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Smart Card News

Smart Cards, SIM, Biometrics, NFC and RFID

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Dear Subscribers,

Just back from a couple of hectic days at the 3GSM conference and exhibition held in Barcelona, Spain. Two days is definitely not enough time if one really wants to get around this enormous site, I'm not even sure that the four days of the event is enough time. The exhibiting companies must spend a small fortune having their stands at this show, some bigger companies such as Alcatel have two story buildings constructed inside the exhibition halls, the only problem is that you can't get in unless you are invited which suggests you are already a customer....am I missing something? However the Smart Card companies were well represented with Gemplus, Axalto (two separate stands), Geisecke & Devrient, and Sagem Orga all very prominent and approachable!

The most interesting debate going on at the show was all about the Mega SIM, not whether its going to happen, that's now a given, but which standard is going to win for the interface to the phone, MMC or USB.and does the large memory SIM mean that you no longer need a separate MMC card in the phone.

The MMC interface is now widely tried and tested whereas USB is probably a year or two away but my feeling is that companies will develop both products until ETSI makes up its mind, hopefully at its next meeting at the end of March. I suspect the last thing anyone wants is options which will delay the market. David Everett will be enlarging on this topic in next months newsletter. The big thing at the exhibition was live TV on the phone, Steve Balmer (Microsoft's CEO) was full of their newly announced cooperation with Virgin Mobile due to be launched later this year. I can't imagine sitting down (standing up?) and watching a live TV broadcast but I can understand the sports enthusiast or business man who needs the latest news, when in far distant lands with no communications but their mobile phone subscribing to the service or the gadget freak who must have the latest in-thing. Apparently music videos are also very popular which leads one to think that the SIM is going to have a role here as the controller of Digital Rights Management and that brings the mobile operator back into the game. It seems the Operators have woken up and realised that since the SIM is the only bit they control in the handset then they had better do more with it, now what's that old saying, something about use it or lose it!

Countdown to UK EMV Deadline

In the UK the magnetic stripe and signature has been used on plastic payment cards since 1972. Over the last three years the UK banking and retail industries have been working together to implement a new fraud fighting technology for debit and credit cards in the UK. This technology, based on Europay-Mastercard-Visa specifications for chip-based payment cards, involves a customer entering a four-digit PIN instead of signing their name when paying for goods and services. It has been implemented to combat the rising level of fraud committed on UK debit and credit cards.

Credit and debit card fraud is a big issue. It has increased by more than 30% a year in the UK and more than £504 million of fraud was committed on UK cards in 2004, all of it picked up by banks and building societies. That is more than £1 million worth of card fraud committed every day in the UK. A fraudulent transaction occurs every 8 seconds. The Chip and PIN Programme in the UK is part of a worldwide initiative. Fraud on cards is a global problem and the UK is one of the first to put chip and PIN in place. The system is proven, and in France a similar PIN system has seen an 80% reduction in fraud since its introduction over ten years ago. UK card issuers and retailers have invested over £1 billion to migrate from magnetic stripe technology to microchip technology in the UK's Chip and PIN Programme. The majority of the UK's 54,000 ATMs, 140 million debit and credit cards and 860,000 point-of-sale terminals will be upgraded.

For the UK, the introduction of Chip and PIN has already significantly reduced card fraud with a £36 million reduction in the first half of 2005 according to APACS. Chip and PIN has also brought other benefits such as new applications for secure card payment and faster queues at checkouts. "The lead that the UK has taken with the full introduction of PIN verification for chip card transactions is certain to increase pressure on other European countries to step up their migration process. With only 33% of card terminals in European countries able to meet the EMV standard, retailers in non EMV-ready countries will now be liable for any fraud from transactions made with UK chip cards." Said Alan Moss, Director of Marketing for the e-Transaction activities of Thales.

In October 2005 the UK Chip and PIN Programme announced that after Valentine's Day 2006 (14 February 2006), all UK chip and PIN cardholders must use their PIN to be sure of being able to pay with their chip and PIN cards. After this date, if a retailer does not have a chip and PIN acceptance device and the use of such a device could have prevented the fraud from occurring, the retailer may bear the full cost of a fraudulent transaction instead of the banks/building society. This will depend upon the terms and conditions between that retailer and its acquiring bank.

It is expected that all card-accepting merchants will adopt the chip and PIN system. Those who do not are likely to attract card criminals who will target the weakest links. The UK Chip and PIN Programme has released the latest chip and PIN rollout figures. The figures show that by the end of 2005, 99% of cardholders in the UK (41.5 million cardholders) had at least one chip and PIN card in their wallet. In total 127 million chip and PIN cards have been issued since the beginning of the rollout in October 2003 (64 million debit cards and 63 million credit cards).

Over 80% of tills in the UK are now upgraded to chip and PIN and since the beginning of the rollout 770,000 tills in shops, pubs, restaurants and petrol stations have been upgraded to accept chip and PIN cards. During 2005 more than 2.85 billion PIN verified transactions were made in the UK. During December alone 98 per cent of all chip and PIN debit card transactions and 92 per cent of chip and PIN credit card transactions were made using a PIN. This equated to 125 PIN verified transactions taking place every second during December.

Smart Cards

Key Elements of US RT Program

The US Transportation Security Administration (TSA) has announced several parameters for a nationwide private sector Registered Traveller (RT) program, including the biometrics to be used for identification purposes and the redress process for individuals who are denied access to the program. The Registered Traveller program is envisioned as a means to accelerate the screening process at participating airports for passengers who voluntarily choose to enroll in the program. In order to give industry the opportunity to begin offering Registered Traveller programs later this year, TSA is directing RT program providers to collect 10 fingerprint images from each applicant. This biometric information will be used to verify participant identity at RT checkpoints. These biometrics, which are in widespread use today, provide exceptionally high levels of accuracy. With 10 fingerprints on the participant's Smart Card, the likelihood that identity can be accurately confirmed is improved.

UK ID Card Plans are Setback

The UK government's plans to introduce a national identity card has suffered a recent setback, with the House of Lords voting to force the government to provide more details on the cost of the controversial scheme. The vote, carried by a majority of 81, could hold up the introduction of the UK ID card. The government said it had already explained the costs and benefits, and a new probe would be costly and cumbersome. The Lords also inflicted two other defeats on the bill, voting to demand a secure and reliable method of recording and storing citizens' personal data, and to change wording on the use of cards in controlling access to state benefits. The government says existing laws are enough to ensure the data is safe.

NZ Smarter then Australia

New Zealand (NZ) is ahead of Australia in the introduction of a new generation of Smart Cards according to VISA Australia. VISA has announced that 36,500 chip terminals have been deployed in New Zealand with more than 300,000 chip transactions occurring per month. VISA believes most NZ acquirers will be accepting chip Smart Cards by the end of 2006. In Australia, the new Smart Cards are still to be rolled out with the banks facing an investment bill of between $300 million to $500 million.

Smart Cards for US Parking Industry

Americans have been looking for the right change to park their vehicles ever since 1935, and the parking industry has been seeking the most cost-effective and convenient collection method just as long. Both the $17 billion parking industry and the American public are about to experience a sea change in payment using Smart Card technology. According to industry estimates, at least 75% of the tenders for payment in 2004 and 2005 have required both coin and a contact Smart Card.

In the transit sector, 9.6 billion mass transit trips were taken in 2004. In cities such as Washington D.C., Philadelphia, Atlanta, Los Angeles and New York, an estimated 15 million Smart Cards and over 20,000 payment processing devices will appear within the next two years with the introduction of this technology. This investment is helping to push the adoption of similar payment approaches in the parking industry.

