



Card payments in Asia Pacific

The state of the nations

FINANCIAL SERVICES



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Executive insight



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Traditionally, Asia Pacific has been a region dominated by the use of cash. In recent times, the increase in the use of credit cards and subsequent transactions has led to the evolution of the payments ecosystem. In this paper, we consider what this payments ecosystem looks like, outline the challenges and opportunities that exist in the payments system across Asia Pacific and consider the next stage of evolution for payments.

Growth in the use of card payments has been significant in recent times. As a result, some mature markets are struggling to cope with increasing volumes of transactions after years of under investing in payments infrastructure. At a time when many banks are re-evaluating their core competencies, the future of payment systems cannot be ignored. There are many options available – payment systems can be streamlined, offshored or outsourced, and there are both risks and benefits involved in doing so.



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Much of the payments infrastructure around the region is inconsistent and inefficient, hindered by legacy systems and the contesting interests of different stakeholders. Consumers are increasingly concerned by security and privacy issues. In a world once dominated by banks, there are already a wide assortment of players, from transaction processors and card scheme providers, to technology vendors and connectivity partners.

This payments ecosystem continues to be bombarded by commercial, technological and regulatory factors. These factors need to be understood by all players in the payments ecosystem as they help to explain the future direction of the sector, and the opportunities that exist for current industry participants. Opportunities will continue to emerge for new entrants to shake up the landscape. In turn, the position of some existing players in the market is likely to be threatened. Interestingly, many international vendors of payments software applications and third party processors are still at the stage of establishing their footprint in the Asia Pacific region, which will also impact on the dynamics of the payments ecosystem over time.



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The emerging vision of the banking industry suggests there may be a continued shift from the in-house model to a shared services model, or what can be referred to as “Payments as a Service”. However, there are many other future states that might emerge from the current situation.

Having the right strategy, aligning with the right partners, and relentlessly striving for further efficiency gains, will all be key to survival and this KPMG paper is intended as a starting point for that important discussion. We therefore hope you find this paper interesting and we would welcome the opportunity to discuss it with you.



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Thomas J. DeLuca is Managing Director and co-founder of Advanced Merchant Payments Ltd, a Hong Kong-based financial services company trading as AMP Capital, dedicated to helping banks provide capital to merchant clients through effective loan management processes and strategies. Prior to founding Advanced Merchant Payments, Mr. DeLuca served as Senior Vice President, Corporate Development for Planet Payment, Inc., a leading multi-currency payment processor. He started his payments industry career at American Express, where he provided legal and strategic advice to the merchant services division regarding electronic commerce matters, consumer privacy, marketing, and general commercial issues pertaining to credit card transactions.

Professor John Ure and Dr. Peter Lovelock

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Professor John Ure is an economist and director of the Telecommunications Research Project at the University of Hong Kong, editor and principal author of *Telecommunications Development in Asia* (HKU Press, 2008). Dr. Peter Lovelock is a political economist, co-director of TRPC Pte Ltd., and a China specialist. Recent publications they have co-authored with KPMG member firms include *Mobile Payments in Asia Pacific* (September 2007), *The Video Games Market in China: Moving Online* (November 2007), *Destination Digital: Opportunities in China's media and advertising market* (November 2008) and *The state of the telecoms industry in Asia Pacific* (April 2009).

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The current state of payments in Asia Pacific



Asia Pacific has not always been at the forefront of innovations in card payment transactions however, the changes occurring across the region are significant nonetheless. Economies of scale have increased as a result of growth in credit card usage across a region that was, until recently, dominated by debit cards and cash. Further, the number of people connected to the internet has increased exponentially, allowing for a greater number of online transactions. Other factors that are driving change include the arrival of specialist third party processors (TPPs), known also as payment service providers (PSPs) by the card schemes, and the emergence of increasingly sophisticated vendors of financial management software applications.

There have traditionally been five major stakeholders in the payments ecosystem: issuing banks, cardholders, merchants, acquiring banks and card schemes. As time passes, the chain is also being populated with more specialised payment processors, such as First Data, Global Payments and Planet Payment in traditional transactions, and new online transactions processors such as PayPal in the US, BPay in Australia, and AliPay in China. Software vendors, as noted above, are playing a more important role in the region as acquiring resellers. Telecommunications companies are also becoming key players and have many years of experience in managing stored-value calling cards, billing and mobile payment solutions.

At each linkage in the flow of payments, stakeholders are seeking to improve efficiency through innovation. Economies of scale can be achieved through inter-operable networks and systems as well as “shared services”. However, achieving efficiency is not always easy in light of differing stakeholder interests and questions as to how the benefits are shared.

The silver lining to these clouds is that payments by electronic means are growing and diversifying into all sectors of the economy, both public and private, corporate and consumer, so the pie is getting larger even if the pieces of the pie are constantly being redistributed. Businesses are shifting their thinking to ‘participation’. The evolution of payments necessitates the addition of third party links in the chain, as the previous stakeholders are unable to efficiently provide



the technological advancement or know-how required to deliver the solutions demanded by consumers. If this evolution is not accepted by the traditional stakeholders, they risk forfeiting their link in the chain, and there are already examples of this occurring.

Card usage in Asia Pacific

At the end of 2007, credit card payments in the Asia Pacific region were close to USD 1.3 trillion, around 30 percent of the global figure. Being home to upwards of 50 percent of the world's population, this means card usage in the region has considerable growth potential. Nearly 70 percent of the card usage was for the purchase of goods and services, and around 30 percent for forwarding or the withdrawal of cash. Visa and MasterCard accounted for 90 percent of the card usage by volume and by value (see table 1).¹

Table 1: Card brands and transactions values in Asia Pacific 2007

| Card brand | Cards (million) | Transactions Value (\$ billion) | | |
|------------------|-----------------|---------------------------------|------------|------------|
| | | Total | Purchases | Cash |
| Visa | 446 | 845 | 556 | 289 |
| MasterCard | 189 | 311 | 215 | 96 |
| JCB | 59 | 67 | 62 | 5 |
| American Express | 10 | 55 | 54 | 1 |
| Diners Club | 3 | 11 | 10 | 1 |
| Total | 707 | 1,289 | 897 | 392 |

Source: The Nilson Report, #903, May 2008

By country, Japan headed the rankings of total transactions (attributable to the size of the economy), with USD 209 billion of purchases, followed closely by South Korea (see table 2). China and India clearly exhibit enormous potential with just USD 24 billion and USD 2 billion of payments respectively when considered in the context of population and economic growth indicators. Australia and Hong Kong have high transaction volumes on a per-capita basis.

Table 2: Total value of transactions by general purchase cards by country

| Country | Total Value of Purchases by Card |
|-------------|----------------------------------|
| Japan | USD 209 billion |
| South Korea | USD 203 billion |
| Australia | USD 140 billion |
| Taiwan | USD 24 billion |
| China | USD 24 billion |
| Hong Kong | USD 20 billion |
| New Zealand | USD 11 billion |
| Thailand | USD 6 billion |
| India | USD 2 billion |

Source: The Nilson Report, #903, May 2008

¹ Over 50 percent of cards (426 million) were issued by the 48 largest issuing banks in the region.

Japan is something of an exception.² Although over 99 percent of card transactions in Japan involve credit cards, their use in Japan is limited. According to the Bank for International Settlements (BIS), in 2005, the per-capita use of all types of cards for transactions in Japan was just 22, compared with 35 in Singapore, the only other Asian country for which BIS data is available. In comparison, the per capita usage was 104 in the UK, and 145 in the US. However, in the UK and the US, credit cards were involved in less than 50 percent of card transactions.³ Table 3 shows the relative importance of payment methods in these four countries.

