supplied its new Deluxe Visa Cash Service Smart Card technology to St. George Bank. Developed in Australia, Deluxe Visa Cash Service uses the Visa Cash message formats and protocol to acquire Smart Card transactions and forward them for authorisation. The system is also capable of reloading card value.

St. George Bank currently uses Deluxe Connex Advantage ATM/EFTPOS software. This has been extended to incorporate the Deluxe Visa Cash Service. Connex Advantage is an advanced EFTPOS/ATM software product that operates on Tandem Nonstop fault-tolerant systems.

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Tritheim Announces PC Defender

PC Defender, announced by Tritheim Technologies, uses Smart Card technology to control unauthorised access to programs, data and e-mail held in Personal Computers.

Providing multiple levels of security, PC Defender utilises Smart Card-based encryption to protect communications and electronic commerce. A centralised control panel allows users to access and personalise protection options from a single location, for example, administrators can configure a system to accommodate multiple users and specify which programs or files each user is allowed to access.

In addition to making unauthorised access to a desktop PC nearly impossible, the card prevents data theft when a portable computer is lost or stolen.

"Because today's executives rely on notebook computers as they travel, mobile computer security is increasingly important," said Steve Ewald, Vice President of Sales and Marketing for Tritheim. "PC Defender is a powerful one-two punch that first provides access control and then provides automatic encryption of files so that no matter what happens to the user's notebook or desktop computer, valuable data is not compromised."

The package includes a Smart Card, a choice of card readers, software and documentation and costs US $159.

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Mondex Helps Students

Students at Hong Kong's University of Science and Technology (HKUST) are using reloadable Mondex electronic cash cards for the university's computer print-out services.

A Hongkong Bank-sponsored Mondex payment system has been integrated with the university's computer print-out services. Previously, students who had used their allocation of free computer print-outs had to buy coupons from the finance office which they redeemed at the computer centre. Now they can pay for printing costs using the Mondex cards obtained at the on-campus branch of Hang Seng Bank, a subsidiary of Hongkong Bank, where the cards can also be reloaded.

Kar Yan Tam, Head of HKUST's Information Systems and Management Department, said future plans included an electronic commerce trial enabling students to purchase products from the university's On-line Souvenir Shop using Mondex, Visa or MasterCards for payment.

Gemplus is Top Chip Card Vendor

Gemplus is the world's leading vendor of chip cards on a unit basis according to a Dataquest report, The Chip Card Evolution: Chip Cards Progress Towards Ubiquity.

Dataquest projects that Smart Card revenue worldwide will represent 70 per cent of the chip card market by 2002, up from 56.2 per cent in 1997. The report also forecasts that Japan and the US will be the two fastest-growing regions for chip card sales from 1997 to 2002, with sales increasing at a compound annual growth rate (CAGR) of 95 per cent, from $14 million in 1997 to $390 million in 2002 for Japan, and 94 per cent, from $19.5 million to $532 million for US. In the meantime, the European market will remain the largest region with 47.8 per cent of global sales by 2002.

"Chip cards have entered a stage of explosive growth, which will see sales expand more than fourfold over a five-year period," said Jonathan Cassell, Dataquest analyst responsible for the report. "Driving this growth will be the worldwide proliferation of chip card technology, combined with expansion of chip cards into new, high-value, high-growth applications."

According to Dataquest, chip cards are evolving from fixed-function microcontrollers into Smart Card-based programmable systems, capable of downloading, managing, and running multiple applications. In the future, they will perform essential identification and security functions in computing and Internet access.

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EDS and Oberthur Alliance

Electronic Data Systems (EDS) Electronic Business unit and Oberthur Smart Cards USA have formed an alliance to expand their expertise and offerings in plastic card manufacturing, card personalisation and Smart Cards. Under the agreement, EDS will transfer all assets from its card production facilities in Westlake, Ohio and La Mirada, California, which produce over five million cards annually, to Los Angeles-based Oberthur Smart Cards USA. The five-year agreement calls for EDS to maintain all of its existing client relationships, contracts and customer service while Oberthur will provide back-end production support for manufacturing and personalisation activities. Oberthur will assume responsibility for all production operations and EDS will continue to support its client base with expanded card services.

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Bull presents SmarTLP3 for PCs

Bull has announced the SmarTLP3 Card Reader which detects and authenticates users sending data in electronic commerce, e-mail, home banking and other applications. Plug and play in the Microsoft Windows environment, it is compatible with the PC/SC standard.