Israel's First EMV Deployment

Leumi Card, an Israeli credit card company, has chosen Aconite to support its migration to EMV. The company has decided to retain its existing system and add Aconite's platform independent solutions to its existing infrastructure. Aconite began the EMV migration project in the summer of 2005, the first phase was completed in November 2005 and roll out is planned in the first half of 2006. Leumi has also signed a contract with Sagem Défense Sécurité to supply Smart bank cards. The Sagem solution chosen by Leumi consists of a new generation of Smart Cards that complies with EMV banking standards and contains a DDA (Dynamic Data Authentification) cryptoprocessor.

Smart Cards for all Thai's by 2008

Thailand's Interior Minister has announced that the 12 million Smart Cards still remaining in Thailand's smart ID card roll-out will be issued by the end of August 2006, while The Ministry of Information and Communication Technology (ICT) will take care of the procurement of new Smart Cards.

Thailands Prime Minister Thaksin Shinawatra has announced that they expected all Thai adults would be able to carry the cards by 2008. A further round of bidding for production of another 13 million cards would be held later, he said, for cards which should be produced for use by the end of this year.

Axalto USIM for DoCoMo

Axalto has been selected by DoCoMo to supply advanced USIM cards for DoCoMo FOMA (Freedom Of Mobile Multimedia Access) 3G services. With this card, subscribers of DoCoMo - Japan's largest mobile operator - will be able to enjoy connecting with the PDC network when in Japan, as well as internationally with W-CDMA and GSM networks when overseas. Designed to ensure the continuity of service for DoCoMo's subscribers regardless of the network technologies, the Axalto USIM will also support DoCoMo's completion of its migration to the third generation environment.

Smart ID Cards to Be Ready by 2008

The Korean Home Affairs Ministry has announced that electronic residential registration cards with integrated circuit chips will make their debut in 2008. The new ID cards will contain personal certification for online banking purposes, an ID number, health insurance and information on any disabilities. It will also be recognised when electronic voting goes on trial the same year. The new card will also function as an online ID. The card will display the holders name in Korean and English, photo, date of birth, gender and when and where the card was issued, but sensitive identification numbers will be contained on the IC chip.

Supercom Wins Asian Card Project

SuperCom Ltd has been engaged by Green Science International Ltd., a distributor of health products in Hong Kong, China and Asia Pacific, to customise its e-Living Contactless Smart Card System and integrate it into Green Science's Retailer CRM (Customer Relationship Management) Membership and Loyalty solution. The first stage has began implementation and the remainder of the order is expected to be completed by the second quarter of 2006 as soon as the first stage is operational.

Middle Eastern Amex Gold Card

American Express Middle East launched the new American Express Gold Credit Card in the UAE. The launch is part of a regional campaign introducing American Express Middle East's first chip-enabled Smart Credit Card to the region. The new Gold Credit Card features 'ID Keeper' which allows Cardmembers to securely store their favourite website addresses, personal details, passwords, user names and autofill online shopping order forms.

First JCB Smart Card Roll Out in Korea

Chohung Bank, a Korean bank, has launched the Chohung 365 BC JCB Smart Card compliant with the global EMV standard. This is the first full-scale launch of a JCB Smart Card in Korea. The new Chohung 365 BC JCB Card leverages chip technology to offer a range of services including BC miles redeemable for tickets on all airlines in Korea, the Korea Train eXpress (KTX) mileage program, and the OK cashback program, which is a major loyalty program affiliated with many national chain stores.

Texas Expands Lone Star Card Scheme

The Department of State Health Services (DSHS) in Texas, USA, are expanding the use of an electronic benefits Smart Card for purchases made by WIC clients. WIC, stands for Women, Infants and Children and this Smart Card scheme provides low-income pregnant, postpartum and breast-feeding women, and infants and children with nutritious foods, counselling, and referrals to health and other social services at no charge. The Lone Star Card is produced by Gemplus and issued through First Data Government Solutions.

New US Mobile Payments Solution

Vesta Corporation and Axalto have teamed up to offer prepaid wireless customers with new payment capabilities directly from their mobile phones. This enables any North American GSM carrier to offer customers the ability to make payments via credit card, debit card or direct withdrawal from a cheque issuing account through a feature directly on the phone. Payment capability is embedded in the SIM card through simple and intuitive drop down menus, creating a mobile transaction environment that is highly secure, can be remotely managed and is tightly integrated with other features on the handset.

Contactless Technology for Torino

ASK cards and tickets are being used by Gruppo Torinese Trasporti (GTT) and Società Italiana Traforo Autostrade del Frejus (SITAF) to drive a new ticketing and fare collection system during the 20th Winter Olympic Games in Torino, Italy. GTT lead the project to provide a payment system in the Torino region using ASK's TanGO-based CT4002 contactless Smart Cards and C.ticket contactless paper tickets. ASK's Smart Cards will act as a single contactless card for both public transport and highway toll payments in and around Torino.

Sagem Orga Wins Polish Contract

Poland's state-run printing works PWPW S.A. has commissioned Sagem Orga to supply 40,000 certified tachograph Smart Cards. Sagem Orga will also provide concept design and consulting services for the introduction of a digital tachograph system in Poland. Sagem Orga will work in a strong alliance with IBM Poland and provide consulting, design a concept for implementation of type approval and practice statements, and prepare a crypto concept. The aim of the new system is to increase road safety throughout Europe.

60 Million ID Cards for Nigeria

60 million Nigerians are to be issued with a biometric National ID card. According to local newspaper reports the ID cards will be embedded with fingerprints and will be distributed in 2007. So far 15 million Nigerians have been issued with ID cards. By the first quarter of 2007, the Nigerian government hopes to have registered and issued the identity card to every eligible Nigerian.

First EMV Smart Card for UAE

Network International has signed a new agreement with Bank of Sharjah to facilitate its personalisation service for their Smart Credit Cards. Bank of Sharjah is one of the first national banks to launch chip-enabled credit cards in the United Arab Emirates.

China Vision Wins ID Card Project

China Vision has won a contract worth approximately $3.7 million for use in China's second-generation identification card project. Public security bureaus in five Chinese provinces have between them ordered 2,000 image capturing systems to be delivered and installed by the end of March 2006. ChinaVision has already signed Smart Card reader distribution agreements within 18 provinces and cities in China and aims to expand its reach into other provinces. Chinese officials expect to issue approximately 80 million of the second generation ID cards by 2008.

Datastrip Expands into UAE

Datastrip has opened a new regional sales office in United Arab Emirates (UAE). The new office joins Datastrip Limited's headquarters in the UK in serving customers around the world.

Axalto Finds the Way to Amarillo

Cellular One of Amarillo, Texas has chosen Axalto to provide Subscriber Identity Module (SIM) cards and managed services for its mobile network. With its managed services, Axalto designed, implemented and now operates systems that provide over-the-air (OTA) SIM and device management for Cellular One. This approach gives subscribers access to the latest applications and services while greatly reducing costs and complexity for Cellular One. Cellular One is able to provide SIM and device updates seamlessly over the air and activate new services for subscribers. Axalto is also providing SIM cards to replace all of Cellular One's currently deployed cards.

Visa Surpasses Contactless Milestone

Visa has announced it has reached a significant milestone in the acceptance of Visa Contactless by surpassing 20,000 Visa Contactless acceptance locations in the United States. Significant consumer and merchant demand for contactless payments has made the Visa Contactless platform one of the most rapidly adopted payment innovations in Visa history. To date 4 million Visa-branded contactless payment cards have been issued worldwide - underscoring the continued migration away from cash.

Turkcell Surpasses SIM Milestone

Turkcell, a turkeish mobile operator has surpassed the 2.5 million milestone for subscribers using Axalto's Simgo application, just one year after its roll out. With Simgo's dynamic service management capability, Turkcell makes it very simple for users to access Value-Added Services (VAS), triggering significant revenue increase for the operator.

