Profiting From EMV:

Bad debt prevention and new revenue streams

EMV isn't just about reducing fraud. Banks can use recent developments to earn revenue from new services and cut bad debt too, says Jane Adams.

Researched and authored by Jane Adams on behalf of ACI Worldwide.

In the UK alone, introducing EMV, the payments associations backed specification for smart credit and debit, will cost over £1bn. Most of that will be financed by the banks. Yet the rationale for EMV, that it will slash fraud losses, no longer seems enough.

While EMV will help achieve governmental objectives of cutting funding for drug related organised crime from card fraud, it is unlikely to provide a normal, acceptable, commercial banking return on investment (ROI). Recent forecasts from the UK's Association for Payments and Clearing Services predict the following drop in UK card fraud: 13 percent in 2005, 20 percent in 2006 and 15 percent in 2007. With fraud running at £411.4 million in 2001 in the UK, and global estimates approaching $2.5 billion, that still leaves a big shortfall between the benefits forecasted compared with the return needed to justify the substantial investment in cards, terminals and infrastructure.

EMV is a standard for credit and debit payments, using smart cards. Agreed by Visa and the recently merged Europay and MasterCard, it aims to ensure interoperability between smart cards and terminals, worldwide. To drive its adoption, the payments associations have set implementation deadlines. In Europe, the deadline is January 2005. After that date, issuers or acquirers that fail to meet the deadline will be labelled 'non-compliant' and liability for fraud losses will pass to them.

Not surprisingly, banks are seeking ways to offset the cost of implementation. Indeed while more than 80 percent of banks view migration to EMV as an ongoing or high priority, budgetary and technical worries remain key concerns, according to market research conducted by Finextra on behalf of Level Four. Finextra's research shows that while 85 percent of banks in Europe and the Middle East have EMV projects in place, many are only at the planning stage.

Potential ways of offsetting the cost for banks include multi-application cards and leveraging EMV to provide new services. Just as significant though is EMV's role in managing credit risk.

Managing Credit Risk

Although it's hard to get a banker to admit it, there is one topic that worries issuers far more than third party fraud. "Banks are massively more concerned about bad debt. Bad debt runs at multiples of fraud," says David Birch, director at Consult Hyperion, a Surrey based systems consultancy. In the UK for example Barclaycard made bad debt provisions of £370 million for 2001, barely less than the card fraud figures for the entire country.

Debit card bad debt is a particular concern. Until now, offline risk parameters on EMV cards only allowed issuers to control the number and aggregate value of consecutive offline transactions permitted since the last online transaction. These limits are not directly related to the cardholder's current available balance. Cardholders could spend more offline than they had in their bank accounts by spending up to the offline limits and then withdrawing the balance of their bank accounts in cash at an ATM, before the offline transactions cleared. This is a particular problem in countries where there are legal or regulatory reasons why some bank accounts must not go overdrawn.

However both MasterCard International and Visa International have recently launched new specifications, MasterCard's M/Chip 4 and Visa's VSDC Plus, that tackle the risks associated with offline transactions. "In plain vanilla EMV, the card risk management features were designed to allow the issuers to implement the acceptable amount of offline risk they were ready to take," says Alexandre Cunesco, associate vice president and product manager, Global Chip Centre of Excellence, MasterCard International. "Now we are proposing a solution to make sure no offline risk will happen. There will be no customer overdraft." The VSDC Plus feature extends the VSDC (Visa Smart Debit and Credit) specification to support pre-authorised spending limits for debit and credit cards. VSDC already incorporated Visa Low Value Payments (also referred to as Visa Lightening Pay), a means of using EMV for low value payments.

Pre-authorised offline debit means that alongside the customer's account, he also opens a shadow or memorandum account. A commonly agreed amount is reserved on the bank account for offline card spending and is recorded on this shadow account. Through the EMV scripting function, the reserved amount is mirrored on the card associated with the account.

The cardholder can spend offline up to the limit of funds recorded on the card as long as each transaction is under the merchant's floor limit. Once either limit is reached the card triggers an online transaction and communicates to the issuer the current status of offline spending. In response EMV scripts are used to update and replenish the open-to-buy sum on the card. The sum in the shadow account is updated as transactions are received.