"As easy to install and use as a mouse, the SmarTLP3 delivers the security needed for the processing of sensitive information," said David Lévy, General Director of Bull Smart Cards & Terminals. It can be used in:

- electronic commerce, to authenticate the cardholder
- e-mail, to ensure message integrity and non-repudiation
- secure access to Microsoft software: Internet Explorer version 4, Outlook Express and Netlogon NT5
- specific PC/SC-compatible application software developed with Bull's Smart Builder and Crypto Builder tools.

The reader is available at the recommended retail price of 330 FF.

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HK World Showcase for E-cash

Mondex celebrated its first anniversary in Hong Kong last month claiming it was a "showcase for electronic cash worldwide" and promising further expansion with the introduction of multi-application cards with the MULTOS operating system next year.

Celebrating the first anniversary of the commercial roll-out, Mondex Asia, Hong Kong Bank and Hang Seng Bank announced that over 165,000 Mondex electronic cash cards are now in circulation making it the world's largest Mondex implementation.

There are currently more than 700 ATMs available for loading value onto the cards and over 7,000 accepting merchants across Hong Kong Island, Kowloon and the New Territories.

Michael Keegan, CEO of Mondex International, said: "In contrast to other electronic cash programmes, the people of Hong Kong are actively signing up as opposed to just being issued with a card. More importantly, people are reloading their cards, using them regularly and making them part of their everyday life."

And customers want more services available. "Buses and parking are just two of the latest ways in which our customers have shown they want to use electronic cash," said Jan McGrath, of the Hong Kong Bank.

Greg Devlin, Mondex Asia's Managing Director, said: "The Hong Kong programme is truly a showcase for electronic cash worldwide. With the imminent introduction of MULTOS, we are building a model Smart Card programme which can easily be rolled-out across other Asian Pacific markets."

NAG Buys Stake in Mondex

National Australia Group has purchased a five per cent stake in the share capital of Mondex UK. The international financial services group operates in the UK through its subsidiaries, Yorkshire Bank, Clydesdale Bank and Northern Bank. Along with three other Australian banks, it holds the Mondex franchise for Australia and is a participant in other franchises in the US, Ireland and Vietnam.

Andrew Douglas, Head of Payments, Europe, said: "National Australia Group has made a thorough investigation of different electronic cash systems and have chosen Mondex because it offers the greatest potential benefits to consumers and retailers alike."

Mondex for Ghana

Ghana Commercial Bank, the largest bank in Ghana, has purchased the franchise rights for Mondex electronic cash. The deal gives the bank exclusive rights to commercially develop Mondex in Ghana. It is in close discussion with a number of other banks in Ghana and across the region to establish a common chip technology infrastructure across the Economic Community of West African States (ECOWAS).

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Visa Cash Launch in Ireland

Visa Cash was launched in Ireland last month with Bank of Ireland, AIB Bank and Telecom Eireann. Visa says the programme will offer the first test of home ATM load devices in the EU region.

The reloadable cards are being issued to residents in the town of Ennis and will involve some 300 retailers. De La Rue Card Systems is supplying both banks with 5,000 Smart Cards each and 400 Visa Cash terminals meeting Visa's new version 3.0 specifications.

In addition to using the card for low value transactions such as at newsagents, bakeries, fast food restaurants and taxis, cardholders will also be able to use it at unattended vending machines, parking meters and payphones. During the 12-month programme, cards can be loaded with value up to a maximum of £50 either from the user's bank account or at special loading machines in the town centre.

Consumers will also be offered the opportunity to load value at home over the phone using personal ATMs provided by Telecom Eireann.

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EBT Terminals Order for VeriFone

VeriFone has been selected by Lockheed Martin IMS to install and service up to 50,000 point of sale terminals for the US Electronic Benefit Transfer (EBT) project in 15 states.

Over the next 18 months, VeriFone will install systems consisting of the Tranz 330 and Tranz 340 terminals, Printer 250 and the Pin Pad 101 security device in retail locations accepting paper-based EBT coupons.

The US government has mandated that all state food stamp programs be converted to EBT by 2002. The initial application is the card-based distribution of Food Stamps and WIC (Women, Infant, Children) payments through the US Department of Agriculture.

Recipients can use their magnetic stripe or Smart Card to make purchases at merchants with EBT terminals, reducing the administrative costs and minimizing fraud.

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Manhattan E-purse Trial Ending

The much-hyped stored value card trial in Manhattan's Upper West Side draws to a close at the end of this month - no doubt to the relief of Citibank, which issued Visa Cash cards, and to Chase Manhattan Corporation, which issued Mondex electronic cash cards.