Lipman Terminals for ICBC

Lipman Electronic Engineering Ltd has supplied $7 million worth of customised NURIT 8320 and 8000 Point of Sale terminals and NURIT 222 PIN Pads to the Industrial and Commercial Bank of China (ICBC). These terminals will be used in a joint project between ICBC and China National Petroleum Corporation (CNPC) to equip more than 8,000 CNPC petrol stations with Lipman terminals, allowing CNPC customers to enable payment at the pump for the first time in China's history. This project, which comes following a successful 12 city pilot program, is one of the largest POS terminal deployments in China to date. Product shipments began during the second half of 2005, with deliveries expected to continue through the first quarter of 2006.

Ingenico Terminals for NTT Data

Ingenico is to supply payment terminals to NTT-DATA Corporation, Japan. NTT DATA operates CAFIS / INFOX - NET, which is the largest financial transaction acquiring network in Japan. Currently approximately 300,000 terminals are installed in a number of merchant environments throughout Japan including department stores, various retailers and restaurants. INFOX - NET and NTT DATA are targeting to have a total of 400,000 terminals installed by the end of 2006.

Taxis use Chip and PIN Terminals

Thyron Systems have installed a large number of Chip and PIN online credit card payment terminals into the licensed "Black Cabs" that provide the taxi service from London's Heathrow airport to the city and provinces. The choice of selecting Thyron's PayCell MPT500 GPRS terminals for the Heathrow taxis was made by JOURNEYPAY on behalf of HALTPAY, a company dedicated to providing a specialised service for the operation of credit card facilities for taxi drivers that operate at the airport. The terminals are being continually rolled out to the taxi drivers on a day-to-day basis by HALTPAY to increase the number of taxis that can take card payments.

Biometrics

E-Passport Testing at US Airport

A live test of e-Passports, that contain contactless chips with biographic and biometric information and the readers that are capable of reading these e-Passports, has began at Terminal G at San Francisco International Airport (SFO), USA. This test is a collaborative effort between the United States, Australia, New Zealand and Singapore that will run through April 15, 2006. Participants include citizens of Australia and New Zealand who have been issued the new e-Passports, Singapore Airlines crew and officials holding trial e-Passports and U.S. diplomatic and official e-Passport holders.

The test will assess the operational impact of using new equipment and software to read and verify the information embedded in the e-Passports. Participants will present their e-Passports when arriving in the United States at SFO, at Changi Airport in Singapore or at Sydney Airport in Australia.

Keycorp for Hong Kong ePassport

Keycorp Limited has been selected as the exclusive supplier of MULTOS technology to the consortium awarded the tender for ePASS, Hong Kong's ePassport project. Hong Kong Immigration Department awarded a tender for ePASS to Unihub Limited, which is heading a consortium of suppliers, including Keycorp, who will develop and deliver the new ePassport system. The project is due to commence in 2006

Biometric ID Card for Columbia

La Registraduria Nacional del Estado Civil (RNEC) of Columbia renewed its confidence in Sagem Défense Sécurité by signing a 366.7-billion-peso contract ($159 million) to modernise and optimise the country's identification systems and civil registry. The contract calls for the company to continue upgrading Columbia's identity documents. Sagem Défense Sécurité will provide a biometric ID card and 'homogenise' and update the civil registry. This program constitutes Latin America's largest biometric ID card project to date.

Pay By Touch Aquires BioPay

Pay By Touch has completed the acquisition of BioPay LLC for $82 million in stock and cash. BioPay is a biometric services provider with more than two million enrolled consumers that has authorised more than $7 billion in biometrically-authenticated transactions. The purchase fuses each company's strengths to deliver new capabilities and solutions to retailers and consumers. Both companies' clients and consumers will now have access to the combined suite of biometric product offerings. Pay By Touch has also closed more than $60 million in new financing through its sale of Series C Preferred Shares. The company continues to prove its business model to the financial community, raising more than $190 million during the past three months.

NIJ Awards Grant to IBG

The US National Institute of Justice (NIJ) has awarded the International Biometric Group (IBG) a research grant to develop multiple-biometric systems based on fusion of fingerprint, face recognition, and iris recognition technologies. The $431,556 grant was awarded under the NIJ 2005 Sensor, Surveillance, and Biometrics Technologies for Criminal Justice solicitation. The grant for Efficient, Field-Optimised Multimodal Biometric System research will support development of high-accuracy, high-throughput multimodal biometric systems for justice applications.

Biometric Technology for US DHS

A4Vision Inc. has announced that the Department of Homeland Security's (DHS) Federal Protective Service (FPS) has implemented A4Vision's 3D biometric facial recognition technology at their Region 10 headquarters. A4Vision's Vision Access 3D Face Reader, a three-dimensional (3D) facial identification/verification reader with active feedback, has been securing access to the Regional Director's entrance of their DHS FPS Headquarters building since October 2005. The implementation serves both to access and secure the building's second floor entrance and as an assessment site for A4Vision's facial recognition products.

JV in China for Precise Biometrics

Precise Biometrics AB and Smart Unicorn Group have entered into a joint venture in China. The companies intend, through the transfer of technology and joint development work, to integrate Precise Biometrics' biometry and encryption technology into mobile network synchronisation and device management solutions for mobile phones, mobile terminals and computers developed by Smart Unicorn Solutions, an ICT business unit of Smart Unicorn Group.

Financial

Gemplus Reports Strong 2005 Results

Gemplus reported their 2005 fourth quarter revenue was up 7.9% to 261.7 million euros compared to the same quarter in 2004 (242.5 million euros). This revenue increase was driven by the Setec acquisition. On a geographical basis, adjusted revenue was up 0.8% in the Americas and down 0.9% in EMEA4. In both regions, strong growth in ID & Security and Financial Services was offset by a decline in Telecom revenue. In Asia, revenue was down 6.6%. In their full year 2005 financial review Gemplus recored revenues of 938.9 million euros which is up 8.5% from 2004 figures (865.0 million euros).

Axalto Sees Record Figures

Axalto has reported that its full year 2005 revenue came in at $992 million, a 3% increase at historical and constant exchange rates over the $960 million revenue recorded in the full year of 2004. Axalto posted fourth quarter 2005 revenue of $267 million, a 5% reduction at constant exchange rates compared with last year's comparable period, which was the strongest quarter in Axalto's history.

Revenue in the Cards segment came to $250 million. Full-year growth in revenue stands at 4% at $917 million. During the fourth quarter Axalto delivered over 130 million microprocessor cards, a 21% increase year-on-year. Total shipments for the full year amounts to 440 million units, a 24% growth compared with the 2004 volume. The fourth quarter and total year microprocessor cards volume performances both set new records for Axalto.

Oberthur's 4th Quarter Results

Oberthur Card Systems has reported that its fourth quarter sales amounted to 137.1 million euros, an increase of 1.1% compared to the outstanding 2004 Q4. During the last three months of the year, the company delivered more than 58 million microprocessor cards compared to 44 million in Q4 2004, a 32.2% increase on a year-to year basis. In the mobile communications market Oberthur has seen a 58.3% growth in volumes, - 35.4 million shipped SIM cards during the quarter versus 22.3 million for the same period in 2004. In the payment market, particularly strong sales in the fourth quarter 2004, up 20% year-on-year, led to a comparative decrease in sales in Q4/05.

With 16 million cards delivered, vs. 18.8 million the previous year, sales (23.8 million euros) decreased by 27.8% on a year-on-year basis. Sales in the Identity and Security segments reached 12.2 million euros, increasing 34.1% compared to Q4 2004. This growth comes mainly from Pay-TV cards and identification cards in Turkey. Revenues for the full year 2005 were up 11.3%, at 500.8 million euros. Activities were sustained in all business sectors and volumes of delivered microprocessor cards reached an historic level of 194.7 million units, a 31.3% increase.

