ADDING VALUE WITH EMV CHIP

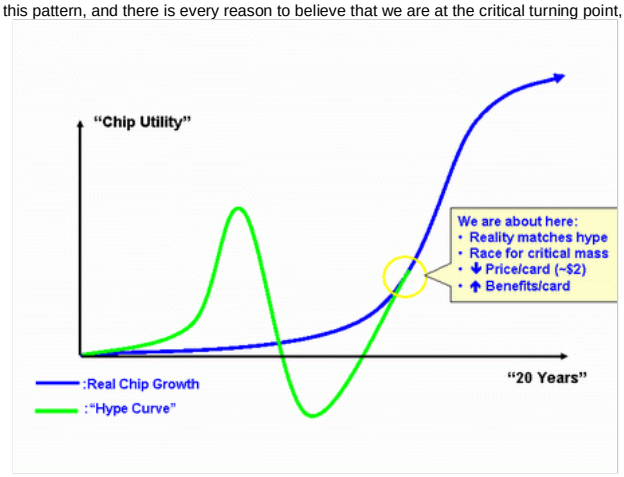
LEVERAGING THE EMV CHIP INFRASTRUCTURE

It's been a long time coming, but the global migration to EMV chip is now well underway. All over the world, banks and other card issuers are replacing their magnetic stripe payment cards with "smart" EMV chip cards (EMV is the standard for chip payment cards, developed jointly by **E**uropay, **M**asterCard and **V**isa). APACS, the UK payments and clearing organisation, has called the migration to EMV chip "the most revolutionary change ever" for card payment systems.

The UK is at the forefront of this revolution, thanks to a £1 billion investment by banks and retailers in the "Chip and PIN" project. What we are witnessing here is the emergence of a new infrastructure with a critical mass of both EMV cards and EMV terminals. Over the next few years there will be outstanding opportunities for forward thinking institutions to leverage this infrastructure for competitive business advantage.

History reveals common patterns in the development of really important infrastructure-based technologies such as railways, telephones or the electric grid. The lag between the first appearance of the underlying technology and serious commercial deployment is very long, typically 20 years. This is because of "chicken and egg" constraints (eg there is no point investing in railways without locomotives to run on them, and vice versa) and also because of the need for universally agreed standards. During this slow build-up period the technology is typically "over-hyped" and then disillusionment sets in when the claimed benefits do not emerge immediately. Eventually, however, critical mass is reached, after which progress is extremely rapid and often extends far beyond initial expectations into new, unforeseen applications. Ironically, exponential growth often starts just at the moment when the "hype curve" is at its lowest point (see below). And most importantly, it often turns out that the biggest rewards go to those with the foresight to build new applications on the back of the "free" infrastructure. For example the people who made the most money out of railways were not those who laid the track but those who developed the things which this new infrastructure enabled: passenger services, freight services, stations, new towns, and so on.

Chip shows all the signs of following this pattern, and there is every reason to believe that we are at the critical turning point, as illustrated below:



The business case for migrating to EMV chip is based mainly on fraud reduction. Countries where migration is complete have seen a dramatic reduction in counterfeit fraud (since the chip card is much more difficult to copy than a magnetic stripe card) and lost and stolen fraud (since chip facilitates authentication by PIN, which is much more secure than a signature). For example both these types of fraud have fallen significantly in the UK, at least for domestic, face-to-face payments - although fraud is still rising for UK cards used in countries such as the US which have not deployed chip, and for non-chip card-not-present payments (but see below).

But there is a sense of many banks engaging in this massive enterprise reluctantly and perhaps myopically. Few banks seem to be looking beyond migration to core EMV chip and asking how chip can be used to deliver business benefits beyond fraud reduction. Typically, the chip migration project within a bank is driven by the card payment IT staff with little input or involvement from other banking divisions or marketing and new business development staff. With notable exceptions, long term strategic planning is rare and senior management typically do not fully understand chip and its significance. Perhaps this is understandable; chip migration is highly complex, very expensive, with a long and uncertain payback period. But this is all the more reason why banks should adopt a more strategic, long term vision focused on delivering new revenue streams and growth.

In an effort to rekindle enthusiasm for chip, we describe below a few examples of how banks might achieve this vision by leveraging the EMV chip infrastructure with added-value applications.