The only really good news was that the test of interoperability between two different systems worked i.e. both Visa Cash and Mondex cards were accepted at the same point of sale terminal. But even that was hardly surprising as the technology was tested before being put in the hands of the public.

Some 100,000 Smart Cards were issued by the banks but most were never used. Merchants involved were unhappy with the take up by customers and about a third eventually either returned their terminals or switched them off. Total transactions since October 1997 amounted to about one million dollars - a tiny fraction of retail takings in the trial area.

If the US is hesitant about the value and convenience of electronic purse cards, New Yorkers gave them the thumbs down, certainly in their present offering.

All this leaves the banks wondering what to do next. If they had done their market research they might have found some answers before the Manhattan trial. Stored value is not enough. New Yorkers have wallets full of cards so why bother with another one unless there is some incentive?

Future trials are likely to be in tighter geographical areas and in closed user groups like university campuses with the card offering a value-add like using the same card to collect loyalty points, gain entry to leisure facilities, borrow library books, pay for travel on public transport or accessing computers and the Internet.

French Health Card Contract

Schlumberger Test & Transactions is to manufacture the majority of the 29 million Smart Cards for the French Vitale health project. The cards will be manufactured at Schlumberger plants in Orleans, Tours and Pont-Audemer.

The cards, being distributed to families nationwide, store a family's social security administrative details and automate the reimbursement process of healthcare fees.

In a later phase, cards known as Vitale 2, will be issued to individuals.

Right: Mobile Futures [De La Rue]

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Solar-powered P&D System

Schlumberger has installed its latest solar-powered Pay & Display (P&D) system to control on-street parking in the town centre of Woking, England.

The system comprises 14 Stelios solar-powered P&D terminals which accept Smart Cards as well as cash and are controlled by Schlumberger Parkcomm 1 centralisation program and Logiparc Windows parking management software. The scheme covers some 180 parking spaces. Smart Cards are sold pre-loaded with either £3 or £5 and can be recharged in the P&D terminals.

The implementation supplements the existing on-street parking voucher scheme. Councillor Mehala Gosling, Chairman of Woking's Highways & Traffic Management Sub-committee, explained: Whilst the voucher scheme is easily used by locals, we wanted to make things simpler for visitors and P&D is universally understood. Our aim was to extend the choice available for people coming here."

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Neng Card Approved by China

Bull has announced that its Neng card, specially developed for the Chinese financial sector, has been approved by the People's Bank of China following a series of certification tests, conformity with the PBOC specification and security of payment transactions.

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Gemplus Opens Singapore Plant

Left:
"Stelio" Pay and Display Machines
[Schlumberger]

Gemplus formally opened its card manufacturing plant in Singapore last month and was awarded regional Business Headquarters status by the Economic Development Board which brings with it a number of financial benefits. Remy de Tonnac, CEO of Gemplus, Asia-Pacific, said Gemplus saw Asia as an important and strategic market with Singapore a logical choice for its base.

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Smart IDea from Oberthur

Oberthur Smart Cards has announced a range of identity cards combining Smart Cards, biometrics, cryptographic security and security printing technology under the name of Smart IDea.

They are aimed at high level security applications such as national identity cards, driver's licences, passports, and access cards for military sites, etc. The range will use memory or microprocessor chips of 1K byte or 16K bytes EEPROM and three cards will be offered - contact, contactless and a combination contact and contactless card.

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De La Rue and iD2 Partnership

De La Rue Card Systems and iD2 Technologies have announced a partnership agreement to deliver secure financial transactions on the Internet.

A supplier of software and services for Internet security, iD2 will be developing public key software for governments, banks and corporate organisations with De La Rue offering its latest security technology and personalisation techniques.

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Bull Tools for PC Users

Bull has announced Smart Builder and Crypto Builder, two development tools to enable Personal Computer users to create their own custom Smart Card applications in a Microsoft Windows environment. Included in the tool-box are examples which Bull says make it easy for users to build and validate their own scenarios.

Crypto Builder can be used to develop applications requiring a high-level of security as the TB Crypto Smart Card provides security mechanisms protecting the cardholder's identity.

The development tools are for applications such as identification for access to Internet, intranet, extranet and to protect information regarded as sensitive; transportation with the card storing information such as ticket type, date of validity and destination; and secured use of Microsoft's Outlook Express and Internet Explorer 4.0 software - the card implementing a digital signature to ensure the integrity and non-repudiation of messages.

Easy to install, Smart Builder and Crypto Builder come with two plug and play Smart Card readers running in the Microsoft 95, 98 and NT5 environments. Both comply with the PC/SC consortium specifications.