Table 3: Relative importance of payment instruments (percentage of transactions)

| Country | Credit transfers | Direct Debit | Cheques | E-money (SVC) | Cards | Credit cards |
|------------------------|------------------|--------------|---------|---------------|--------|--------------|
| Japan | 60% | - | 5.3% | - | 75.3%* | 75.1%* |
| Singapore ⁴ | 1.3% | 2.7% | 4.3% | 83.2% | 8.5% | - |
| UK | 21% | 19.9% | 10.7% | - | 48.4% | 12.1% |
| US | 6.5% | 10.4% | 28.6% | - | 54.5% | 23.9% |

* Data from 2006 Survey

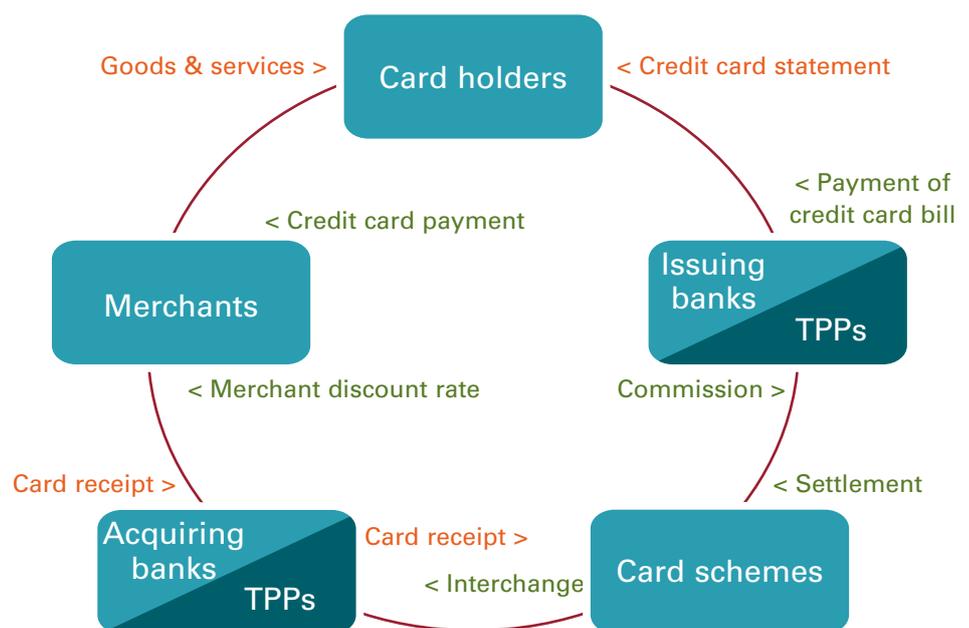
Source: Bank for International Settlements, 2009

The payments ecosystem

The two key aspects of payments systems are data processing (in other words, moving the information) and financial settlement (moving the money).

Settlements (and clearances in the case of “open loop systems”) of credit, debit, and stored value card transactions, are usually, but not always, channelled through a bank using scheme providers as necessary intermediaries. However, the data processing itself may be outsourced to a TPP.

Figure 1: Traditional stakeholders in the card payments cycle



² Mann suggests this is the outcome of supply-side or institutional rather than demand-side or cultural constraints. From the evidence 'the general impression is that the consumer-credit market as a whole is approximately as attractive to consumers as the analogous market in the United States.' Ronald J. Mann 'Credit Cards and Debit Cards in the United States and Japan' Monetary and Economic Studies, January 2002.

³ Bank for International Settlements data show that in 2006, of the more than 48 billion transactions (by volume, not value) in the US conducted by cards, 22 billion involved cards with a credit function and 26 billion with a debit function. In the UK, of the nearly 7 billion transactions, less than 2 billion involved cards with a credit function and nearly 5 billion with a debit function. By contrast, the number of transactions in Japan involving cards was less than 3 billion, of which 2.8 billion involved cards with a credit function.

⁴ There were 4.4 million credit cards issued in Singapore in 2005 according to the Monetary Authority of Singapore.

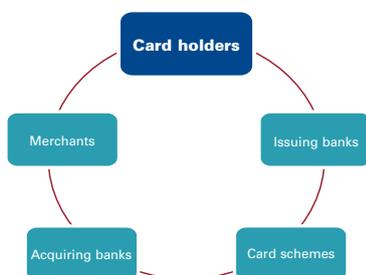
In the case of “closed loop systems” cards, such as American Express or Diners, the accounts of all the transacting parties are held within the same financial institution, so clearance is not required for settlement.⁵ However, these companies are also seeking to become networks (open loop systems) and partnering with real banks, to either issue cards or acquire transactions.

In each of the post or pre-paid, open or closed loop scenarios, reconciliation is required before settlement and this in turn requires data processing. The data process itself yields powerful market information that can be useful to all players in the cycle. Avoiding fraud, ensuring the security of information, risk management, and financial reporting are other time-consuming tasks that require careful data processing and scrutiny.

While these processing functions are good candidates for outsourcing, the use of TPPs remains in the early stages in Asia Pacific. For the acquiring banks, these activities are costs which can often exceed the margins they make on their acquiring activities. These acquiring-related activities also tend to be buried on the consumer or ‘retail’ side of the bank, and are often viewed as a necessary loss-leader for the more profitable card issuing portion of the bank’s business. This asymmetry does not help the banks identify the true costs of their card business.

The evolution of the card market is driven by the interplay of various stakeholders as markets and technologies change. As innovations, such as a card on a mobile phone and multi-currency payment facilities become available, it becomes easier and more convenient for cardholders to make purchases. As a result, cardholders are able to spend more frequently. This benefits merchants utilising innovations in software and communications. The result is an increase in market liquidity which in turn helps the banks and the card schemes. Further, it creates an opportunity for more participants in the payments chain to facilitate the successful delivery of these innovations at an affordable cost.

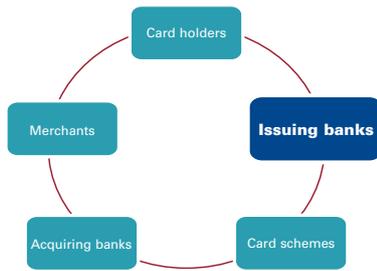
While the payments ecosystem is not a zero-sum game, the gains are not shared equally among stakeholders. Obvious cases arise from the discounts or interchange rates between merchants, acquiring banks and the card schemes, and the conditions of participation that card schemes require of merchants. Each of these key players has its own commercial interests and competitive position to develop or defend.



Cardholders

Cardholder information is a vital part of the payments process. It serves to establish credit ratings and spending patterns. In highly competitive markets, qualified cardholders can choose to subscribe to multiple cards from numerous issuing banks and non-bank financial institutions, and can choose at merchant stores between credit and debit card payments and non-card payments, such as cash. Traditionally, cardholders are not charged a transaction fee for credit transactions, but are often charged a transaction fee for debit and pre-paid transactions, whether at the load, withdrawal, or redemption stage of the transaction.

⁵ Visa, MasterCard, JCB, Discover are examples of major credit cards; American Express and Diners are examples of major charge cards; Visa Debit, MasterCard’s Maestro and China UnionPay are examples of debit cards; Octopus in Hong Kong, Suica and QuicPay in Japan, and EZlink in Singapore are examples of stored-value cards (SVC) in Asia. The NETS card in Singapore is an example of an ATM and POS card linked to a bank account.

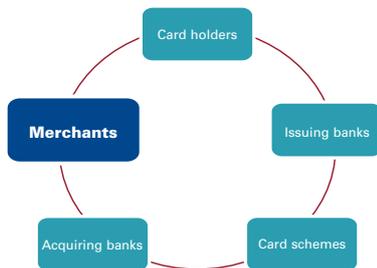


Issuing banks

Banks and other large deposit-taking financial institutions have privileged information about their customers for the purposes of approving and issuing credit cards. Similarly, non-bank institutions, such as large department stores and stored value card issuers, have privileged information about their regular customers, and may also issue credit cards, either with the branded card schemes, such as Visa and MasterCard, or their own brand. There have been examples in the region of companies going alone in this way, but they have struggled due to the difficulty in attaining economies of scale, especially in international markets. Often, companies with strong brands will issue a card as a reseller of an underlying issuing bank.