ADDED VALUE APPLICATIONS

REMOTE CHIP AUTHENTICATION

Remote Chip Authentication (RCA) involves using a low cost, hand held card reader to generate a dynamic password, enabling secure authentication of remote banking and payment transactions via the internet or telephone. MasterCard calls this the Chip Authentication Program (CAP) and Visa calls it Dynamic Password Authentication (DPA). Many banks, all over Europe, are already using RCA for secure online banking - Barclays and RBS in the UK for example. The next step will be to extend this approach to secure e-commerce, by processing the dynamic password as a MasterCard SecureCode or Verified by Visa 3D Secure token. Looking further ahead, banks should start offering this strong, two-factor authentication platform to government and corporate clients, thereby earning important new revenue streams.

CONTACTLESS LOW VALUE PAYMENT

Contactless Low Value Payment (LVP) applications such as MasterCard's PayPass or Visa's PayWave combine the security of the chip card with the convenience of contactless payments. The LVP proposition is designed to replace cash payments in high-throughput, low-value payment environments. By adding a simple ticketing application, LVP can easily be extended to transport and mass transit applications (Barclays OnePulse card already does just this). Many other applications, which may well go beyond payments, will then become economically viable when a critical mass of contactless terminals becomes available.

STORED VALUE PAYMENT APPLICATIONS

An important advantage of EMV chip is that it enables much more sophisticated offline risk management. This can be used as the basis for a range of stored value or pre-authorised payment products which are very safe and cost-effective for issuers. These products can then be used to develop profitable banking relationships with new unbanked or underbanked markets. There is huge untapped potential in markets such as China, India, Russia and Africa as EMV

terminals are rolled out in these regions. At the same time, this approach makes possible new acceptance environments using unattended or offline terminals.

LOYALTY AND ENHANCED PAYMENT APPLICATIONS

These are designed to help banks develop profitable partnerships with merchants through shared schemes which use loyalty programs and customised offers to deliver an enhanced customer experience at the Point of Sale. These applications have the advantage of being associated with the payment process and are a well understood concept amongst cardholders. What chip brings, apart from a reduction in manual paper-based processing, is the possibility for the first time of instant earning and redemption of loyalty points at the point of sale, and also sophisticated multi-merchant schemes.

INFORMATION-BASED APPLICATIONS

The chip card can be used to securely store personal information (e.g. digital certificates, identification details, medical details, membership data, entitlements to social benefits or discounts, etc). This data can either be read by public EMV terminals belonging to a social service provider to support a variety of mass market applications (see Community Cards, below); or it can be accessed by cardholders via a simple card reader connected to the PC. This technology is now sufficiently reliable and cost-effective to be the basis of new products to acquire and retain the most profitable consumer segments.

COMMUNITY CARDS

The idea of using chip technology to support some kind of Community Card (otherwise known as City Cards, Citizens Cards, Campus Cards, or Social Cards) is by no means new. Chip is the obvious vehicle for a single multi-application card which in addition to payments, supports entitlements authorisation in the form of cardholder identification, access control, membership applications, mass transit ticketing, age verification, etc, and can be issued to all citizens in a local community. What is new is the availability, for the first time, of a critical mass of standard EMV terminals to read these cards cost-effectively, and offline risk management to enable these cards to be issued safely to a mass market. Moreover, chip technology enables the secure authorisation of cardholder entitlements to benefits and discounts in a single, streamlined, enhanced payment transaction. This is an old idea which has come of age.

CONCLUDING REMARKS

The global migration to chip and PIN technology presents banks with outstanding opportunities to leverage the rapidly emerging EMV chip infrastructure by building value-added applications, either alone, or in partnership with third parties or other banks. Since the costs of building this infrastructure have already been sunk and justified in terms of fraud reduction, the additional revenue streams can be expected to be highly profitable and improve the overall return on investment in the venture. Furthermore, since the UK is at the forefront of EMV chip migration, there will be a second wave of opportunities for UK banks to export successful value-added applications to Europe and the rest of the world. Rather than regarding chip and PIN migration as a necessary evil and adopting a limited, IT-driven focus, banks should be taking a broader, more strategic view with the emphasis on the medium to long term. This could be the opportunity of a lifetime!

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