The kits also include a Secure Access Module (SAM), a CD-ROM containing the documentation and development tools. Smart Builder comes with 10 TB cards and a recommended retail price is 4,000 FF. Crypto Builder has five TB Crypto cards which can contain personal information, public and private access codes and two X.509 or higher certificates. The recommended retail price is 4,800 FF

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Smart Cinema Tickets

Mondex International and the Israeli Globus Group cinema chain have developed a pilot project at a cinema in Ness Ziona to enable cinema goers to purchase their tickets with electronic cash. If the scheme is successful, it will be extended to the 28 cinema complexes in the chain.

US GSA SmartPay Card

The US General Services Administration (GSA) has introduced GSA SmartPay, a new federal government charge card for employees to simplify payments and cut administrative costs for travel, purchase and fleet payment services.

Contracts were awarded earlier this year to Citibank, First National Bank of Chicago, Mellon Bank, NationsBank, and US Bank. Under the program, agencies have the opportunity to combine all their travel, purchase and fleet needs on one integrated card. Federal agencies reviewed the services offered by the companies and then chose the contractor that best met their individual needs. Over two million cards have been issued and came into use at the end of last month. Federal cardholders have been issued Visa or MasterCard brand cards for their travel and purchase services, while fleet services are provided through either MasterCard or Voyager brand cards. The GSA SmartPay contracts cover expenditures valued at more than $11 billion in fiscal year 1998.

Frank P Pugliese, Jr, Commissioner of GSA's Federal Supply Service, which manages the program, said: "Together with our industry partners, GSA will provide leading edge products and services to our customers. All of us are working as a team to make electronic commerce a reality in the federal workplace."

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HK Mobile Information Service

Hong Kong GSM mobile phone operator, Hutchison Telecommunications (Hong Kong) has launched a new mobile information service utilising the power of the Smart Card SIM (Subscriber Identity Module) to give subscribers a menu-based navigational tool to quickly access information from stock prices to horse racing results. Called Orange Info, the new service is based on Schlumberger's Activa range of SIM cards.

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£28m Ruling in Smart Card Scam

A UK High Court judge has awarded News Corporation £28 million in a Smart Card over-charging case.

The case was brought by five companies led by News International, the News Corp subsidiary which owns 40 per cent of BSkyB.

Mr Justice Lindsay entered judgment against Israel-based Michael Clinger, a Director of News Data Security Products (partly owned by News Corporation) for systematically overcharging for millions of cards used by BSkyB television viewers to activate their decoders in the late 1980s and early 1990s. The judgement was for £20.8 million overcharged, plus about £8 million interest.

Judgment was also given against Michael Luzann, an associate of Mr Clinger. The defendants were also ordered to pay legal costs.

Keyboard Contract for Cherry

UK Building Society, Nationwide, is to equip its 680 branches with keyboards from Cherry, featuring built-in Smart Card and magnetic stripe card readers. Cherry worked closely with the system integrator, Siemens Nixdorf, enabling the company to pre-configure all keyboards prior to delivery so that Nationwide could "plug-in and go."

The keyboards are Europay/MasterCard/Visa compatible (EMV version 3.1.1) and include the Euro symbol on the key layout.

Contac

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Datelnet to Support MULTOS

Dutch-based Smart Card solution provider Datelnet has announced support for the MULTOS Smart Card multi-application operating system.

Producer of the Boazzi, a personal loading device for Smart Cards, Datelnet says cardholders will be able to reload their Mondex card from any telephone. In addition by connecting the Boazzi to a PC, it becomes a Smart Card reader that can be used for applications requiring personal authentication /identification. The Boazzi, which is already type approved to support the Mondex purse (level 2), is now in development to support MULTOS.

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Advanced Cryptography Test

A joint effort to test advanced methods for secure electronic commerce on multi-application Smart Cards has been announced by Standard Chartered Bank, Visa International, National University of Singapore, Privylink and Gemplus.

The tests will examine the use of a single Smart Card that can support both RSA and ECC (elliptic curve cryptosystem) calculations in a secure and cost-effective manner. (While RSA is widely used for digital signatures, ECC is said to be a new type of cryptosystem that can potentially reduce the demand for memory space on the card.)

A SET (Secure Electronic Transaction) certificate compression model developed by Visa with the aim of reducing the demand for memory space on the cards will also be examined. The project is expected to be completed by the end of 1999.

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500 Smart Card Companies For £20

Smart Card News Ltd is pleased to be able to offer advance copies of The International Smart Card Industry Directory 1999 / 2000 v1.0 CD-Rom at Smart Card '99 for the special show offer price of £20 plus VAT and Shipping.

