

Smart moves in the developing world

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South African company Aplitec saw a gap in the payments market and devised a cheaper alternative to the EMV standard. *Stuart Theobald* explains how this upstart company has stolen a march on the global card giants.

Smart cards have heralded a technical revolution in payments systems across the globe. But the industry smart card standard Europay Mastercard Visa (EMV) is not without its challengers. One that has caught the attention of Visa particularly is a small South African IT company called Aplitec.

Armed with a smart card interchange patent and 14 years of development, Johannesburg-based Aplitec is making waves among the five billion people who are “unbanked” around the world. With systems already in action in Russia, Latvia, South Africa and Malawi among others, the company is about to launch more in South East Asia, India and Brazil.

Different paradigm

“The paradigm is completely different to a standard banking paradigm,” says Aplitec CEO Serge Belamant. “Instead of having a bank account on a mainframe, it’s on a [smart] card, which means it can work offline and offer more functionality much quicker. We’ve turned the whole model of banking around.”

Aplitec is aiming to become nothing less than the payment standard of the developing world. Uneducated and poor users offer little attraction to established banks or payment providers, infrastructure limitations stand in the way of transacting through live switching systems and transactions tend to be small value, high volume.

Aplitec aims to plug this gap in the market. At the heart of its system is the Universal Electronic Payment System (UEPS), a method of transferring cash electronically , without cheques or traditional credit and debit cards. What makes it all possible – and almost cost-free to the user – is a decentralised model of transacting. Any card holder can transfer cash to another card holder offline by using a cheap interchange terminal, the essence of Aplitec’s smart card patent.

Centralised audit trail

Transactions are then bulk processed at the end of a working day, or whenever merchants or licensed terminal operators can reach an online terminal, establishing a centralised audit trail in the background. Pensions and wages can be paid out from a single card to multiple recipients, who can then transact with each other or merchants. Avoiding the pitfalls of old offline banking, Aplitec’s smart card technology controls client balances and even pays interest without reference to a central mainframe. The model is ideal for rural areas, which lack the infrastructure to connect to major bank networks. Most of the cards use fingerprint identification instead of PINs, which improves security and meets the challenges of ‘banking illiterate’ people. The system works for both credit and debit models.

Life on a card

“It’s basically your life on one card except its in your pocket instead of in the bank’s pocket,” says Mr Belamant, with the characteristic frankness that has invoked the ire of heavyweights Visa and Mastercard.

While established players concede that Aplitec has stolen a march on them through the use of biometric technology to verify card holders, they are not about to let the upstart run away with their business. Cedric Edwards, head of Visa for Sub-Saharan Africa, says: “The credit card industry around the world is very mature. The debit card industry is also, in the US and Europe.” The growth, he says, has to come from developing countries – so it’s an important market for Visa.

But Aplitec has already established some strong franchises. In South Africa, 2.6 million cardholders receive their government pensions every month using the technology. They face no transaction or account costs – instead,



— **Aplitec’s Serge Belamant:**
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government pays Aplitec less than \$2 per card holder per month. In Russia, 1.6 million of Sberbank's 200 million accountholders use Aplitec-backed cards. The Malawian central bank has used Aplitec's technology to set up an entire national payments system for individuals, and in the Latvian city Riga, driving tolls and small transactions can be paid for using the card, of which there are 70,000 in issue.

Although Visa has less to boast about in this area, it is moving in a similar direction. The EMV standard can be developed to handle offline transactions, a facility that Visa is working on. EMV could also be developed to use fingerprint recognition, "if biometrics were absolutely necessary for the payment of pensions," says Mr Edwards. Visa has already shown it is willing to move away from orthodoxy in developing the Moscowcard – a Visa-branded card for Russian pension payments. This shows the card giant is able to develop the EMV standard beyond its original conception as a secure alternative to the magnetic card.

Aplitec, however, cites the the matter of cost. An Aplitec terminal is a fraction of the price of a Visa or Mastercard terminal, says Mr Belamant. Additionally, Visa and its member banks charge account holders and merchants for the transactions.

Visa fights back

But Visa says it is also targeting costs. "If we want to grow volumes – if we want more people to use cards and grow our own business – we need to provide a product that can be available to more and more people to use," admits Mr Edwards. "We are talking about lots of transactions at lower value. If we want to make those transactions viable from our own [member] banks' points of view, then we need to make sure we can bring down the cost of those transactions." This, he says, will come with Visa's development of the EMV standard.

There's also the issue of EMV's global acceptability. Mr Belamant says the Aplitec technology can be "morphed" to behave like an EMV card when it has to. Mr Edwards disputes that, since Visa would have to give permission for Aplitec cards to be branded as Visa-compliant – something which would not be forthcoming.

So Aplitec aims to become its own international standard. "We want to become the Visa for the developing nations of the world," declares Mr Belamant. At present, none of the various applications of the UEPS are interconnected, although he says the technology is in place and waiting to be switched on. "We are waiting until we have 14 African countries. We already have eight and will have another six by the end of [2003]. And then we will form a club so we can start transferring money from one user to another across borders. We forget that people in Ghana, for example, take money every single day to Cote d'Ivoire. They can't use Visa or Mastercard, so now they are taking cash on foot."

Visa purchase

In a twist of fate for Mr Belamant's ambitions, Visa bought non-exclusive global rights to use the UEPS patent everywhere outside of Southern Africa in the early 1990s. It went so far as to develop some systems relying on UEPS, but later decided to abandon development to focus on EMV. It is not constrained by Aplitec's patents, however.

In Mr Belamant's view, Visa does not pose much of a threat to his business. "We normally work with local banks, government-owned banks or building societies who haven't yet been brainwashed by the Visa or Mastercards of the world," he says. "They realise: 'If we use this technology we don't need cheques, we don't need debit cards, we don't have to have a backhand account, we can process in batch rather than online.' Immediately they see they can leapfrog all the other bank systems in the world for them to achieve a much better system. But the guys who have already spent billions in developing their own infrastructures, it's difficult to say [to them]: 'well you don't need that'.

"We are probably the only smart card company in the world with something that works. Others are still running trial sites. We can show sites that we've been running for 10 years. That credibility is starting to work for us."

Of course, with EMV intent on developing its technology to offer similar functionality, Aplitec will have a credible contender to deal with. For now, though, not even EMV can boast of 10 years of active smart card business behind it.