

Inside the world of smart cards

To date, the smart card revolution has failed to take hold. Australia has yet to embrace the new technology, despite the promised potential. **PAUL CHEAL** talks to those in the industry to find out what's happening in the smart card market and how those in the industry plan to make the future more successful than its past.

"EVERYBODY in the smart card business has struggled significantly to get the actual business going. I think the major problem is that everybody has been vying for the premier standards," proclaimed Graeme Freedman, business development manager of smart cards for Fujitsu in Australia and New Zealand.

And that is the major problem with smart cards. While their potential is limitless, the uptake of smart cards has been restricted by the development of a number of operating systems, inferior infrastruc-

"The problem with many implementations is that you try to be too horizontal, you try to be all things to all men, and roll the card infrastructure out horizontally. What happens with this is that there is a huge infrastructure cost, but with few benefits for each consumer."

Harry Charalambous from Charatech, the Australian and New Zealand representative for Orga, said Australia, in particular, has lagged behind in the implementation of smart cards.

"We are disappointed by the fact that we have been using smart cards

various combinations of applications, such as loyalty, secure Internet access, and electronic purse, which can coexist alongside Visa's debit/credit payment applications.

Charalambous disagrees that it is price that has inhibited the success of smart cards, and he believes that educating people about the convenience and the services, that are so easily available at the touch of a button, will enable smart cards to fulfil their potential.

Converging platforms

There are three main smart card operating systems, the Java-based OpenPlatform, Multos and the Microsoft Windows operating system. The platforms are all vying for their own technological dominance. Some of them come at it from a pure technological point of view, others from a more marketing point of view.

The Multos and Java card are now entrenched in the smart card market, offering security and multiple applications for end-users. However, it is the entry of Microsoft into the market that is stirring up most interest.

"Microsoft's entry into the market has a lot to do with people perceiving that this is now 'real man's technology', not the kind for rocket scientists, and is no longer an esoteric part of the technology framework, but a core part of the forward strategy of companies such as Microsoft," Freedman claimed.

Smart cards form an integral part of Microsoft's recently announced .NET initiative, and Fujitsu believes that while there are a number of operating systems to choose from, Microsoft will be successful in the market.

Fujitsu has negotiated with Microsoft to deliver its smart card-based application development and management system, SmartCity, on Microsoft's smart cards.

Freedman compared the situation in the smart card market to the old days of Unix versus Windows, versus proprietary operating systems in the PC/server world.

"They are all perfectly good, some with higher security (MULTOS), some with easier application development (Java card/MS Windows for smart card), but at the end of the day it will be the one who wins the high volume markets that survives. We think this will be Microsoft, for all the usual reasons," Freedman said.

to work on OpenPlatform and vice versa.

"Visa has been working closer with Microsoft, to standardise the Microsoft and OpenPlatform operating systems," Kalra said.

However, not everyone in the market sees Microsoft as the 'saviour' for smart cards. Charalambous doesn't believe the company is a force in the market yet.

"There is a lot of hype about the Microsoft card, but with all due respect it is just that, pure hype. At the end of the day there have been no specifications as to what will be done," he said.

"We have two gods in the world, we have the MasterCard God and the Visa God, and both of these have made a decision some time ago to go to war" was Charalambous' view of the platforms.

Despite the war, Charalambous believes that eventually there will be a convergence of the operating systems.

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ture, marketing and branding attitudes of major corporations, and poor promotion of the benefits of smart cards.

Smart cards can be used in a number of applications, ranging from verifying a computer user's identity to storing a person's medical records. These programmable cards have the potential to replace all other cards in an individual's wallet. However, it has been a slow process.

Success of smart cards

To date, the potential of smart cards has gone relatively untapped as consumers continue to simply ignore, or are unaware of, the benefits of smart cards.

Although there are around two billion smart cards in operation, over half of these are "dumb cards", used, for example, as phone cards.

"Half [the smart cards in use] are very low cost phone cards, in the industry they're chip cards they're not regarded as smart cards. They basically have a little piece of memory with some security on it; this tends to be a very competitive area and is very mature," explained Brian McKeon, Keycorp's general manager for smart cards.

SIM cards in mobile phones is by far the biggest and highest value market; dumb cards is the next biggest market, with almost every Western telco, along with a number of telco's in developing economies moving to smart cards, to combat the problem in collection of cash; and transport ticketing is the third biggest market for smart cards.

"Smart cards have gone extremely well in the vertical markets, where smart cards are used for a specific vertical to do exactly what the customers want," explained Freedman.

back in our headquarters in Germany for the last 25 years, but here we are in Australia, in the year 2000, and we are still trying to educate the marketplace," he said.

Keycorp operates in the higher end smart card market, dominated by SIM cards, which is growing at around 50 per cent per year. However, it sees high costs as the major barrier to the growth of smart cards.

The cost problem has been tackled headon with the release of the new \$3 OpenPlatform smart card. The card, launched by Gemplus, Sun Microsystems and Visa, is based on the multi-application Java card platform, allowing it to host

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Vipin Kalra, Visa's head of chip cards in Australia and New Zealand, said Visa has always promoted the standardisation of operating systems, declaring that the OpenPlatform and Microsoft operating system will be compatible – enabling the Microsoft smart cards

"I think there will be a time when smart cards are accepted on a common terminal regardless of the operating system, like now when you enter a shop or restaurant, there is an EFTPOS terminal which can process your transaction regardless of whether you use Visa or a



Smart cards are looking to replace all this with just one card, but to date the vision hasn't been matched in reality.