This invaluable resource normally retails at £250. This is a once-only offer.

The disk includes information on over 500 companies involved in the Smart Card Industry.

The CDs are available from the Smart Card News stand C16, or direct from Smart Card News before the 20th February 1999.

AFC System for Toronto

GO Transit, the regional commuter rail and bus operator servicing the Greater Toronto Area of Canada, with a population of almost six million, is to update its fare collection system and plans to pilot both magnetic stripe and Smart Card technologies.

AES Prodata, part of the ERG Group of Companies, has been selected to design and supply the new automated fare collection (AFC) system for a pilot scheme involving five stations and 25 buses.

The decision to implement either or both technologies throughout the transport network will depend of customer acceptance and the demonstrated performance of the technologies.

AES Prodata (North America) President Paul Gooderham, said: "Once they have determined their preferred option, AES Prodata will install the system across the network which includes more than 50 rail stations and 230 buses."

The GO Transit system will utilise Motorola Smart Cards and readers as a result of an alliance formed earlier this year.

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Standardisation of Smart Labels

Texas Instruments and Philips Semiconductors have agreed to support a common protocol communications standard for Radio Frequency Identification (RFID) smart labels and have submitted their proposal to the International Standards Organisation (ISO).

This emerging standard provides the first multi-vendor platform for vicinity card and smart label technology and allows products from both companies to communicate at the same time with suitable reader/writer units.

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BT Orders Prototype Systems

BT has appointed IT management consultancy Hyperion, which specialises in electronic commerce, to produce a series of prototype systems bringing together multi-application Smart Cards and public key digital IDs. The British telecommunications giant says the systems under development are for demonstration purposes only, and to allow BT to experiment and evaluate different combinations of technologies in commercial scenarios.

The first system will allow consumers to load standard BT Trustwise digital IDs onto MULTOS multi-application Smart Cards and use these digital IDs, via a Smart Card reader connected to their PC, to authenticate themselves to remote Web servers, digitally sign electronic mail and read electronic mail that has been sent to them privately. Later, users will be able to download further MULTOS applications onto their cards from the Web.

Consult Hyperion Director David Birch, says: "The means to sign documents and authenticate yourself to remote counter parties to a transaction are key to the widespread uptake of electronic commerce.

"Digital IDs based on public key cryptography will become the standard mechanism for achieving the required levels of security."

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MULTOS for Discover Financial

Discover Financial Services, the US-based business unit of Morgan Stanley Dean Witter & Co., has committed to the MULTOS multi-application Smart Card operating system and joined the promoting consortium MAOSCO. The company currently issues 46 million credit cards.

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SA Rolls Out Smart Bank Cards

Two of South Africa's leading banks, First National Bank and Nedcor Bank, are rolling out Smart Card-based credit and debit cards with the Visa logo.

Both banks have already issued 500,000 Smart Cards and this number is set to increase rapidly with pre-Christmas advertising and marketing campaigns.

"We expect to gain critical mass in 1999 as more consumers begin using their cards at point of sale and more retailers start accepting these cards," said Mike Leeming, Chief Operating Officer of Nedcor Bank.

He added that already, many of the largest retailers in the country were accepting the cards. Last month, there were 25,000 accepting terminals in place.

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US Pilots for SC for Windows

CyberMark and Microsoft have announced that they will jointly pilot Microsoft's Smart Cards for Windows operating system with several customers in the US. These will include Florida State University, Villanova University and Huntington Bank.

CyberMark systems enable students on college campuses and employees in corporate facilities to replace cash at points of sale, access buildings and computer networks and link to a range of banking, telephony and customer loyalty functions.

Thomas K Burke, CyberMark's Vice President, said: "Microsoft's entry to the Smart Card market validates the market for stored value cards in the US and represents a breakthrough in cashless payment technology on an international scale.

"We anticipate rapid acceptance of Smart Cards for Windows in our market segments and look forward to a very successful pilot program."

3GI Unveils Passage Government

A turnkey multiple application Smart Card solution designed specifically for government agencies and organisation has been announced by 3-G International (3GI).

Called Passage Government, it includes six Smart Card applications, all required software and hardware and a card management system.

One card controls physical access to facilities and events, manages cardholder training and profile information and, with optional add-on modules, provides logical access and medical records applications.

John McKeon, 3GI's Director of Smart Card Solutions, explained: "With Passage Government, we are making it very easy for card issuers, IT providers, and others to offer a comprehensive Smart Card solution to their government customers."