Issuing banks tend to make most of their profit from the rollover of credit card debt. In the debit and pre-paid sphere, profit is made from a transaction fee or charge to the customer or periodic fees for availability, and usually balances left unused for a certain prescribed period are taken by the issuer on account of the card being declared dormant. They have a direct interest in promoting spending by cardholders within their approved credit, overdraft or load limits to encourage rollover.

There are only a few Asia Pacific markets where issuing banks currently share credit information, and in some cases, such as Hong Kong, sharing is exempted from the provisions of local data privacy protection laws.

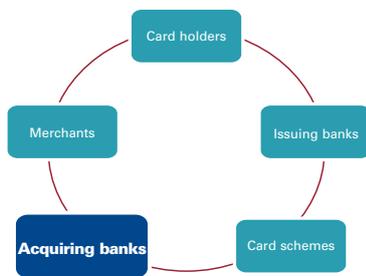


Merchants

Merchants are placing growing pressure on banks to help them reduce transaction costs. Some very large merchants connect to the largest issuing banks directly, completely by-passing the card schemes. The Coles supermarket chain and Woolworth stores in Australia are such examples.

One of the most contentious costs relates to the use of point of sale (POS) systems such as card readers. These are installed at the cost of the merchant through purchase or rental, or at the cost of the acquirer or the system providers, in the latter case pursuant to a receivables acquisition or debt factoring arrangement. Increasingly the terminals are inter-operable between cards schemes, but there are cases in many parts of the region where it is common to find multiple terminals for different cards.

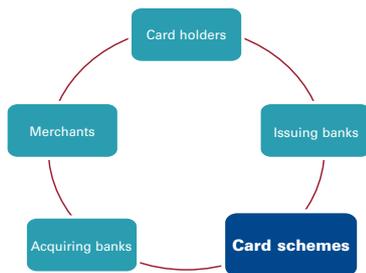
The acquiring bank or agent redeems the card payment receipts from the merchant at a discount to the face value of the transaction. This merchant discount rate (MDR) varies around Asia Pacific depending upon the degree of competition in the market between acquirers, the merchant's size, scale and frequency of turnover, the nature of the banking relationship between merchant and acquiring bank, and whether or not there is monetary authority regulation of interchange rates and other fees.



Acquiring banks

Acquiring banks make money on card transactions only if the MDR is greater than the interchange rate from the card schemes. A stronger incentive is typically to secure and develop other business through the relationships they have with the merchants. These services may commonly include loans, managing investment portfolios, and handling the monthly payroll. While balancing these activities, the acquiring side in many cases may increasingly be decoupled as acquiring needs greater scale and reach.

In any given transaction, the acquiring bank and the issuing bank can be the same entity. While this would seem to create an incentive for larger banks to by-pass the card schemes for settlement purposes, such banks have tended to use their position to negotiate special interchange rates with the card schemes.



Card schemes

The card schemes pay the acquiring banks the face value of the card payment receipts minus a discount or interchange rate. They complete settlement by receiving the face value of the payment receipts from the issuing banks which collect the funds from their cardholders. Typically, the card schemes share interchange fees on a particular transaction with the bank that issued the card. However, for banks on the largest card schemes a change is underway. Since Visa and MasterCard became public companies in 2008 and 2006 respectively they have a strong incentive to reduce these payments to issuers. Rather, their issuing banks are now ordinary share holders in a listed company, standing to benefit from dividends and from any gains in their share values.

Focus on Australia



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Australia's card payments market has been growing steadily, even if by regional standards the market remains relatively small. By the end of 2008, in a population of 21 million, there were over 14 million credit and charge card accounts in Australia, up from 8 million 10 years earlier, and the average value of monthly purchases (excluding cash withdrawals) is over AUD 17 billion. On an annualised basis, this represents 25 percent of Australia's GDP measured in terms of purchasing power parity.

From 1974 until 2006, Bankcard was a card scheme issued and accepted by all of Australia's leading banks, offering local competition to Visa and MasterCard. Over time it proved unable to sustain sufficient investments in new products or match its rivals' marketing resources, resulting in a decline of its market share to the point where the banks stopped promoting it. As a result, the banks have moved from close cooperation towards a more competitive stance.

This is also partly a way to avoid future regulatory pressure. Efforts by the Australian Competition and Consumer Commission and the Reserve Bank of Australia to open the market to greater competition, both domestic and overseas, as a way to drive innovation has been controversial. A growing industry consensus seems to be emerging in favour of more transparent and flexible practices, and open competition. Merchant groups

have been pressing for this, in their submissions to the Reserve Bank of Australia as part of the consultation process.

The first, and so far only, non-bank to receive a special authorised deposit-taking institution (ADI) licence as an acquirer is Tyro Payments.⁶ This has been possible because of a recommendation of the Treasury's 1997 Financial Services Inquiry, otherwise known as the Wallis Report,⁷ for the setting up of the Australian Prudential Regulation Authority (APRA) for all deposit-taking institutions.

APRA issued two Specialist Credit Card Institutions (SCCIs) licences for deposit-taking institutions, one an issuing licence to foreign-owned GE Capital, the other an acquiring licence in 2006 to locally incorporated MoneySwitch, trading as Tyro Payments. With its special licence, Tyro Payments has become not a bank as such, but an acquirer with a banking authority and a principal member of the card schemes. Tyco's licence restricts it to payments processing, including financial clearance and settlement,⁸ for credit cards, debit cards, direct debits and BPay, a subsidiary of CardLink. CardLink, owned by a consortium of Australia's financial institutions, provides credit card authorisations, electronic bill payments (BPay) and paper voucher processing, which arises mainly on occasions when electronic communications fail.

⁶ This does not entitle Tyro Payments to take deposits.

⁷ Financial System Inquiry, 1997 <http://fsi.treasury.gov.au/content/downloads/FinalReport/Prelim.pdf>

⁸ For credits and debits to consumer accounts, clearances and settlements are conducted through the Consumer Electronic Clearing System (CECS), and batch processing for merchants through the Bulk Electronic Clearing System (BECS).

Tyro Payments entered the market with an all-IP platform, a software application that offers end-to-end payments processing for merchants with broadband Internet connections. Their first major client was Medicare, a government agency that runs Australia's universal health insurance programme and for which Tyro Payments handle rebates and claims as part of payments processing.

This development has given the four major acquiring banks further reason to fight back, making good on their promise to add value to the industry through cost efficiencies and innovative services. They have created more value and more "stickiness" by adding applications to their terminals, subcontracted to smaller, specialised local software players. They are working with middleware providers to integrate POS systems and e-commerce applications.

On the other hand, some of the banks' competitors in the acquiring business argue that new security standards like 3DES encryption, EMV chip cards and contactless standards, as well as mobile payments, have been slow to gain traction. In their view, this is in part owing to the major acquiring banks owning the terminal fleet and legacy

systems for back-end processing, which are expensive to replace.

There is another notable development in the Australian market that has driven competition and innovation. Coles and Woolworths, the dominant retailers in the country, have moved away from the big acquirers by taking the switching technology in-house and in some situations switching transactions directly to the issuing banks, circumventing the scheme networks. This self-acquiring model has provided the retailers with significant efficiencies, flexibility and control.

These developments may explain why most Australian banks have been relatively guarded about outsourcing processes to third parties and wary of the risks of jeopardising a close and direct relationship with their larger merchant customers. For the future, the growth of independent processors is likely to continue, and this may necessitate some of the banks changing their position on outsourcing. In response, or in tandem, the banks are likely to pay attention to upgrading their networks to all IP broadband.⁹ Such innovation could bring them into competition with the card schemes.

⁹ EFTPOS clearing is done through the Consumer Electronic Clearing System (CECS). The card schemes do their own clearing.

The development of the payments ecosystem



The developments in the electronic payment transaction market in Asia Pacific over the past decade have been characterised by substantially increased capacity of electronic transactions, increased card uptake and new functionality (notably with the emergence of the internet). At the same time there have been new challenges due to the increased cost of providing innovation, processing electronic payments, and the increased cost of regulatory compliance.

In some ways the traditional participants in the payments chain are not well equipped to handle these challenges. Instead, it is new entrants that are providing the links in the payment chain to address these new challenges.