For many European banks the focus remains primarily on EMV card issuing in preparation for the January 2005 deadline for the mandated fraud liability shift. David Barker is senior manager, banking and card strategy at Nationwide Building Society. He says, "Once chip and PIN are in place then we will start prototyping some parameter changes."

Outside Western Europe however banks are moving faster to benefit from the opportunities offered by pre-authorised cards. Visa will launch small-scale pre-authorised card implementations in Russia and in Khazakstan. "The cost to the banks is much lower, it's integrated, it goes online when necessary and it removes the need to have a separate low value system," says Stuart Brocklehurst, senior vice president, Development, Visa International CEMEA Region.Visa will also pilot similar projects in Canada and Brazil.

MasterCard also plans trials during 2003. Cunesco says that members from MasterCard's South Asia, Middle East and Africa region and from Latin America and Eastern Europe are interested. "It is meant to help members enable low risk PIN based transactions in primarily offline environments, specifically in markets where the telecommunications infrastructures are either not reliable or quite expensive and a 100 percent online scheme would not be economically interesting," he says.

VISA's Brocklehurst expects offline debit to be used for payments up to $100. "It's for the member bank to set the level of offline limits they want the cardholder to have," says Brocklehurst. "They can change it dynamically whenever the card goes online."

"We think this will be used pretty widely, not just for low value payments, although it does make low value payments much more economically viable than they have been to date," he adds.

New Business Opportunities

While these new initiatives allow banks to reduce bad debt losses, they open up new business opportunities too, including low value payments and offering cards to a wider customer base. The technology could also be used for prepaid products, chip enabling existing prepaid debit magnetic stripe products such as Italy's Carta Kalibra.

> **"The ability to operate a low value payments product on the same infrastructure as EMV debit/credit cards has obvious cost advantages," says Barry Maidment, business development manager at e-payments software provider ACI Worldwide.**

In addition money is stored in a shadow account and not on the card. So if the card is lost, the money is safe and the money in the account can continue to earn interest until it is spent.

"Bringing everything into a single application has to be the most efficient way to control your funds," says Visa's Brocklehurst. "We've seen consumers react badly to any suggestion that requires them to put different amounts of money into different specialist accounts."

One thing may need to change though before offline debit becomes a viable alternative to cash for micropayments. Typically, acquirers will charge a merchant service charge based on a fixed amount per transaction for debit transactions. Caroline Walpole, business consultant at ACI Worldwide comments, "Merchants and acquirers today have a pricing structure based on magnetic stripe cards being presented for payment. Most of the payments levied are based upon the risk associated with any particular type of transaction. Clearly if you put in stronger forms of authentication that changes the risk profile."

Reducing the risk of unauthorised borrowing on debit cards means that issuers could provide card services to customers with no banking history. In the UK for example Nationwide is just about to start investigating EMV parameter management. "To date we haven't given debit cards to all and sundry," says Nationwide's Barker. Reducing offline risk might change this. "We could slacken off front-end controls and make cards more widely available," he adds.

MasterCard says that its members have certainly shown interest in new customer segments. "Our main requirement has been for a solution that allows members around the world to open up new customer segments like the unbanked," says Mastercard's Cunesco. This isn't a charitable initiative though — new customers, with reduced risk, mean new deposits for banks.

EMV Profitability

Governments are keen to encourage access to banking services for those currently without accounts. In the UK for example the government is promoting Universal Banking as part of its plans to automate benefits payments from April 2003.

Do some governments want to remove cash from the economy? "Governments have huge costs of producing cash, storing it and looking after it," says Visa's Brocklehurst. "They view large amounts of cash as a big driver of crime so governments are very keen to deal with this."

Singapore is actually aiming to make electronic money legal tender by 2008. "In Singapore government representatives are talking quite straightforwardly. They want to cut the cost of doing business and make the economy more efficient and they want to get rid of cash," says Birch of Consult Hyperion.