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MULTOS Card Issuance Support

A Smart Card issuance solution that supports the MULTOS multi-application operating system has been announced by DataCard Corporation.

"The solution is completely data driven," explained Bob Beer, the company's Vice President of Smart Card Technology. "Card issuers can now purchase MULTOS Smart Cards and use their DataCard systems (9000 or 7000 Series central issuance systems configured with a personalisation module) to load any application written in the C or MEL programming languages."

The package also includes special MULTOS software that drives the card issuance process, and an object server for securely transferring data to the Smart Card module. Additional solutions for loading MULTOS EMV credit/debit and loyalty applications are forthcoming, says the company.

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PubliCARD Buys Tritheim

PubliCARD Inc has reported that it has completed the acquisition of Tritheim Technologies Inc for around $9 million in common stock and certain other considerations.

The Fairfield, Connecticut, company plans to expand its penetration of the US Smart Card industry. Recently, Tritheim announced the availability of PC Defender, a Smart Card package for data security and electronic commerce (see page 228). The company also has a product line of Smart Card readers for Personal Computers.

In a separate announcement, PubliCARD said it had terminated its previously announced letter of intent to purchase Leapfrog Smart Products Inc as the parties had failed to reach agreement on certain aspects of the transaction.

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ICL Order for CASH

ICL has been awarded a further order for 1,350 outdoor cash loaders and services worth £1.3 million for Sweden's national electronic purse called CASH.

The cash loaders have been sold to the ForeningsSparbanken, MeritaNordbanken and S-E-Banken which launched the purse project in 1997. They plan to install the loaders in a variety of locations such as banks, shopping malls, petrol stations and car parks.

It is estimated that a further 10,000 loading devices and 100,000 payments terminals will be installed for the system over the next three years.

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First Mobile Cash Phones

The first mobile phones enabling electronic cash to be downloaded onto Smart Cards will be in the hands of customers as early as next year, according to plans announced last month.

Alcatel and Gemplus, both of France, have joined forces with MasterCard subsidiary Mondex International which provides the Mondex electronic cash system, to develop the world's first mobile phone "cash machine." Transactions will take place by inserting the Smart Card into a special slot in a GSM digital cellular phone.

Eurosmart Card Forecasts

Eurosmart, the European Smart Card industry association, forecasts the manufacture of 1,280 million chip cards for the year 1998 rising to 2,395 million units in year 2000. The Association claims that Eurosmart members manufacturing in all European countries supply 89 per cent of the world market.

1998 Forecast		
	Memory (Mu)	**Microprocessor (Mu)**
Banking		104
Healthcare	20	25
Telecom	862	101
Transport		30
Pay TV/IT		30
Others	53	55
Total	935	345
Grand total		**1,280 (Mu)**

2000 Forecast		
	Memory (Mu)	**Microprocessor (Mu)**
Banking		250
Healthcare	100	70
Telecom	1,340	235
Transport		132
Pay TV/IT		64
Others	95	109
Total	1,535	860
Grand total		**2,395 (Mu)**

NHS Staff Health Clearance Card

A number of hospitals in London and the South East of England are to introduce a Smart Card system for staff health clearance. It will replace cumbersome paper-based systems which are time-consuming and open to abuse.

Hospital staff will now have the confidence that the cardholder's identity and credentials are valid and accurate.

The system, developed by Dr Stuart Miller, Director of Occupational Health at Hammersmith Hospital, London, with NBS Technologies, was piloted at the Hammersmith Hospital and is now being rolled out to other hospitals and health establishments.

The Smart Card holds the cardholder's name and personal details plus test and vaccination information for a wide range of conditions including Hepatitis B and C, Rubella, Chicken Pox, Typhoid, Diphtheria and TB.

Until now there has been no integrated system so clinical staff have required health clearance at each new hospital of employment.

Dr Miller commented: "It amazes me that one of the most important functions within the health service, and one which is so vital to the well-being of patients, visitors and members of staff, is conducted in such an old fashioned manner.

"This new system means that the NHS will be taking advantage of the latest Smart Card technologies that are available today."

As well as Hammersmith Hospitals Trust, other hospitals implementing the scheme include Chelsea and Westminster, Great Ormond Street, Royal Free, St Thomas's, St Mary's, and Luton and Dunstable.

Other hospitals are expected to join the scheme shortly and opportunities for further nationwide roll-outs are currently being assessed.

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Smart Cards and the Future

Now that we are fast approaching the millennium it is interesting to look at what has been happening in the world of Smart Cards and what we think is likely to happen in the future.