These new players in the payments space are offering systems and services such as payment software platforms, hardware technology such as microchips, SIMs and security devices, payment processing services and communications services (internet and telephony) to replace the legacy systems and manual services of the traditional stakeholders. Further, the newest participants are creating virtual networks on the issuing and acquiring side of the chain at substantially reduced cost and increased convenience. This has the potential to bypass many traditional stakeholders unless these stakeholders adapt to this change.

Third-party processors

The most established of the newcomers to the payment chain in Asia Pacific are third party payment processors or TPPs. In the traditional bank-centric card payment space, TPPs can add value by taking non-core low-profit and non-profitable operations away from the banks, such as card payments processing and settlements. Most importantly, TPPs can offer economies of scale by processing vast numbers of transactions on behalf of multiple client banks, reducing the unit cost of transactions by operating from regionally or globally unified payments platforms¹⁰ and through specialisation.

¹⁰ In cases where the legacy networks of banks have been inherited through mergers and acquisitions, problems of standardisation and interoperability can be difficult even across the banking group, let alone between different banking groups.



TPPs can add value through the introduction of payments services tailored to the needs of specific merchants in specific industry verticals, such as hospitality, tourism, transport and logistics. In the case of major hotels, for example, requests for credit authorisations by guests are commonly estimated by the hotel using a template consisting of the length of stay and the status of the guest, and the amount of authorised credit is then reviewed by hotel staff during night hours to determine when a fresh authorisation may be required. Platforms provided by TPPs to automate this process are not widely available in the Asia Pacific region, unlike in North America where outsourcing by the acquiring banks is far more widespread. As it forms part of their core business, TPPs are constantly upgrading their software platforms with the latest functionality to deliver innovative electronic payments solutions which surpassed the legacy systems of financial institutions.

Gateways and the Internet

The rise of the Internet has spawned an entirely new set of players that are interacting with the offline card payments world, while also exploring opportunities to by-pass it. The internet allows traditional “bricks and mortar” merchants to sell through their websites and e-commerce portals of various kinds to provide access to a multitude of online stores. Traditionally, the establishment of a merchant network to create a blueprint for customers to conduct electronic payment transactions involved the roll out of a physical POS network or ATM network at great cost and effort for acquirers and merchants to establish the relationship, not to mention the periodic hardware and software upgrades and maintenance that may or may not require physical presence at the access point. Now, virtual networks significantly reduce this upfront and downstream investment by using the internet to reach customers wherever they may be located, and by employing web-based upgrade and maintenance techniques. Virtual networks are so effective that an entire bank may operate without any physical branches or presence at all.

Online giants such as Amazon.com and search engines like Google not only provide shopping carts and online check-outs, but also undertake the necessary credit authorisations for repeat customers or for customers who provide their credit card details from the outset, before the cart has reached check-out, thus speeding up the purchasing process and improving the customer’s online shopping experience.

“Search and buy” companies like Google and Yahoo! and Baidu in China have teamed up with payment intermediaries such as PayPal, and AliPay in China to offer alternative “remote server wallet” services. These draw down from the customer’s account, which may be linked to either a bank account or credit card. These services have already made significant inroads.¹¹ In the longer run the ‘search-and-buy’ companies may even offer payments settlements for free, relying instead upon merchant advertising revenues, offering merchants the value of new customers in competition with the offer by the card companies of the value of the convenience of the card.

Point of Sale providers

The original job of a POS terminal was to substitute automated network connections for voice telephone calls for card authorisations. The availability of IP broadband in more mature telecommunications markets, together with advances

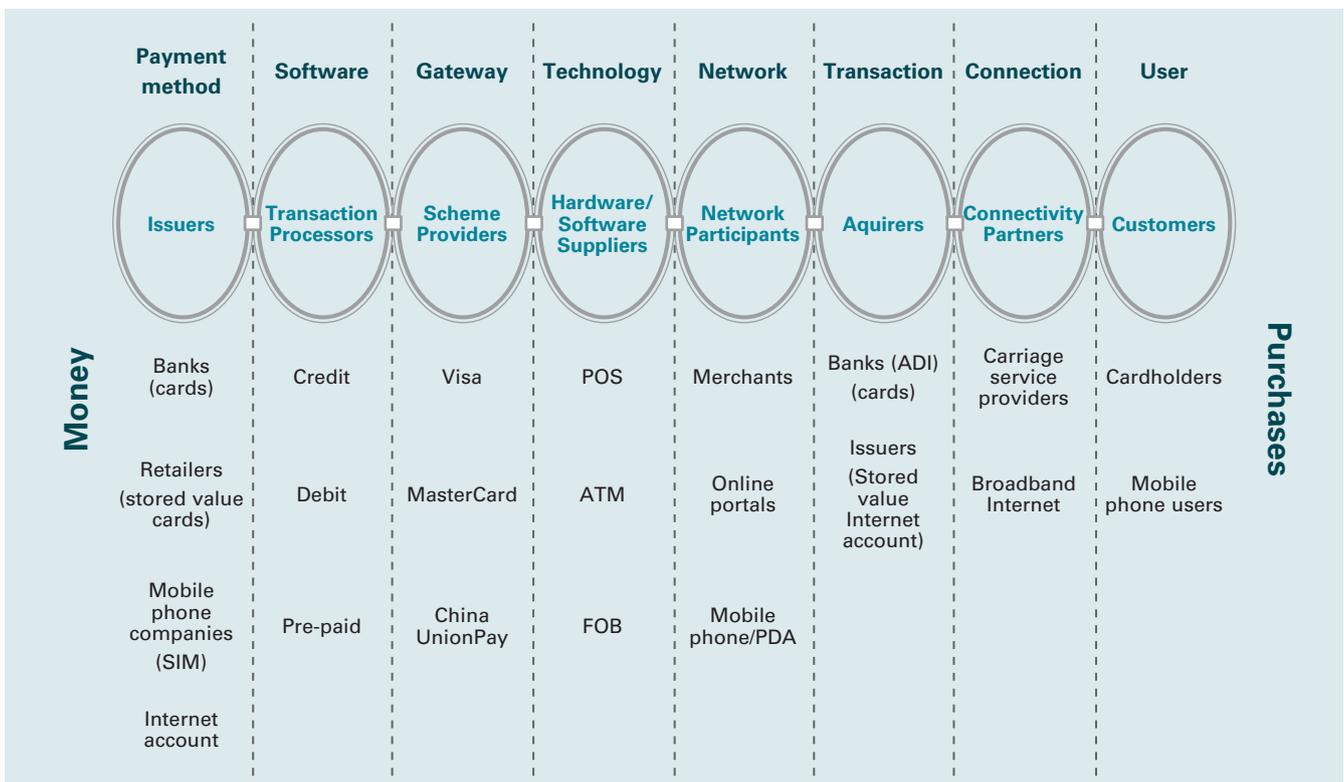
¹¹ McKinsey on Payments, Number 1, February 2008. McKinsey & Company

in data processing power, have transformed terminals into software-driven nodes in restaurants, hotels, larger retailers and other merchants. These have the capacity to manage a multitude of transaction data from different sources. A hotel guest, for example, may purchase from the hotel coffee shop or the bar, or incur room charges, or telephone charges. Software can allow a retail store at checkout to manage duty paid refunds for overseas customers. Driving these innovations are POS terminal providers, such as US-based MICROS, which has POS systems at over 220,000 restaurants, hotels and retail businesses.¹² The continued integration of functionality across POS networks also makes it possible for a merchant to accept a multitude of card transactions and value-add applications such as loyalty programmes, provided the software is appropriately integrated at the host level. Merchants in western markets have integrated these advanced POS capabilities into their core business operations; merchants in Asia are now demanding the same.