Ingenico See Growth in Revenue

Ingenico Group have announced they have booked consolidated (unaudited) revenues of 437.4 million euros in fiscal year 2005 (up from 427.4 million euros in 2004), which reflects an annual growth rate of 3.8% (on a like-for-like basis). Whilst revenues were fairly stationary in the first half of 2005 (207.4 million euros), due essentially to delivery problems, they rose to 230 million euros (unaudited figures) in the second half (vs. 222 million euros in the second half of 2004).

Radio Frequency Indentification

1.3Bn RFID Tags will be Sold in 2006

Analysis by Research and Markets in their report "RFID Forecasts, Players & Opportunities 2006 - 2016" shows that cumulative sales of RFID tags for sixty years until the beginning of 2006 totalled 2.4 billion, with 600 million tags being sold in 2005 alone. In 2006, they expect 1.3 billion tags to be sold, with 500million RFID smart labels for such diverse markets such as baggage and passports to contactless payment cards and drugs. In the short term large "closed loop" markets requiring high value RFID will remain very profitable and companies will seek to position themselves as the leader in hardware and integration in different vertical market segments. Challenges with tag yield versus cost, frequency acceptance, specification creep and required performance levels are some of the key issues that are being resolved to grow the RFID market exponentially over coming years to be almost ten times the size in 2016 than it will be in 2006.

In 2016, they see the value of the total market including systems and services to rocket to $26.23 billion from $2.71 billion in 2006. This includes many new markets that are being created, such as the market for Real Time Location Systems using active RFID, which will itself be more than $6 billion in 2016. Such growth will be driven by the tagging of high volume items - notably consumer goods, drugs and postal packages - at the request of retailers, military forces and postal authorities and for legal reasons. In these cases, the primary benefits sought will be broader and include cost, increased sales, improved safety, reduced crime and improved customer service.

Raflatac and UPM Rafsec Merge

Raflatac and UPM Rafsec have merged to form a new business entity, UPM Raflatac. Following the merger, UPM Raflatac's product and service offering comprises both pressure sensitive labelstock and RFID. The rebranding of Raflatac and UPM Rafsec reflects UPM's strong commitment to the labelstock and RFID business areas and the combining of UPM Rafsec under the UPM Raflatac brand. UPM Raflatac will be more clearly part of UPM as a whole.

On the Move

Westermann to Leave Infineon

Rainer Westermann, Corporate Vice President Communications is leaving Infineon Technologies. Westermann has been responsible for the entire corporate communications at Infineon including PR, Marketing Communications, Government Relations and Internal Communications. Dr. Wolfgang Ziebart, CEO and President of Infineon Technologies, will take over his duties temporarily.

ActivIdentity Appoints New CFO

ActivIdentity has strengthened its senior management team with the appointment of Mark J. Lustig as Chief Financial Officer, reporting to Chief Executive Officer Ben C. Barnes.

NBS Announces Executive Change

NBS Technologies Inc has appointed Bryan Hills as the company's new Chief Financial Officer. Bryan joins NBS from Cygnal Technologies Corporation, a provider of wired and wireless communications networks.

UPEK Elects New Director

UPEK, Inc has elected H. Raymond Bingham to its Board of Directors, effective immediately. In addition to the operational and executive management experience Mr. Bingham will bring to the board of UPEK, he will serve as the independent financial expert and Chairman of the company's Audit Committee.

ViVOtech on the Rise

ViVOtech has announced the addition of three key executives to help the company position itself to capitalise on the enormous opportunities in the payment market. Peter Slocum has joined the company as senior vice president of engineering, responsible for overseeing engineering growth, quality and customer support, and guiding the development of new products and services. Todd Ablowitz is appointed to the position of senior vice president of sales, responsible for driving global sales and business development. David Fiore has been named as chief financial officer (CFO), responsible for all financial operations

Terminal Velocity

By Jason Smith, Staff Reporter, Smart Card News Limited

Jason Smith

Over the past several decades, consumers worldwide have increasingly utilised card-based payment methods, such as credit, debit and gift cards, to replace cheques and cash. Payment by card requires the use of a Point of Sale (POS) terminal capable of reading a cardholder's account information from the card's magnetic stripe or chip and combining this information with the amount of the sale entered via the terminal keypad. The terminal electronically captures and securely transmits this transaction information over a communications network to an authorised computer data center and then displays the returned authorisation or verification response.

Payment cards are issued to users by a variety of organisations or card issuers such as banks, building societies, financial services companies and retailers. The major payment card schemes include American Express, Diners Club, JCB International, Maestro, MasterCard and Visa. These schemes are the operators of the payment card systems that govern transaction processes and transmission of money through the card network. Terminals to handle these payments require an extremely high level of reliability and security, as even an apparently small system failure or a security breach can have extremely serious consequences. In the UK alone total spending on payment cards outstripped cash spending for the first time ever in 2004. According to APACs, the UK payments association, there were 141 million multi-function payment cards in issue at the end of 2004. There were also 66.8 million debit cards, 74.3 million credit/charge cards, 20 million personal debit cardholders and 30.6 million credit cardholders in issue. Eurosmart estimates that around 330 milllion microprocessor cards and 24 million memory cards had been shipped by the end of 2005 for use within the financial industry. This is a rise of 18% in the number of units shipped to the same industry in 2003.

According to Frost & Sullivan estimated revenues of the terminal market in 2003 were $2.1 billion, with shipments totalling 7 million units. Frost & Sullivan also reports that the terminal market is highly concentrated with the top four terminal manufacturers accounting for approximately 70% of terminals shipped in 2003. The remaining 30% of terminals shipped is spread among 40 manufacturers who compete on either a regional or local country basis, within specific market segments or with a limited range of products and services. The markets four main players are;

Ingenico: Founded in France in 1980 by Jean-Jacques Poutrel Ingenico still has its headquarters located in France. The company employs 1200 people, with a presence on every continent, managing 22 subsidiaries/offices and working with 100 distributors around the world. Ingenico has some 10 million terminals shipped in over 90 countries. The company annually delivers 1.5 million payment terminals worldwide. Its customers include some of the world's best known retail brands, including Aldis, Auchan, BP, Carrefour, McDonald's, Pizza Hut, Safeways, Sainsburys, Toys 'r' Us and Walmart, and its payment solutions have been chosen by every major UK bank. In 2004, Ingenico booked 427 million euros in sales, up 20% over the previous year and was the number-one leader with 26% of the global market for secure payment terminals.

In 2005 their revenues increased to 437.4 million euros. This reflects an annual growth rate of 3.8% (on a like-for-like basis). Ingenico has designed a complete range of multiple application, highly secure PIN pads and payment terminals in its portfolio of offers. Ingenico's new generation terminal includes the i3300, i5100 and i7700. Also part of this terminal family is a wide range of PIN pads including the i6200 and the i6400. In fact, the iSeries accounted for 70% of total terminal deliveries in 2004, whereas its share in consolidated sales was only 3% in June 2003.