We will look at several aspects of the industry to try and identify the core concepts that will shape our future. There are four concepts that we believe will be at the heart of these matters:

- Applications
- Technology
- Infrastructure
- Security

let us look at each of these issues in turn.

Smart Card Applications

Everyone is looking for the killer application, the one that returns the business case ten times over. We will propose here that we can classify applications into two types:

- Prepayment
- Authentication

Prepayment as an application area falls into two types, closed systems and open systems. Today the largest use of Smart Cards is for prepaid telephone cards. This is a closed system in as much as that the cards are issued by a particular service provider for use in his infrastructure. The same would be true for mass transit applications which are likely to increase over the next few years. The chips used in these cards are very simple memory chips or chips with limited security functionality. The chips are small and can be produced at a relatively low cost, typically 50 cents or less. Because of the closed nature of this application a simpler security architecture is possible which significantly reduces the complexity of the chip.

The prepaid electronic purse is another major application area that has yet to come to the fore. The greatest interest here is for open payment systems where the issuer and acceptor may be commercially unrelated. Because you are effectively dealing with a cash alternative the risks make this significantly different and the requirements for security are much higher.

At this time there are a small number of major players, VisaCash, Mondex, Proton and the Geltkarte being the most obvious. Amongst these schemes Mondex stands out as being different since the underlying model is a direct asset transfer system. The other schemes actually effect a remote asset transfer system. This also affects the risk model in as much as that, in the case of Mondex, were there a fraud problem it is the Mondex value issuers that lose value. In all the other schemes it is the recently held assets of the cardholder that is on risk. However Mondex offers significant advantages in that it most closely maps the use of cash and avoids the interest overheads of processing individual transactions. For low value payments this is an important consideration.

It is our opinion that the electronic purse has its greatest advantage over cash in three application areas:

- Electronic ticketing
- Low value remote payments
- Meters (e.g parking)

At the current time the penetration into all these three areas is still relatively limited largely because the necessary infrastructure is still in its infancy. There is much talk of micro payments on the Internet but again we are still in the horse and cart game. Information providers cannot accept such payments until the infrastructure is in place and consumers will not apply for such payment mechanisms until there are enough services in place to justify their use.

Many observers have commented that there is no need for the electronic purse in Internet payments, it can be handled by existing debit/credit card instruments either directly or through the use of accounts held by the service providers. In our view the truth of this statement depends on the size of the payments and the multiplicity of service providers. For small payments you are forced into a secondary accounting system and nobody would want to set up hundreds of individual accounts.

So in our forecast for the future we see an increase in the use of closed prepayment schemes and a substantial increase in the use of open prepayment systems. A particular but so far underplayed advantage of the electronic purse is that they can be held and used by people who do not qualify for the use of other payment instruments. In particular minors represent a large sector of the population with an important spending power. It should also be noted that many of these prepayment applications are essentially anonymous

The simplest authentication application is really the classic ID card where the scope of use seems almost unbounded. There are really two underlying mechanisms:

- Cardholder Authentication
- Card Authentication
- Transaction Authentication

card authentication is relatively straightforward in that the card can contain a unique cryptographic identity that can be built into local and remote authentication processes. Limiting the cardholder to the card has always been the more elusive problem. The use of a PIN (Personal Identification Number) is well known but there still remains the problem of secure terminals that can pass the PIN into the card for checking. The only one you really trust is the terminal that you totally control. The use of biometrics is often touted as the saviour to this problem but an untrusted terminal could just as easily replay a biometric measurement as a PIN. It does however help the problem of impersonation if you can overcome the error problem. If you make the biometric control too rigid then you end up rejecting the true owner. If you are too generous on the controls then you make impersonation too easy.

There are two new application areas where the Smart Card is viewed to play a major role, access to computer workstations and LANs (Local Area Networks), and access to the Internet. Whilst these might still appear to be relatively small, being measured in a few tens of millions, there is no doubt that it will become far larger. It is in this area that Microsoft focused when they announced their Windows Card earlier this year.

In our classification we can differentiate between ID cards with local storage and ID cards with remote data storage. You could of course have a combination of both, but it seems to us that applications will fall in general into one of these two classifications. Looking at the basic application areas we can see driving licence and passports storing data on the card for local use whereas the access card for the Internet, as referred to previously, will be largely concerned with the management of remote data resources.

If we consider conventional credit/debit card instruments we are really providing an authentication mechanism for accessing remote accounts. The card itself provides the account identification but the main accounting data base is held remotely. If you look at Visa and MasterCard there are today something approaching 1 Bn cards in circulation worldwide.