Telecom companies

By providing high speed broadband connections, telecommunications networks have made a big difference to the speed of merchant card processing, both online and offline. They have also entered the market with their own stored-value calling cards, and with mobile wallets. The next step is likely to be the Touch 'n' Pay mobile phone which stores the credit card on the secure element of the SIM card. With their customer base, location-based mobile services and billing expertise, the telecom companies are well placed to extend their role into the electronic payment transactions market. If they can improve the customer payments experience further and broaden the network blueprint, they will be a welcome and necessary addition to the payments chain (performing an issuing function rather than merely an acquiring function).

Figure 2: Current participants in the electronic payments cycle



Source: Pinsent Masons

¹² See Micros website: www.micros.com/AboutUs/



Focus on Singapore



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Developments in Singapore's payments ecosystem are the outcome of strategic government planning based upon commercial principles. The government's Infocomm Development Agency (IDA) has been promoting innovation in payment card technology and services with the introduction of contactless payments using mobile phones, based upon near-field communications technology (NFC). The IDA has also adopted a policy requiring the full interoperability of the NFC networks that have been trialled since the latter part of 2008. This means that compliant cards can be used in either system or across other systems, thereby ensuring a competitive market for the card industry.

The IDA's approach, put in place in January 2008 with the establishment of an NFC Roundtable, involving the banks, card schemes, telecoms operators and others, was supported by the findings of a report from consultants Consult Hyperion that stated that a system of fully interoperable NFC networks would create a market eight times larger than non-interoperable networks.¹³ The IDA agreed to act as project leader

to set up a Trusted Third Party (TTP) to provide management and service delivery. Singapore will be among the first economies in the world to launch contactless cards by mobile phone, and the first to do so in such an integrated manner.

Over the past decade, Singapore has seen a 200 percent increase in the number of credit cards issued and used, as measured by transactions value. In a population of 4.6 million, more than 5 million main cards and 1.2 million supplementary cards had been issued by end of 2008 (see Table 8).

These figures show that the number of cards issued, the value of transactions undertaken, and the rollover of credit have moved more or less in line with each other, although, predictably, rollover as a percentage of total transactions value tends to rise and fall according to general economic conditions.

The Monetary Authority of Singapore (MAS) is responsible for licensing banks. The tier-one acquiring banks in Singapore are the three local banks, DBS, OCBC, and UOB. Tier

Table 8: Credit and Charge Card Statistics (SGD million)

| Date | Main | Supplementary | Total cards | Billing | Rollover | Rollover % |
|------|-----------|---------------|-------------|------------|-----------|------------|
| 2008 | 5,056,582 | 1,221,333 | 6,277,915 | \$25,662.2 | \$3,420.7 | 13.3 |
| 2003 | 2,504,252 | 987,750 | 3,492,002 | \$12,422.9 | \$2,533.1 | 20.4 |
| 1998 | 1,369,089 | 681,508 | 2,050,597 | \$7,689.1 | \$1,113.4 | 14.5 |

Source: Monthly Statistical Bulletin, Monetary Authority of Singapore

¹³ See <http://www.nets.com.sg/corporate/achievement.php>

two acquirers include several of the world's larger banks, such as Citibank and HSBC. Competition between the banks in the card payments market is quite intense, with shoppers typically being offered special discounts and promotions by different merchants according to which bank has acquired their business. Some larger department stores end up with POS terminals from several banks, each dedicated to a particular card and its associated privileges, although reward programmes are increasingly being hosted online so that they can be accessed from any POS terminal.

There are over 8 million debit cards and 12 million "e-money" or stored value cards in circulation in Singapore. According to MAS, around 85 percent of transactions are completed using "e-money" or SVFs and around 7 percent involve other cards, such as credit and debit cards, gift cards, and discount cards.¹⁴ Once the aggregated stored value or "float" of an SVF exceeds the threshold of SGD 30 million, it is designated as being "widely-available" SVFs (WA-SVFs) and MAS approval for its continued use is required.¹⁵

Local bank ownership of merchants is an issue that has until recently worked against outsourcing to third party processors. Although POS terminals, which are mostly owned by the banks, could in theory connect banks directly, the practice in Singapore is to route communications through just one of the acquiring banks which can then claim a fee from other banks. In order to benefit their customers, the three key acquiring banks, which are also the three key issuing banks, need to offer their cardholders benefits in the form of discounts, rewards programmes and the like, and these are increasingly

hosted services. For this reason the dependency of these programmes on the POS terminal is diminishing, meaning that management of terminals could technically be outsourced to third parties. Complicating this development is the practice by which banks in Singapore discount the merchant discount rate by the interchange rate for "on us" transactions, which are processed through the bank's terminals, a practice described by one industry insider as "very damaging to the industry because it essentially says that interchange has no value to the bank." However, the most recent trend is for merchants to buy or rent their terminals directly from specialist POS vendors who have tie ups with the banks and use of their certified applications.

This segmentation of the market contrasts the government-supported initiatives for the SVFs to jointly support interoperable networks for public transport, road pricing and trial NFC mobile Touch 'n' Pay systems. By attempting to create a shared secure service platform, the TTP approach of the iDA should also result in network economies by avoiding a messy scramble for fees. The Singapore approach is to use innovation to bring about a greater degree of competition and choice, which in turn will build local companies that can compete regionally. NETS, for example, is 'actively pursuing growth opportunities and partnerships across Asia and has been working with companies across Asia, including China, Hong Kong and Southeast Asia, to bring the convenience of NETS payment solutions to their markets.'¹⁶

¹⁴ Sourced from Bank for International Settlements, 2006 (see Table 3)

¹⁵ An approved bank must guarantee the float of a WA-SVF.

¹⁶ NETS corporate profile: www.nets.com.sg

Challenges to Asia's payments ecosystem



When consumers or business customers use their cards to make purchases, two processes are set in motion. First, there is a data or information process and secondly, there is a payment or financial settlement process. The data process is empowering, yielding valuable market information and the opportunity to monetise it. The payments process can be enriching, although this depends on how the profits are distributed along the value chain and the positioning and business practices of the stakeholders involved.

As card usage grows throughout the region, the volume of data processing is driving the trend towards specialist payment processors. However, there are new challenges arising as this ecosystem develops.

Outsourcing

There are thousands of banks in Asia Pacific providing issuing or acquiring services, mostly for Visa and MasterCard and, to a lesser extent, other brands. Most of these banks run their own platforms for issuing and acquiring, but few can ever hope to achieve the economies of scale to run their systems profitably on a proprietary basis. They are increasingly confronted by the need to outsource, yet these banks are reluctant to abandon the services, given the growing significance of card payments to the bank's consumer and business clients.

The answer is that banks need to harness all the technological benefits that service providers can bring to payments processing, while ensuring this allows them to focus on building up their volumes of merchant transactions and providing value-added services to merchants in other ways to maintain their relationships.

Indeed, outsourcing of the data processing can permit banks to add value within their traditional competencies of financial innovation. There are inherent synergies in a bank leveraging its role as an acquirer with the practices of its commercial business units to offer solutions to businesses seeking capital. An example of the synergies inherent in a bank's acquiring and commercial business units is that of "merchant receivable lending". This product, pioneered in Asia by AMP Capital, allows the bank to provide financing secured by the settlement proceeds of the merchant's card transactions.



Risk management

Good data can lower credit risk. In developed markets credit rating agencies are widely used by creditors, however, in order to guard against non-creditworthy applicants, data sharing between banks is desirable. This is not as easy to achieve owing to bank confidentiality, competition between banks and personal data protection laws. This is true in Asia Pacific, and according to the Hong Kong Monetary Authority (HKMA), 'owing to inadequate information on the creditworthiness of households, many financial institutions in Asia have been poorly prepared to manage risks associated with consumer lending.'¹⁷

There are exceptions. In Hong Kong, banks were given an exemption in 2003 under the Personal Data (Privacy) Ordinance to share data for new credit accounts and the restructuring of existing loans. As a result, several banks have introduced tiered interest rate products based on the creditworthiness of individual borrowers, and "positive data sharing has also strengthened banks' credit risk management systems and enabled them to offer better terms to customers."¹⁸ Whether due to data sharing or improved economic conditions, charge-off ratios have declined, from 9.9 percent in 2003 to 2.7 percent in 2008.