MasterCard," Charalambous predicted.

And Charalambous is also wary of the claim that Microsoft's operating system will be standardised with OpenPlatform, saying that they have been saying that for the last two years and at the end of the day, everyone is just sitting back.

However, Charalambous welcomes Microsoft into the market and reveals that Orga is also closely linked with the development of the Microsoft operating system.

"When Microsoft launched its smart card plans, Orga went to bed with Microsoft and joined its development team. We have signed 28 licences with Microsoft - this enables us to work closely with Microsoft on various different platforms, avenues and products."

It is the surge of companies looking to get on board that proves that Microsoft are set to be a major force in the smart card market.

Marketing and branding

Despite the debate raging about the abilities of each operating platform, Fujitsu sees the smart card market from a different perspective.

Its 80 sites worldwide basically operate in vertical markets, where standards don't matter that much. According to Freedman, the company aims to deliver the business benefits in specific verticals - making the operating system irrelevant.

"One of the things about smart cards is whoever owns the keys to the card, the cryptography, owns the systems," Freedman said.

"The real issue is making the business cases work to allow interoperability to have any meaning, it really isn't about the particular operating system you're using."

However, it is the various operating systems that make the headlines and Freedman admits that everybody gets pretty hyped and excited about operating systems, but he says that Fujitsu simply uses whatever works at the best price break.

Freedman argues that no matter what operating system is used and

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what that operating system can do, no smart card will ever replace all other cards in people's wallet.

He states that marketing and branding will never allow one card to be used in a competitor's application. Freedman says that organisations perceive cards as a mechanism to control customer transactions, and consumers relate the branding to the applications.

"Smart cards are no different, if you brand a card one way, consumers will expect to use it for whatever the positioning of that brand is, if you put brands on a smart card that are in conflict or don't make sense, the consumer will get confused," Freedman said.

As such, consumers remain unaware of the variety of applications that may be on a smart card, and are

limited by what the company branded card allows them to do.

"My view is that having a technology that could conceivably have many different applications on a single card is totally irrelevant - you will only ever find the applications that are done by the brand on the card," Freedman said.

"You're unlikely to see ANZ doing applications on Westpac cards or vice versa, in effect branding, commercial and business issues outweigh the technology."

Charalambous disagrees and while he accepts that branding is important, he recognises that consumers drive the business, and the smart card users will demand a generic platform.

"It's not up to Visa or Microsoft to dictate terms, it's up to the consumers," he says.

Charalambous says users won't put up with needing four or five cards - there will be a convergence of cards.

"It's only a matter of time before this happens, the whole idea why companies are coming in now [with individual branded cards] is because they want to capture the imagination of the people, capture the marketplace and make a few dollars, before competition starts to come."

The future of smart cards

Price is seen by most as the key to the successful rollout of smart cards. Kalra believes that the outlook for the smart cards market is very positive, saying that the new \$3 Open Platform smart card will change the face of the marketplace, especially for banks.

"I think the take up rate will be relatively slow, by IT standards anyway. I think we'll see cards being used in key applications where they are very good at doing

the particular things they do," was the view of Freedman.

He cited two factors, price and the ability of people to build successful business cases, as keys to the future success of smart cards.

"There are not too many people out there who actually understand how to build a smart card business case, with maturity; a lot more people will learn more about the industry," he said.

Around the globe the future is looking bright for smart cards.

Charalambous believes that in the next three or four years the market for smart cards in Australia will explode. However, he believes that this growth will be driven, not by price, but by rapid growth in the Asia Pacific, which will leave Australia with no choice but to follow.

Driven by low card costs, Kalra argues that the US has woken from its slumber and is growing dramatically, and he believes it will probably soon lead to growth in the market.

While Freedman agreed with the general positive outlook for the smart card market, he argues that Microsoft's entry into the market

has bolstered the reputation of smart cards as part of the technology framework.

"Europe went ahead very rapidly early on, but has slipped back a bit. The US looks like it is really going to take off now, it has been very quiet for a long time, but we are seeing a huge amount of activity with some of the bigger names; I think that's good as it will drive the cards market forward," Freedman said.

Despite the bold predictions, smart cards continue to fall behind the promises and expectations. Australia continues to lag behind on the world scene, and even the global stage is still a long way from fulfilling the potential of smart cards.

25 years after their original development, smart cards are still battling. However, insiders in the smart card market appear to be very confident of strong growth in the coming years.

Whether this growth is a result of falling costs, enhanced business plans, a convergence of the back-end operating platforms, or spearheaded by rapid growth in Asia, only time will tell.

Green light from ACCC

TELSTRA has secured the green light from the Australian Competition and Consumer Commission (ACCC) to take a controlling interest in Keycorp.

Under the deal announced in July, Keycorp will operate as an independent company, but is set to be better equipped to grab a slice of the \$4.3 trillion global payments market.

Telstra will move its EFTPOS payments carriage installation and maintenance business into Keycorp, with the companies planning to establish a worldwide Internet payments business.

Keycorp is forecasting strong growth from the deal, predicting 50 per cent growth rates over the next couple of years and then remaining at 20 to 30 per cent after that.

A spokesperson for Keycorp said the deal was exciting for the company, with Keycorp looking to build its international presence, focusing on growth in the bigger markets in Europe, the United States and Asia.

The deal still has to satisfy legal, regulatory and commercial requirements, as well as shareholder approval, but the ACCC approval removes a potential stumbling block to the success of the deal.