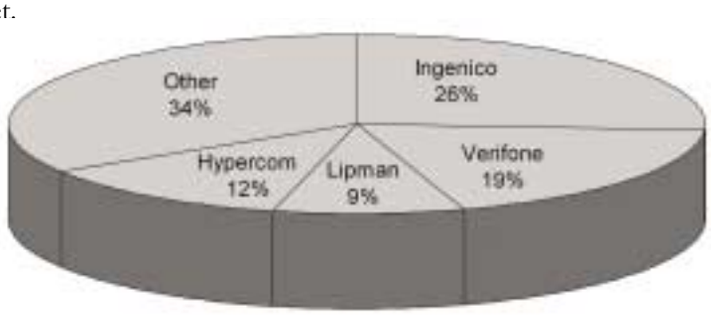
Verifone: Founded and incorporated in Hawaii on April 14, 1981, VeriFone was oringinally a division of Hewlett-Packard. In its history Verifone has seen its ownership shift twice. Firstly they where acquired by Gores Technology Group and later sold to GTCR Golder Rauner. Today VeriFone is now a public company with a global network of 24 sales and marketing offices and 18 development centers in North America, Latin America, the Caribbean, Europe, Middle East, Africa, Asia and the Pacific Rim.

In 2005 Verifone's net revenues, for the fiscal year ended October 31, 2005, were $485.4 million, an increase of 24% over net revenues of $390.1 million for the comparable period of 2004. Verifone currently own 19% of the total global terminal market. Verifone main terminal product profolio consists of mainly the Vx Solution range and the Omni 3700 family. The Vx family includes the Vx570, 510 and 610. VeriFone's Omni 3700 family consists of the Omni 3740, Omni 3750, Omni 3730 and the Omni 3730 LE.

Hypercom: Founded in Australia in 1978 as a provider of communications products. The company switched to transaction products in 1982. In 1983, Hypercom expanded into Asia and, in 1987, it established a US subsidiary in Phoenix, Arizona. In 1990, the company relocated its headquarters to Phoenix. Hypercom expanded into Latin America in 1991 and established a European presence in 1996 to take advantage of the increasing use of credit and debit cards in those markets. Their main regional headquarters are located in Australia, Brazil, China, Sweden and the United Kingdom. In 2004 Hypercom recorded a revenue of $255.2 million, an increase of 10% over 2003 ($231,514). Hypercom Corporation is currently the third largest global terminal provider with 12% of the terminal market.

Hypercoms main terminal offering comes from the Optimum range. This family of products includes the L4100, signature capture and PIN entry card payment terminal; the T4100, a 32-bit desktop terminal for multi-application; the T2100, a handover desktop terminal; the M2100, a mobile terminal; and the P2100, a EMV-compliant PIN pad for integrated retail environments. Hypercom have also recently introduced a pair of new electronic payment terminals that offer lower-cost alternatives to the company's Optimum. The Optimum L4200 and higher resolution L4250 with signature capture capabilities.

Lipman: Founded and incorporated in 1974 under the laws of the State of Israel where its corporate headquarters and R&D facilities are located. Lipman also maintains offices in the US, United Kingdom, Turkey, China, Spain, Finland, Russia, Italy, Canada, Brazil, Argentina, Mexico, Australia and India. Lipman's range of electronic payment terminals are generally sold or leased under their NURIT brand name. Lipmans revenues increased 53.4% to $180.6 million in 2004 from $117.7 million in 2003. In a major move to further expand its global presence and boost its world market share, Lipman has recently completed the full acquisition of the UK-based company, Dione Ltd. Dione is a developer of card transaction terminals. From this acquistion Lipman increased its product porfolio by incorporating the Xpress, Xplorer and Xchecquer terminal ranges of their new Dione subsidiary. Also approximately $19.7 million of revenue has been generated by Dione following its acquisition. This increase in revenue gives Lipman a market share of 9% within the terminal market.



The secure electronic payment market is expanding and has recently seen a surge in growth. This growth has been driven by several factors. One of the biggest drivers has been the markets adoption of the EMV and PCI security standards. EMV is a set of global specifications established by Europay, MasterCard International and Visa International (EMVCo). The move to comply with EMV specifications has significantly promoted terminal sales growth. Recently countries such as United Kingdom, Turkey, Italy, Australia, Spain and Brazil, have migrated their payments cards to incorporate EMV "Chip and PIN" standards. Currently 170 million of the 3 billion bank cards currently in circulation around the world are now EMV cards. By the end of 2010, this figure should increase to 1 billion. This new adoption of EMV has helped boost sales of new EMV-compliant payment terminals around the world.

According to estimates by Ingenico, the market for secure electronic transaction systems was worth 3.2 billion euros in 2004 with payment (terminals and services) accounting for 78% of this total. In 2004, Europe and North America accounted for approximately 75% of all payment terminals sales. They estimate that by 2008, the global electronic transaction market will be worth 3 billion euros. Visa International and MasterCard International have also recently agreed to a common methodology for how PIN entry devices (PEDs) are tested and approved. These important initiatives, called PCI (Payment Card Industry) standards, supersede Visa International and Mastercard International's respective standards for PED security. PCI standards will drive an upgrade of the entire installed base of PEDs over time.

Another driver is the rise of new technologies within the terminal market that are rapidly gaining acceptance. Contactless technology, in particular Radio Frequency Identification (RFID), creates a convenient way to pay for goods and services. It can deliver extremely fast transaction times, reduce waiting times and eliminate the need for paper receipts. Wireless electronic payment solutions are also being developed to increase transaction processing speeds and mobility for electronic transactions.

Wireless terminals provide consumers with additional security by allowing them to maintain control of their payment card at all times. Additionally, the cost per transaction using wireless terminals are lower than that of wired terminals in certain regions burdened with high telecommunications costs such as Europe and Asia/Pacific. It also enables communications in those regions lacking an established landline telecommunications infrastructure. Using transmission control protocol/Internet protocol (TCP/IP) for payment settlement because of the industry's ongoing quest for faster payment transaction rates has improved terminal sales. TCP/IP technology for payment terminals offers substantial competitive advantages such as always-on capability, faster speed, and versatility. Emerging regions and market segments have also greatly effected the terminal market. Increases in the cardholder base and the build out of payment system infrastructure in China, India, Russia and other developing countries will result in terminal sales growth over the next several years.

The world of electronic payment as we see it is constantly changing and evolving. Open Platform, EMV and wireless are just some of the emerging technologies and standards that will transform the industry. Smart Cards are proliferating and buying over the Internet is now common. With all this happening now, retailers and service providers need to be prepared for a period of major change.

Events Diary

March 2006

07 - 10	IC Card World - *Tokyo - www.iccard.jp*
14 - 15	Citizen Cards Conference - *London Marriott Kensington*
20 - 22	Prepaid Mobile - *Prague Czech Republic*
21 - 23	The 14th Convergence India 2006 - *New delhi, India - www.convergenceindia.org*
23 - 24	Smartcard ID Summit - *London - www.informa.com*

April 2006

25 - 27	SIM 2006 - *Corinthia Towers, Prague - www.informamedia.com*
25 - 27	The 3rd IMS World Forum 2006 - *Barcelona - http://click.cminteractive.com*
25 - 27	Infosecurity Europe 2006 - *Grand Hall at Olympia, London - www.infosec.co.uk*
26 - 28	Payment World Asia 2006 - *Singapore - www.worldofcards.biz/2006/pwa_SG*

May 2006

2 - 4	CardTech/SecurTech 2006 - *San Francisco, USA*
6 - 8	The CardEx International Conference - *Cairo, Egypt - www.egytec.com/home.htm*
17 - 19	8th Smart Cards + Smart Label (RFID) Expo- *Beijing , China - www.scfc.org.cn*
22 - 23	Cards Middle East - *Al bustan Rotana, Dubai - www.worldofcards.biz/2006/cme*

Trends in Secure ID Technology

By Gil Bernabeu, Technical Director, GlobalPlatform

Gil Bernabeu

2005 saw the first deployment and pilots of e-passport schemes based upon the International Civil Aviation Authorities (ICAO) specifications. Designed to enhance both global border control and homeland security, the new standards will tighten border security, reduce card counterfeiting, and provide officials with detailed information on a rapidly changing and migrating population. As the industry has now formally adopted ICAO specifications as the standard for the integration of contactless smart card chips and biometric information into passports, efforts have been focused on creating a standardized reader/ passport reading interface to support worldwide access across borders.