The risk of credit card default has been spreading in the consumer markets of Asia Pacific, as the use of cards increases in popularity. In part it is demand-driven as Asia's middle classes catch up with the West. However it is also partly supply-driven as, in the wake of the 1997 Asian financial crisis, banks looked for higher margin business and moved into card issuance. In Hong Kong, for example, credit cards issued rose from 5.8 million in 1999 to over 9 million in 2004, and to 12 million by late 2008, all in a population of just over 7 million.

As outsourcing service providers are employed to process transactions, they can also offer the acquiring bank risk management reporting functions that assist the bank in minimising card-not-present (CNP) fraud.

Tax structuring and compliance

Many jurisdictions in Asia Pacific exempt financial services from VAT or GST, but the question then arises as to whether payments processors or service providers are themselves defined as financial services businesses. From the bank's perspective, this can have implications for the recoverability of VAT. If they are unable to recover VAT, this may offset the stated benefits derived from outsourcing.

Tax compliance in the payments chain is not necessarily complicated, given that incomes and fees can be documented and tracked down to the individual transaction level. However, where the income and commission structures differ in different markets it is important to be clear how those charges are split between regions, to avoid transfer pricing scrutiny.

Even if tax compliance is not complicated, it can be costly. With payments occurring across borders, it is important to establish a single location to have an overview of tax compliance issues.

¹⁷ 'The growth of consumer credit in Asia' Hong Kong Monetary Authority Quarterly Bulletin, March 2005
¹⁸ 'The growth of consumer credit in Asia' Hong Kong Monetary Authority Quarterly Bulletin, March 2005

Security

Concerns over security are naturally a central consideration as new payment models and solutions are developed. Where payment processing functions are outsourced, security breaches by third party vendors dealing with data could be risky to the business and even lead to criminal sanctions. Therefore, outsourcing contracts must clearly spell out each party's responsibilities and security measures should be specific and clearly identified.

There are already many examples of collaboration between competitors in the payments space, one example being the Payment Card Industry (PCI) Data Security Standard (DSS).

The PCI security standards are technical and operational requirements that were created by the Payment Card Industry Security Standards Council to help organisations that process card payments prevent credit card fraud, hacking and various other security vulnerabilities and threats. The standards apply to all organisations that store, process or transmit cardholder data – with guidance for software developers and manufacturers of applications and devices used in those transactions. A company processing, storing, or transmitting cardholder data must be PCI DSS compliant.

The PCI set of standards is enforced by the founding members of the Council: American Express, Discover Financial Services, JCB International, MasterCard Worldwide and Visa Inc. Non-compliant companies which maintain a relationship with one or more of the card schemes, either directly or through a member bank risk losing their ability to process credit card payments and being audited and/or fined. All in-scope companies must validate their compliance annually.



Focus on China



Simon Gleave
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China is an economy where cash is still indisputably king. Cards are however accounting for a growing share of transactions and more innovative approaches such as mobile payments and stored value cards, while only representing a blip on the radar, are already significant in absolute terms.

Indeed, most have taken to offering special promotions to attract new customers and then face a challenge in getting those customers to activate and use the cards. Some have offered to waive card fees as long as customers use their cards a certain number of times per year.

Banks setting up a card business in China have had to fight to attract customers. Strong competition in the market, between local banks growing market share and foreign banks trying to establish a foothold, means that few can charge cardholders annual fees.

In addition, banks are grappling with low rates of revolving credit on cards. Few Chinese card users currently carry revolving balances on their cards, depriving issuers from what is the mainstay of their profits in other markets.

Table 5: Card Growth in China

| Year | Credit Card | Debit Card | Purchase Volume (million) | Cash Volume (RMB million) |
|-------------|-------------|---------------|---------------------------|---------------------------|
| 2001 | 23,188,265 | 359,592,648 | 128,000 | 5,968,974 |
| 2002 | 23,058,041 | 473,461,470 | 187,482 | 4,352,483 |
| Growth Rate | -1% | 32% | 46% | -27% |
| 2003 | 26,947,375 | 621,658,155 | 328,575 | 6,846,856 |
| Growth Rate | -17% | 31% | 91% | 57% |
| 2004 | 31,827,538 | 736,654,352 | 604,009 | 9,789,137 |
| Growth Rate | 18% | 12% | 84% | 43% |
| 2005 | 40,404,843 | 919,004,628 | 936,882 | 18,081,090 |
| Growth Rate | 27% | 25% | 55% | 85% |
| 2006 | 49,293,908 | 1,080,000,000 | 1,835,000 | 23,650,066 |
| Growth Rate | 22% | 17% | 97% | 30.8% |
| 2007 | 90,260,000 | 1,410,000,000 | 2,900,000 | 30,140,000 |
| Growth Rate | 82% | 28% | 58% | 28% |
| 2008 | 142,300,000 | 1,658,100,000 | -- | -- |
| Growth Rate | 57.7% | 18% | | |

Volume includes both credit and debit cards.
Source: PBoC and CUP

Table 6: Interchange Rates

| Category | Issuer | CUP |
|---|------------------|---------------|
| Hotels, F&B outlets, Entertainment business, Handicraft stores, Art galleries | 1.4% | 0.2% |
| Airlines, gas stations and supermarkets | 0.35% | 0.05% |
| Public hospitals and schools* | 0 | 0 |
| ATM cash withdrawals | RMB3 to acquirer | RMB0.6 to CUP |

* For real estate merchants and car dealers, interchange fees are capped at RMB40 per transaction to issuers and RMB5 to CUP. For wholesale merchants, interchange fees are capped at RMB16 per transaction to issuers and RMB2 to CUP.

Source: MasterCard

Another reality for banks issuing cards in China is the low fees set by the People's Bank of China (PBoC). Government rules stipulate what merchant acquirers can charge merchants. In most countries, the biggest component of this fee, the interchange rate, is dictated by market forces. In China, however, there are maximum interchange rates for all local-currency transactions.

All RMB-denominated cards issued in China, whether they are debit or credit cards, run through the China UnionPay (CUP) scheme. Since its inception in 2002, CUP has also operated the key payments network in China, providing an inter-bank and intra-country card network that enables interoperability between different banks and cards.

Rival international card brands, such as Visa and MasterCard, can only issue cards via their member banks in China, denominated in another currency via their member banks. Their member banks can issue a single card that is "dual-currency", including both an RMB-denominated account in conjunction with CUP and a foreign-currency-denominated account, in conjunction with the foreign scheme, so that the card bears both brands. If the card is used in China, it is treated

as a RMB transaction, processed through the CUP network. If the card is used abroad, it is settled in the currency of the card, and processed through the foreign scheme's international network.

For its part, CUP is working to expand acceptance of its cards in the international market. By the end of 2008, it had concluded deals in 50 countries, providing acceptance for Chinese travellers carrying a CUP card with some 430,000 merchants and more than 540,000 POS terminals, and 600,000 ATMs.

A relatively low proportion of merchants in China accept cards for payment, although the growth rate is strong and the government is trying to encourage this trend further. Between 2006 and the end of 2008, the number of merchants accepting bank cards in China more than doubled to just less than 1.2 million. During the same period, the volume of cross-bank POS transactions also more than doubled. This increase in acceptance has been helped by the increased competition between merchant acquirers, which has driven down transaction fees.¹⁹

The central government has clearly articulated and pursued its objectives:

it wants bank card transactions to grow rapidly, and is pushing for this to happen first in the major cities and then across the country. This is important as it should eventually give the government far greater monetary policy influence, and will mean that the China banking industry functions in a more integrated way. Such a development should have a profound impact on everything from the growth in domestic retail transaction volume to tax collection. Processing payments, electronically rather than transacting them in cash, can provide a clear paper trail that must be respected.

The related objective is to leapfrog to the next generation of payment technologies, which may include near-field communications, e-payments and mobile payments. This may help bypass the bottleneck of infrastructure deployment in providing banking services to China's huge un-banked and under-banked population and also enable more efficient payment processing in sectors such as transportation and logistics.