Pre-authorised debit technology could also replace magnetic stripe prepaid debit cards, updating existing products and providing better security. Maestro and Electron branded prepaid cards first appeared about two years ago. In Italy Banca Eurosistemi (ICCRI Banca Federale Europea) launched the Carta Kalibra, a prepaid magnetic stripe debit card in July 2001. Four hundred thousand have been rolled out; around 25 percent are in use, mainly by students or other low income users. The card is targeted at people without bank accounts. "There are around two million of them in Italy," says Sergio Moggia, executive manager, payment services, at Banca Eurosistemi. The card is available with either Maestro or Electron brands. There are other similar programmes in Hungary, Spain (from La Caixa and BBVA) and Israel.

Acquirers will also benefit from offline pre-authorised debit. "We are hearing from the market that there are quite a number of merchant categories that are primarily cash based today that would be willing to move to card based transactions providing the cost of online authorisation can be removed," says Mastercard's Cunesco. He points at convenience stores and campus retailers. Cash substitution will also reduce the risk and cost of handling cash for merchants.

It's in the interests of issuers and acquirers to increase card use. "The more transactions that go through the pipeline, the lower the cost per transaction and the lower the transaction value that can be processed economically. Higher, profitable volumes mean a greater return on your investment." says ACI's Maidment.

Multiple Applications

Another way for banks to leverage EMV is to offer further applications themselves or to rent out card space to third parties.

MasterCard has recently backed the concept of multi-applications with its announcement of MasterCard Open Data Storage (MODS), an application programming interface (API) for storing and retrieving data on multi-application cards.

MODS was launched in response to customer research that showed that consumers wanted multi-application cards just as long as the cardholder had control over personal information stored on the card and that information was secure. Such information might include shopping related data such as passwords and ship to/bill to addresses, phone numbers and dietary information like allergies. MasterCard's rationale is that making cards more useful will lead to increased spend and lower churn. The common API will allow retailers, banks and other organisations to create new applications or interface with existing ones using the same set of commands.

> **"MasterCard has been very proactive in sourcing and combining applications and trying to think of the types of applications that people will want," says ACI's Walpole.**

Some banks are already working with third party application providers. In Russia, the Bank of Moscow is working with Moscow State Government and the transport authorities to produce a dual interface EMV Visa card with ID, social security payments and underground ticketing applications.

Transport applications in Pusan and Seoul, Korea run on bank payments cards. Transport for London has been talking to selected UK banks about the option of putting an EMV payments application on London's Prestige mass transit card. The Singaporean government access card is also a debit/credit card.

Systems Challenge

Given the cost of implementing EMV, these new revenue opportunities seem a godsend for banks. Yet some banks seem to be finding meeting the January 2005 deadline sufficiently challenging, despite the potential return on investment from these new opportunities.

EMV Profitability

"Logistically the whole thing is such a complete headache for the banks that they want to get on with it and at least get the first lot of cards out before they think about doing anything more fancy," comments Birch of Consult Hyperion.

To benefit, banks will need to be able to manage card parameters proactively and dynamically, adjusting them during online transactions. PIN at offline terminals must be supported. Third party involvement in multi-application systems poses well-documented challenges.

Personalised cardholder parameters, multiple applications from different providers, application version changes, chip operating systems and operation system versions must be managed to issue new, replacement and renewal cards.

"Banks migrating to EMV cards face a difficult challenge," says Rainier Brueren, Vice President and Managing Director of ACI's Smart Card Division. "A chip card issuing environment is much more complex than a magnetic stripe one and issuers without chip card experience can underestimate the complexities and effort involved. The clock's ticking on the liability shift and fraud will migrate to non-EMV issuers and acquirers. Experienced suppliers can help, but have finite resources: to meet the mandate deadlines, banks need to ensure that their projects are in the queue. Then the challenge is to profit from new opportunities offered by EMV, including proactive risk management and new products such as VLP and pre-authorised debit."

Jane Adams is a freelance journalist who writes about technology issues for European Card Review. She is the author of the 7th Edition of The Smart Card Report, published by Elsevier.