Governments globally are set to implement schemes based on an ICAO data definition that facilitates authorized access to information, in a consistent language. However, the aim of creating an environment in which a citizen can submit a visa application, and then receive the visa via a chip in their passport, will only be realised once every country agrees to a standard for application management.Encouraged by the e-passport acceptance in their country, Governments are eager to secure a unified infrastructure for an interoperable ID program. By offering additional services outside the conventional ID application, such as healthcare and finance, governments intend to demonstrate the advantages a Smart Card program offers. In order to realise this vision of a secure, multi-application Smart Card program, the infrastructure must be in place to allow dynamic management rights and updates, without relinquishing control from the issuer.

GlobalPlatform technology is designed to provide maximum flexibility to the issuer, and its business partners, regarding card content management. The recently completed GlobalPlatform Card Specification v2.2 has added Public Key Infrastructure (PKI) functionality, allowing card issuers to create an identity smart card program that offers a dynamic post-issuance environment, open to an unlimited number of applications and service providers, all of which are able to operate within the same PK infrastructure used for the core ID program. Governments can therefore construct a trust foundation that supports further security requirements for future applications based on PK Infrastructure. By adopting GlobalPlatform technology, the issuer is able to allow partners dynamic managing rights, safe in the knowledge that the security features of GlobalPlatform's Card Specification will reject any unauthorized access. In the case of the more complex association model, a multi-application infrastructure allows a multitude of partners to create distinct business domain applications on the card, without requiring any relationship between these neighbourhoods. For example, a healthcare provider can load and delete applications onto a card, independent of, and without affecting, the other services provided on the card, such as e-passport or banking, provided the card issuer has approved these content management capabilities.

Retaining control over the management capabilities of a Smart Card program gives Governments total flexibility when selecting and updating the applications services providers can load onto the cards. In doing so, Governments are not 'locked' into working with certain partners once the Smart Card scheme has been implemented. The IT extension of these features is available in the GlobalPlatform systems technology. For example, the GlobalPlatform Messaging specification can define the rules (based on responsibility definition) and common programming language (based on XML schema) to enable the inter-connection of the back office systems of two or more distinct actors. Fully compatible with the requirements set out by the banking and financial industry, GlobalPlatform Device technology will facilitate the future deployment of financial applications onto E-ID programs. As ID programs evolve to contain biometric information, in line with the ICAO specifications, financial institutions will take a greater interest in the authentication capabilities of the ID implementations, and on-going management.

GlobalPlatform Device technology provides an equivalent framework of application updates for devices, as a card application needs a counterpart in the device, in order to manage the application transaction. GlobalPlatform has taken the first step towards interoperability for this infrastructure, with a technical contribution to the International Organisation for Standardization (ISO), which has informed the development of a new international standard for Smart Cards.

Scheduled for release later this year, the ISO 7816-13 refers to the load and delete function of a Smart Card-based application. If accepted, the international standard for application management in a multi-application environment will be based on GlobalPlatform's Card Specification; further validation of GlobalPlatform's technology and progress. With the GlobalPlatform technology available for download royalty-free from GlobalPlatform's website, the ID market has access to a library of expertise that standardises all mandatory requirements for managing e-Government projects. These technologies are currently used in more than 30 worldwide implementations, and many suppliers have created products based on GlobalPlatform technology. Utilising the interoperable infrastructure, GlobalPlatform offers government's implementing Smart Card programs more time to develop the right business components (the Smart Card and device application), and to build business partnerships with potential service provides, while reducing the project's time to market.

China's IC Card Market 2004-2005

By Research and Markets, IC Card Market Study 2004-2005

According to Eurosmart (European Smart Card supplier alliance), the shipment of CPU cards was 880 million pieces around the world in 2004, up by 31% compared to that of 2003 and it is predicted that the figure will be 1.5 billion in 2005. In 2003, the shipment of CPU cards accounted for 23.4% of the total shipment, while the percentage was 29.4% in 2004, and will be 39.2% in 2005. Although the memory card is still mainstream in current global IC card markets, the CPU card will soon replace memory cards and take the dominant position in IC card market due to the higher performance requirements for IC cards. In 2004, China's IC card market was one of the fastest growing IC card markets in the world. The shipment of China's IC card was about 563 million pieces in 2004, increasing 1.5 times compared to that of 2000. The shipment volume reached 5.04 billion yuan, increasing 4.32 times compared to that of 2000. This showed that China's IC card market not only grew rapidly in quantity, but also leaped in quality. The shipments were mainly targeted at telecommunications, and the shipment for mobile phones and public phones took more than 2/3 of the total shipments; among which, the shipment of mobile phone cards was over 300 million, breaking the record. The annual shipment of CPU card accounted for 57%, and contactless cards took 9%.

Thanks to the ID cards' issuance on an enlarged scale, it is predicted that IC card shipments in 2005 will increase by 36.1% compared to the previous year, reaching 766 million pieces; while the shipment volume will reach 9.305 billion Yuan due to the increase of the percentage of high-cost ID cards. Utilising the data of Ministry of Information Industry (MII), and considering the plans of the Gold Card Project of MII on issuing 2-generation ID card and transferring bank card EMV, and factors like the 2008 Beijing Olympic Games, Pday Research Center forecasts the shipment and shipment volume of China's IC card from 2006 to 2008. By 2008, China's IC card shipment will reach 1.91 billion pieces, 2.49 times of that of 2005; while the shipment volume will reach 24.73 billion yuan, 2.66 times of that of 2005. Due to the lag of the development of China's semiconductor industry, IC card chip design is always the weak part of China's IC card industry just as other electronic products. Currently, some important IC card markets are almost dominated by international semiconductor powers like Infineon, Renesas, Philips, ST, etc. China's domestic IC card chip design enterprises take small shares, and the technological level and stability of their products are hanging behind. In IC card products, the chips are over half of the cost; while card packaging can only gain very few profits.

Considering the information security, 2-generation IC card project must be handed to China domestic enterprises. Thus, foreign enterprises put emphasis on other promising Smart Card markets. Therefore, in China's IC card market, the competition between foreign enterprises and domestic ones focuses on mobile phone card. And actually the only domestic chip manufacturer that can compete with foreign counterparts is Datang Microelectronics.

The Japanese Payment Ecosystem

By Andrei Hagiu, Principal, Market Platform Dynamics and an Assistant Professor at Harvard Business School.

Andrei Hagiu

Sony and FeliCa: When Sony's FeliCa chips were introduced initially, their only application was embedded in plastic cards. But when Sony and NTT DoCoMo formed FeliCa Networks in 2004 this new joint venture began to make and license FeliCa chips for use in mobile phones and is now pioneering the e-wallet in Japan. For now, FeliCa Networks makes its revenue by licensing the FeliCa technology to the other mobile carriers in Japan (KDDI and Vodafone) and to chip manufacturers and by providing "platform management services" to those who develop FeliCa applications, as well as to those who use them.

These services include managing servers used for downloading applications, authenticating users and managing memory on the FeliCa chips, to name just a few. NTT DoCoMo has already sold 7 million FeliCa-equipped handsets and expects that number to reach 10 million by March 2006. This strategy is an important precursor to usage: it's now well positioned to deliver a powerful (and growing) installed base of individuals who can and will likely use new payment platforms.