¹⁹ Compared to many other markets, merchant fees in China are low, with a net average merchant service charge (MSC) of 1 percent. This makes the financial challenge to migrate merchants from cash to card-based payments much less difficult than in some other emerging markets where MSCs can be over 3 percent. The big challenge is to convince merchants that accepting cards is good for their business and then training employees to accept card-based payments.

The future state of payments in Asia Pacific



The changes overtaking the card payments systems in Asia Pacific arise from several sources:

- **New industry players** and new roles, such as third party processors, Internet gateways, telecommunications companies and large merchants which by-pass the card schemes
- **New technologies** ranging from broadband networks, NFC mobile handsets, the Internet, multi-functional POS terminals, and cards with new features and functions
- **New services** such as multi-currency payment options and duty tax refunds, data mining consolidated financial reporting for merchants and a variety of value-added applications.

Convergence on the cards

The commercial independence of Visa and MasterCard is one illustration of how the dynamics and structure of the card payments ecosystem is continuously evolving.

The story of the stored-value card segment of the market offers its own illustrations and is pertinent here because a marriage of these card functions is already happening. In Hong Kong, the world's most successful business-to-consumer contactless SVC operator Octopus was originally focused on a single industry, public transportation. In 2000, Octopus Card Ltd. was granted a Deposit Taking Company licence by the HKMA that removed the restrictive 15 percent ceiling on revenues from non-transit sources, allowing the operator to extend card services into activities such as use in retail stores, parking meters and libraries. It also allowed it to serve as a security entry device. By 2006, over 20 percent of its revenues came from these sources.²⁰

²⁰ See the case study on Octopus in *Mobile Payments in Asia Pacific*, published by KPMG Hong Kong, September 2007



In 2008, Citibank in Hong Kong issued the first credit card with a built-in Octopus card function. As SVC schemes extend into wider areas of application geographically, tie-ups with credit card schemes are a logical step, just as in recent years the credit card schemes themselves have added debit and ATM card features to their range of services. It is also interesting to note that in Hong Kong, the telecommunications carrier PCCW has on more than one occasion proposed the Octopus network be opened for interconnection in the same way as its own network. Such a move would ease the entry of card-issuing telecom companies.

Unlike in Australia, Octopus has not extended the use of its stored value card beyond the convenience stores and supermarkets, with which it retains a contractual relationship. By joining the card scheme interchange, Octopus stored value could be applied wherever the card schemes are accepted, just as if it was a credit or debit card linked to a bank account. The power of such a card is the ability to offer credit and debit like facilities to certain demographic groups, such as teenagers to conduct internet micro transactions for i-tunes and computer games music, and the uncreditworthy to access the convenience of electronic payments where the spend is limited to what is loaded onto the card. Such an open loop pre-paid stored value card, reloadable or one time use such as a gift card (similarly redeemable anywhere card schemes are accepted) has many security advantages over traditional credit and debit cards, which are linked to a credit or debit account with much higher and often dormant limits.

After being pioneered by companies such as bopo, Ezibonds and Heritage, the ANZ and Commonwealth banks entered the one time use and reloadable open loop stored value card market in late 2008, and Visa has created a division entirely dedicated to this space as of January 2009 (as a joint venture with a prepaid TPP Yalamanchili) to partner with financial institutions throughout Asia Pacific in the launch and processing of pre-paid card payments. This space is the newest and latest in card convergence throughout Asia Pacific, and has also attracted strict regulation as a financial product, particularly in Australia.

The growing interdependence of national economies has created a demand for payments systems offering services that are reliable and secure, cost effective and value-adding. The stakeholders each have an incentive to pursue interoperability, flexibility (for example in currency conversion) and security.

On the issuing side of the business, card schemes and banks have enhanced the value of cards by:

- Adding greater security using methods such as EMV for cards and FOB devices for internet transaction. Technology exists in the market to enable swiping of the card magnetic strip at the computer via a USB connection, thereby reducing the possibility for credit card numbers fraud
- Combining functions such as debit, ATM, SVC and credit onto a single card. Soon, we may only need to leave the house with one card in our wallets
- Promoting special discounts and privileges via loyalty programmes

- Diversifying the range of cards (such as open loop one-time use and reloadable stored value cards) and credit limits available
- Introducing card functions into mobile phones, creating the possibility that the wallet can be left at home.

The outcome is new participants in the issuing space, namely telecommunications companies and internet companies issuing online accounts to customers, usually linked to a card, but sometimes to another kind of account.

There are also software programmes that are able to communicate with chips and soon to be SIMs in cards and mobile phones, allowing the parameters of card or SIM usage to be controlled (for example by a parent or employer) via an internet portal. The bopo card and SIMIX in Australia are two examples of this.

Acquirers

However, some of the most important innovations are happening on the acquiring side of the business. The result is lower transaction costs, higher levels of productivity and financial control and a wider scope of available services. Of particular importance to the Asia Pacific region are innovations that are targeted at industry verticals. Multinationals have brought with them “best practice” and a demand for similar levels of service from payment processors in the region. International vendors of payment software applications and multi-functional POS terminals have entered Asia Pacific markets and have also alerted local software developers to the possibilities. International third party processors have also entered local markets, often in collaboration with major acquiring banks or scheme providers and with software application vendors which act as resellers to the industry verticals. Examples are given below.

- **Restaurants:** Vendors such as UCR, ServeBase, Micros provide software-driven electronic cash registers that connect directly to a payments processor, such as First Data or Global Payment
- **Hospitality:** Micros, Servebase and others provide POS terminals that tap into a hotel’s central database to collate all relevant guest information for automated daily updates of credit authorisations, and for final payment processing. They also serve as a sales channel, referring hotels to acquirers such a Global Payment Asia Pacific
- **Multi Currency Merchants:** These merchants are able to offer customers a choice of currencies for payment at the POS (see Planet Payment case study)
- **Retail:** Plutus from Pine Labs among others offers PC-based processing by large department stores and chain stores. Individual transactions are electronically relayed directly to the payments processor, while information about sales, stocks, performance indicators, tracking and alerts are processed through a data hub
- **E-commerce:** Online payment gateways that enable merchants to connect to acquirers across multiple jurisdictions and offer “remote server wallet” services include CyberSource, Global Collect and PayPal.



Marketing

For marketing purposes, transaction data offers merchants, banks and card schemes vital information about customer spending patterns and preferences. Since banks make most of their money on cards issued which cardholders rollover part of their debt each month, and card schemes only appeal to merchants if they result in new business, the drive to persuade card holders to spend is fundamental to the business model.²¹ However, the evidence suggests that beyond Australia, New Zealand, Hong Kong, Singapore and Taiwan, banks in other Asia Pacific economies generally do not collect data frequently enough or process it in ways that can yield highly segmented market information.

The *Asian Banker Consumer Credit Practice Survey 2007* estimated the consumer credit market in the region to be worth USD 3.9 trillion, accounting for around 30 percent on average of the banks' portfolio of loans. Yet less than 25 percent of the banks surveyed from the ten economies covered – Australia, China, Hong Kong, India, Indonesia, Malaysia, the Philippines, Singapore, Taiwan and Thailand – used advanced consumer segmentation techniques, and “less than 33 percent of the banks incorporate customer profiling or profitability analysis on a regular basis.”²² The report concluded that despite the banks' expectations that consumer credit would grow to 40-50 percent of their loan portfolio by 2010, at rates of growth prior to the 2008 financial crisis, the figure would be closer to 36 percent.

As mentioned previously, in their attempts not only to attract customers but also to secure repeat business, issuers and merchants either team up or in their own right offer loyalty rewards to consumers in the form of points redeemable for discounts on the products and services of their closed loop partners. There are not many credit cards in existence for example that do not partner with airline and travel companies to encourage spending. Recently, in the pre-paid open loop stored value space, such points are even redeemable for cash at ATMs.

²¹ Merchants have to bear the cost of interchange fees embedded within the merchant discount rate on all sales paid by credit cards, so the margins on new sales generated by the use of cards also need to cover these non-new sales costs.