The use of Smart Cards for these payment instruments does however offer an additional security service and that is the ability to authenticate instructions, in this case a particular payment transaction.

The fact that we have included all these applications in one area represents our view that in most cases an identity card has little value if it cannot authenticate instructions whatever the particular application may be. In other words a passive identity card that just stores identification data has little commercial value, it is nearly always necessary to challenge the card and owner to prove their identity and to be able to show convincingly, after the event, that the card was truly used.

Dr. David B Everett

Next month: The future continued

De La Rue Opens Office in Sweden

De La Rue Card Systems has opened a new office in Stockholm, Sweden, to service the GSM, banking and electronic commerce sectors in Scandinavia.

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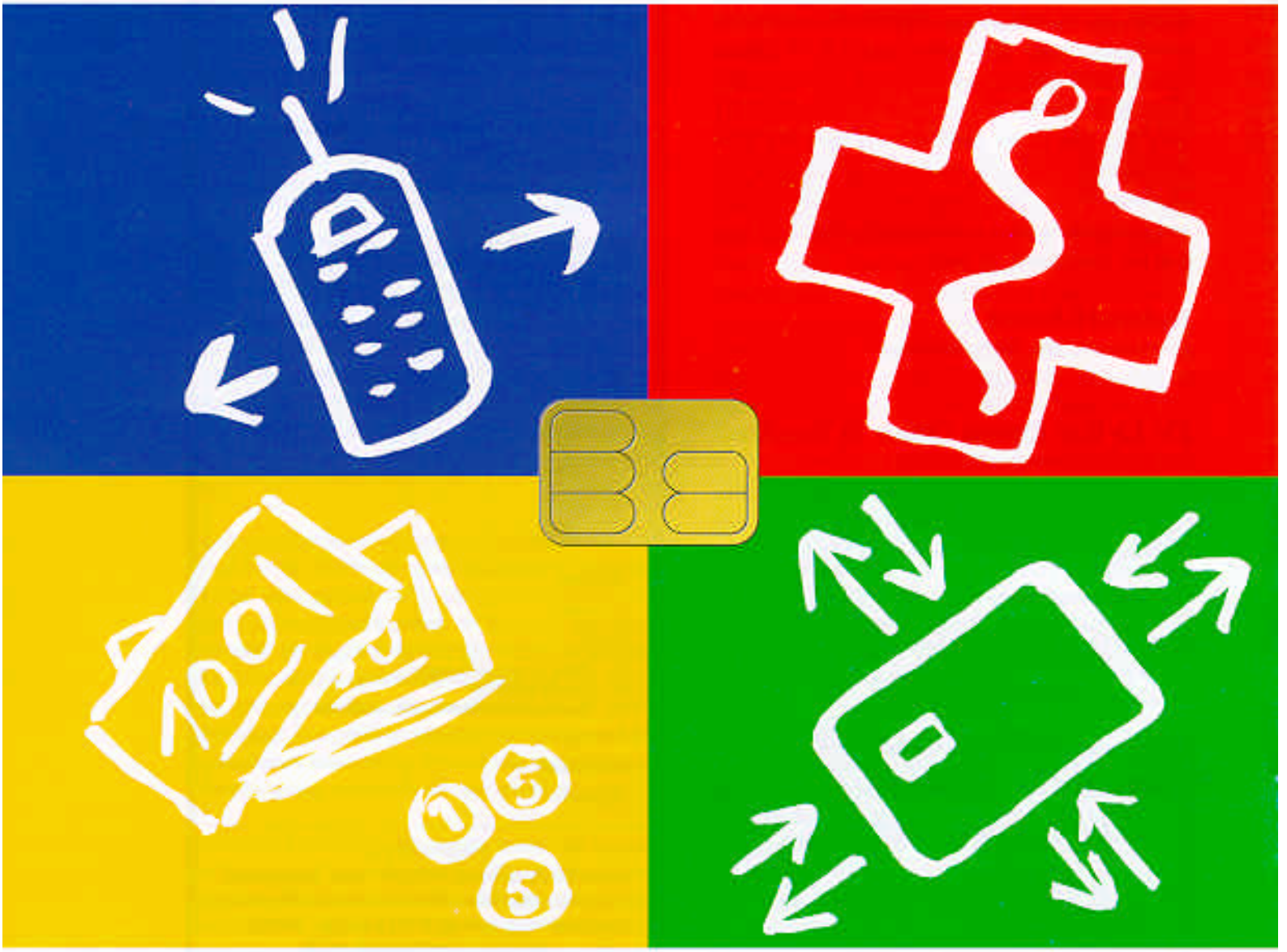

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