Payment platforms have emerged as the most promising among the numerous FeliCa applications, both in terms of usage and revenue-generating potential. Most interesting about the FeliCa technology is that it actually enables four major payment platforms: two prepaid electronic money applications (Edy and Suica), one (upcoming) credit card payment function (iD) developed by NTT DoCoMo and one hybrid (QUICPay) developed jointly by JCB and AEON.

It also enables several other original systems such as Coca-Cola's Cmode value and one developed by a railway company named Iyo, but those represent more "oneoff" applications than major payment innovations.

Edy: Edy (Euro Dollar Yen) was launched in January 2001 by bitWallet, Inc. This joint venture was established by NTT DoCoMo, Sony Finance and several other companies and initially offered its FeliCa-based prepaid eMoney (e-wallet) service embedded in plastic cards. Today, Edy is embedded in NTT DoCoMo's FeliCa-enabled i-mode mobile phones, on which it has become the dominant e-wallet function and now comes preinstalled.

Edy, like any other prepaid eMoney service, allows users to transfer digital value onto their Edy-enabled cards or FeliCa mobile phones. (This can be done through cash register readers/writers or through direct transfer from customers' bank accounts or designated credit cards via i-mode). The cards or phones can then be used like cash at shops that are able to read them.

Suica: Suica (Super Urban Intelligent CArd) was originally a FeliCa-based commuter pass launched by East Japan Railways (JR East) in November 2001. Beginning in March 2003, however, JR East decided to add prepaid eMoney functions for use at convenience stores and shops within JR East's stations. Later that year, JR East went one step further by issuing Visa cards, branded as "View," which aggregated fare payment, eMoney and credit card functions. Currently, about 14 million cards are in circulation and 2,300 stores have adopted the Suica payment platform.

QUICPay: QUICPay (Quick and Useful IC Payments), the third contactless system to join the party, is a post-payment service (as opposed to prepaid Edy and Suica). It was launched in July 2004 by JCB, Japan's largest credit card company, and AEON, a credit service company. The service is integrated into the credit cards issued by JCB and some of its partners (UC Card and Toyota Finance).

The service allows consumers to allocate a maximum of 30,000 yen (a little less than US$ 300 of their monthly credit card limit to QUICPay payments. These payments take place offline (i.e. outside of JCB's credit settlement infrastructure used for regular credit transactions) and are then aggregated in the monthly credit card bill. Due to its very recent launch, QUICPay's adoption numbers are still very small relative to Edy and Suica: fewer than a million users have the cards and only a few hundred merchants accept it. However, these numbers are on the rise: in November 2005, QUICPay merchants expanded to include a major beef bowl restaurant chain, a karaoke chain and several ski resorts.

iD: Last but not least, NTT DoCoMo itself decided to enter the mobile FeliCa credit card game. To do so, NTT DoCoMo formed an alliance in April 2005 with Sumitomo Mitsui Financial Group (SMFG), under which NTT DoCoMo acquired 34% of Sumitomo Mitsui Card, the credit card issuer arm of SMFG.

According to Carl Atsushi Hirano, Executive Director and Head of the mobile wallet project and i-mode alliances in NTT DoCoMo's multimedia department, the operator is planning to become a credit card company by developing its own credit card brand, dubbed "iD," which was launched on December 1, 2005. Initially, iD will be licensed to other banks and credit card issuers, whose users will be able to make purchases via their mobile phones linked to their credit cards (in addition to using the conventional plastic cards). Subsequently, NTT DoCoMo will gradually become a credit card issuer itself. Owners of i-mode FeliCa handsets then will be able to use them to make credit purchases within a certain monthly limit (say, 10,000 yen). Initially, the statement of these expenses will be sent separately, but in the future it'll be presented as part of the i-mode bill. In order to exceed the pre-set monthly limit, one would have to apply for a credit card account with NTT DoCoMo.

US Banks Lagging in Biometrics Applications

By Ariana-Michele Moore, Senior Analyst, Celent Communications

Ariana-Michele Moore

Biometric technologies are expanding their footprint in the banking industry, as banks across the globe are using biometrics to curb fraud and offer customers an easy, convenient alternative to cards and PINs. However, U.S. banks may be more than a decade away from realising its full benefits. It will be years, if not a decade or more, before the U.S. will be in the position to offer consumers the ability to make a payment with a finger, iris, or other biometric method on an open payments network.

It is seen that while technological advancement and price improvements are among the factors positioning biometrics as a useful tool for banks, US banks face challenges -- from creating standard biometric applications to encouraging customers to use biometrics -- that will stall widespread use of the technology in the U.S. Despite the challenges facing those banks interested in deploying biometrics across their customer base, many banks are using them internally across applications such as employee background checks, time and attendance, and access security. The opportunity for biometrics is fantastically huge, and its applications are as wide as the mind can stretch.

Many different technologies have already been tested in the market, some as bizarre as body odor. A few have emerged from the pack as true leaders, such as fingerprint and iris recognition. I predict that deployments in the private sector will grow and will largely pave the road for biometric use across the retail banking industry. Biometrics in cell phones, laptops, storage lockers, and many other types of applications will increasingly acquaint consumers with the technology and increase their level of comfort.

Ticketing Goes Mobile

By Alan Goode, Analyst, Juniper Research

There are two billion mobile phone users in the world and many of these will use a ticket at some point in their daily lives to allow them to travel, to watch the latest Hollywood, or Bollywood blockbuster and to enable them to cheer on their favourite sports team. Ticketing is suited to the characteristics of a mobile device. It is an object that is usually with its owner, has storage capacity, is relatively secure, has a display (many have colour), is connected to a wireless network (one that is getting quicker) and is linked to its owner via an ID (the IMEI and the phone number).

These characteristics have enabled the technologists and product marketers to develop workable and efficient ticketing schemes that are providing real revenue for the operators, the software developers, the system integrators, the Smart Card manufacturers, the handset manufacturers and the scheme operators - everyone wins! There are big benefits of using your mobile phone to purchase tickets over using traditional means such as a telephone call centre or the fixed internet.

One of them is that the ticket, once purchased, can be sent to and stored on the mobile device itself - you do not have the problem of going to a ticket office or agency to purchase and/or collect the ticket. This is convenient for users and offers cost savings for the ticketing operator in that there is no ticket to print and then issue.

Mobile Ticketing Services: Mobile ticketing services are in operation in virtually every area where a ticket is issued. Some businesses are more suited to mobile ticketing then others, e.g. tickets for public transportation, car parking and events (cinema, theatre, music and sport). The mobile ticketing service providers are being innovative in the their use of mobile phone technology; mobile tickets are being issued using SMS, mobile barcodes and using Radio Frequency Identification (RFID) or other Near Field Communication (NFC) technology.

SMS Based Mobile Ticketing: Mobile ticketing using SMS is a relatively quick and easy way to get tickets issued to mobile phone users, although the security surrounding the redemption of the issued ticket can be an issue. SMS was used in the world's first mobile ticketing system to sell, deliver and redeem a ticket to an event using only wireless technology. The UK based mobile ticketing service provider, mTicket, was involved in the world's first m-ticketing system when mTickets were sold to the Ministry of Sound nightclub in London on March 26th 2001. Tickets are delivered as an SMS text message and redeemed securely without the need to post a paper ticket to the end consumer. In the UK the largest inter-city bus service, National Express Coaches, have launched an initiative to offer SMS based M-ticketing solutions to their customers. The service is aimed at customers who are unable to get to an internet connection or who are too close to the date of travel to receive tickets in the post.

Barcode Based Mobile Ticketing: Barcodes, either 1D or 2D, offer a distinct security advantage over a ticket contained in an SMS text message. Mobile ticketing service specialists, like Mobiqa, have developed mobi-ticket, bar coded tickets sent to a mobile phone. The mobi-ticket is redeemed at the venue by simply scanning the mobile phone display with a standard barcode scanner. Mobiqa and the UK mobile operator O2 teamed up to issue mobi-tickets for the autumn 2005 England RUGBY Internationals in London. The tickets are issued using standard mobile messaging, either SMS or MMS, and do not require any specialist software to be installed on the mobile phone. The mobile barcode schemes are proving to be very popular with consumers; the Sydney Metro Theatre in Australia held an event in 2005 where more then 50% of its customers were issued mobile tickets.

The airline industry is considering the use of mobile barcodes for airline tickets and boarding passes. IATA (the International Air Transport Association) the airline governing body has also announced that it wants all airlines to stop distributing paper tickets by the end of 2007 and has calculated that this will save the airlines $9 per customer.

It is not beyond the realms of possibility that e-ticketing will move to m-ticketing for the airline industry when it sees how successful other transport industries are in using this technology. Bryan Wilson, Project Director for e-ticketing at IATA. "IATA is driving the industry initiative to implement 100% electronic ticketing by the end of 2007 to enhance passenger convenience and save the industry US$3 billion in annual costs. As a mobile phone is a message receiving device, much as a home computer with e-mail, IATA's e-ticketing initiative effectively enables m-ticketing.

There is no reason why a customer today should not be able buy an e-ticket from a browser enabled mobile phone including payment processes from an airline or travel agent website. After purchase, the passenger must be issued an e-ticket number which could be supplied by message to a phone. Additionally, with e-ticketing the passenger must be issued an itinerary receipt containing the ticket number, itinerary and relevant terms and conditions. This is normally delivered by e-mail which is accepted as an adequate medium to cover the liability issues for air travel under international conventions. Again, there is no reason why a mobile phone, at a customer's choice, should not be used to receive and read the itinerary receipt."

For airlines security is a major concern but these concerns can be met by mobile ticketing solutions using barcodes. Mobiqa's basic mobi-ticket solution is more secure than paper based solutions and with the addition of the mobi-pass embedding your photo in the ticket it becomes significantly more secure than existing paper based solutions.

Mobiqa are at proof of concept stage with three airlines at present and are talking to nine others around the world. Air travel ticketing is a huge business, millions of people travel by air around the world. IATA has predicted that we shall see an annual growth of 5% for all international passenger numbers between 2004-2008, with the developing world showing the fastest growth. China is predicted to have the largest growth with a predicted 12.5% growth between 2004-2008 (There were 21.9 million recorded passengers in China in 2003). If m-ticketing takes just a small chunk of these numbers then it could become a multi multi-billion dollar business within a few years.

RFID Based Mobile Ticketing: Radio Frequency Identification (RFID) technology is being used in combination with mobile phones to enable the purchase and secure storage of tickets. Mobile-operator led schemes such as NTT DoCoMo's i-mode FeliCa (Sony's contactless IC card technology) service enables travellers in Japan to purchase and redeem railway tickets using their mobile phones. The mobile phone becomes the contactless Smart Card by placing the RFID technology into the battery casing of the device.

By placing i-mode FeliCa mobile phones close to a receiver, travellers can purchase tickets in the same way as they do using contactless Smart Cards. Transport for London (TfL), the organisation that manages London's tube and bus network, is currently investigating porting their Oyster contactless Smart Card to a mobile phone. These schemes are also not just being purely used to purchase and store tickets.

Early in 2005 NTT DoCoMo announced a pilot scheme in partnership with the World's largest passenger rail company, the East Japan Railway Company (JR East), offering a m-ticketing service combining DoCoMo's i-mode FeliCa Smart Card handset and Suica, JR East's IC card train ticket. The cards can be used not only on trains, but also to make purchases at selected restaurants, convenience stores and other shops inside and outside JR stations.

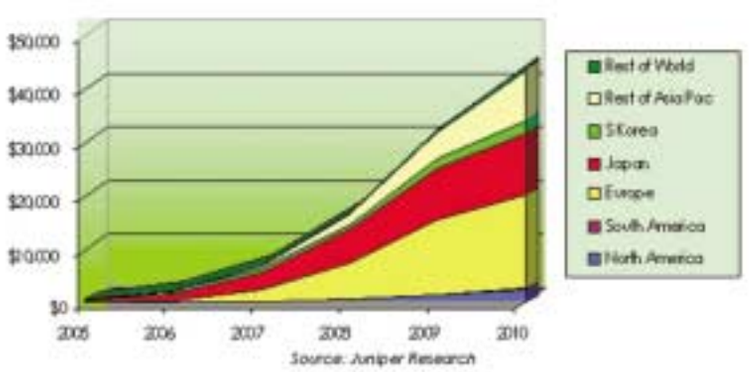
Additionally in London, TfL are investigating extending the application of its Oyster card to other non-travel related transactions in retail outlets. The mobile ticketing application is enabling its users to get familiar in using a mobile phone for commerce and getting them ready for other non-ticketing cashless transactions.

Park Mobile, a ticketless and cashless car parking service provider based in The Netherlands, have made use of RFID and a mobile phone in a different way to NTT DoCoMo. Subscription to the scheme results in an RFID responder being installed in the vehicle which designates whether you are then allowed to "activate" parking in a controlled area using a mobile phone. Park Mobile's cashless and ticketless parking is the winner of the 2004 CNET Networks Awards' Mobile Product or Initiative of the year.

Motorists now have the luxury of parking without searching for coins, or hunting for working pay and display machines. It only takes a short call to activate and deactivate parking transactions from the comfort of a car, office or home, even on the train. This scheme is an innovative use of mobile phone and RFID technology and is not unique - many such schemes are springing up all over the world.

The Market for Mobile Ticketing: Mobile ticketing is currently available to small networks of consumers and is already making a real monetary contribution to total m-commerce revenue figures. As more and more mobile ticketing applications and services come on line in more regions over the next five years, its contribution to the total revenue of mobile commerce service providers will increase substantially. Mobile ticketing will play an important role in introducing users to the notion of using a mobile phone for mobile commerce. We are seeing creative applications and services being introduced that allow consumers to buy and store tickets on their mobile phones. The convenience of buying and then storing a ticket on your mobile phone is a powerful proposition that means that by 2010 32% of the technology hungry Japanese mobile phone users will be buying tickets in this way.

A fact that is very encouraging for the future growth of m-ticketing is the percentage figures for adoption when a scheme is first introduced. For the Park Mobile car parking scheme in the London Borough of Hammersmith & Fulham we have seen adoption rates of 10% of total tickets issued for the first year of operation and in longer running schemes in The Netherlands this figure rises to 30%. A similar picture is emerging with mobile ticket schemes that are using 2D barcode technology. One of the leading suppliers of mobile 2D barcode ticketing is Mobiqa and they are seeing initial adoption rates of between 15-20% of total tickets purchased for an event, rising to 50% as the regular users see the benefit of receiving the ticket to the phone rather then receiving it is a paper ticket. The biggest factor that users are citing in preferring to purchase tickets using their mobile phone is convenience.



Japan, with a forecasted 32% of mobile phone users purchasing m-tickets by 2010, will lead the way in mobile ticketing use but Europe, with its bigger population, will be the area where we shall see the highest total usage. The numbers may be currently small but the evidence points to more and more m-ticketing schemes being implemented - and where there are schemes we will see adoption. 2007 will be an important one in the adoption of m-ticketing, especially in Europe, Japan and South Korea. Other contributing factors, such as the growth in the shipment of smartphones, create the conditions for this growth at this time

The forecasts detail the importance of the mobile ticketing sector to the mobile commerce market, contributing a forecasted total of over $44billion of revenue by 2010. It's Hats off to the m-ticketing service suppliers for developing innovative and usable technology that, where available, consumers will choose to use.