²² “How fast can Asia-Pacific banks grow consumer credit?” FairIsaac Corporate News, November 2007: www.fairisaac.com

Consumers

Behind many of these changes is the growing demand by consumers for more choice and personalisation of services.²³ Consumers are increasingly technology savvy, choosing to use the Internet or the mobile phone in addition to 'bricks and mortar' shopping, looking for discounts or shopping privileges attached to the use of different cards, accumulating redeemable 'points', and choosing between foreign and home currency when paying overseas.

Banks are looking at ways to assess profitability over the full customer life cycle. Customers need to be segmented into distinct demographics and the product tailored and direct marketed to their needs. Examples might include pre-paid cards for young people, the unbanked and travellers, money transfer services for overseas workers sending money back to their families and stored value cards that people can send as Christmas or birthday gifts. In theory, all customers are profitable given the right offering.

Mobile banking

Consumers in some Asia Pacific countries have been among the quickest to adapt their phones and mobile devices to banking and purchasing uses. The region has a diversity of regulatory environments that have led to very differing ecosystems and differing roles for mobile network operators. Japan and Korea have been world leaders in mobile payments, but even in less developed economies such as India and the Philippines there have been many simple effective examples of phones being used as a stored value device, or as a means for making remittance payments.²⁴

In a recent survey by KPMG International, the biggest reasons cited as deterring people from using their mobile phone for banking transactions was security and privacy, cited by 44 percent of respondents. In Asia Pacific, only 36 percent said they were uncomfortable with the use of mobile phone for financial transactions, compared to 66 percent in North America and 52 percent in Europe.²⁵

Private and public enterprise

There is a growing usage of corporate and enterprise cards. These include purchasing cards for buying bulk supplies,²⁶ credit or charge cards for employees working and travelling on company time and pre-paid cards for the handling of employee expenses. Economies of scale are at the root of payments processing, so there is always some incentive to by-pass the card schemes altogether. Large private merchants, such as the Coles Group in Australia, do this; as do governments who can licence their own processors, such as China UnionPay and more recently IndiaPay, for handling public sector procurement.

Acquiring implies the processing of financial and non-financial transactions data, reconciliation of the financial data and accounts settlement. Settlement is a core bank function, although the activity is a cost. Reconciliation is an accounting and forensic activity and again it is a cost. The processing of financial data, in cases where the input comes in the form of vouchers rather than digital bits, is resource-intensive and scale is crucial in keeping costs low. Processing costs

²³ The main finding of MasterCard's An Attitudinal Look at the Mass Affluent Consumer, 6 May 2005.

²⁴ *Mobile Payments in Asia Pacific*, published by KPMG Hong Kong, September 2007

²⁵ *Consumers & Convergence III: Consumers taking charge*, published by KPMG International, April 2009

²⁶ The market still has far to go. Of the 11 billion B2B transactions in 2007 in the USA, worth \$37 trillion, 'more than 70% were still paid by a traditional paper check.' Finding by research firm Celent, cited in Jim Lister (2008) *The Corporate Purchase Card: A Catalyst for New Growth in B2B eCommerce*, First Data White Paper, http://www.firstdata.com/about/whitepapers/WP_b2b_pcard.pdf

may be recovered in part by providing reporting, diagnostics and other services to the merchants. The processing of non-financial data is the area which is potentially most profitable. Data mining, in order to provide merchants, banks, card schemes, gateways operators, advertising agencies and others with market profiles of cardholders and card usage, is a rising market. This is non core, but valuable and provides an opportunity for third party activity.

In summary, the data processing activities of the acquiring sector do not fall within the traditional core competency of banks, but they may be merged among other retail banking activities rather than separately identified as costs. Managed by the bank's retail side, the cost of operating the acquiring business is rarely balanced against benefits in helping the bank's corporate or commercial side to establish more meaningful – and profitable – relationships with merchants.

Identifying and eradicating these inefficiencies has long been part of banking best practice in North America and Western Europe, where the outsourcing of these activities to third party processors is well established.

In recent years, international banks, having opened branches in many Asia Pacific markets, have adopted strategies to rationalise their group networks. There have been two major outsourcing agreements between TPPs and acquiring banks.

In the stored value card arena, examples of collaboration in Asia Pacific include the merger of Yalamanchili International and Visa Global in December 2008 to form Visa Processing Services. The company provides the processing of open loop pre-paid stored value card transactions for issuing banks in the Asia Pacific region that provide processing services for banks.

International banks, multinational companies looking for global quality of service, third party acquirers and processors and applications vendors entering Asian markets from the US and Europe have become a transmission mechanism for innovation, and also a catalyst to local banks, merchants, processors and vendors to emulate them.



TPP case studies

Global Payments was formed as a joint venture for the Asia Pacific region in 2006 between Global Payments (56 percent) and HSBC (44 percent), with HSBC doing the processing and Global Payments, a major provider of electronic transactions processing, focused upon acquisition and managing of the portfolio of merchants for HSBC across 10 Asian economies. Acquirers across Asia require separate acquiring licences for every national jurisdiction, which for HSBC implied domestic interchange rates each being processed locally. Now Global Payments can offer a “One Pipe” approach with all the switching taking place in the US. Global Payments can also bring to Asian markets longstanding business alliances with hardware and software vendors offering industry-specific solutions.

Merchant Solutions was formed as a joint venture for the Asia Pacific region in 2007 between First Data (56 percent) and Standard Chartered Bank (44 percent).²⁷ The company has its own JV board and leverages the competencies of both its parents, for example by SCB doing the settlements and First Data knowledge shaping sales (acquiring merchants), the discounts rates offered to merchants, the data processing, risk management and the accounting with the card schemes. In this model, Merchant Solutions is profits- and growth-driven to offer service innovations, such as reporting and diagnostics, intelligent POS terminals, process enhancements and new products, to acquire the merchants across all segments. First Data has a global switching infrastructure, including a switch for processing transactions across the Asia Pacific region located in Australia.

First Data has been in the Australasian market for over 17 years and is now active also as an acquirer or with merchant related businesses in Hong Kong, China, Malaysia, India, Singapore and South Korea. It is worth noting that the industry framework in South Korea limits TPP organisations to switching service only as a value-added network on a per transaction basis to local acquiring agents (usually the financial institutions). Unlike other acquiring industry structures, this approach significantly reduces the linkage between what the merchants pay (MDR) to the banks and the services they receive and therefore can reduce the economic incentive for innovation at the merchant level.

Planet Payment supports processing for all major card schemes and maintains relationships with a wide range of acquiring banks globally. It also offers specific products for industry verticals, such as a regional switch in Asia Pacific to provide integrated services to major hotels and retailers, which typically operate dozens of independent POS terminals through standard telephone lines. This switch accepts transactions from a variety of merchant POS technology providers. It allows merchants to more easily integrate credit card payments into their back-office management systems and provides them with consolidated reporting and reconciliation statements across a range of different transactions.

Another innovation is Planet Payment’s single, currency-neutral processing platform. This provides its principal source of revenue and arises from the margin generated by the currency conversion of these transactions, which is shared with the acquiring bank.

According to this system, the merchant presents an international customer with the price in the merchant’s currency and simultaneously in the customer’s home currency based upon a competitive exchange rate provided by Planet Payment’s systems through the POS terminal. The customer then chooses in which of the two currencies to pay, and each of the cardholder and merchant settles the transaction in its “home” currency. The merchant receives settlement in its local currency directly from the acquiring bank which uses Planet Payment’s systems for reconciliation and account management.

In the merchant-centric model, the merchant simply sets a specific price point in one or more foreign currencies based upon the applicable exchange rates provided by Planet Payment. Either model offers transparency and certainty because the customer knows the exact currency conversion rate being used, while the merchant has greater appeal by being able to offer payment in the customer’s local currency.

Based on publicly available information and executive interviews.

²⁷ First Data is the world’s largest payments processor and has lines of business in acquiring, issuing, ATM deployment, and merchant value-added services.



Future states

The evolution of the traditional payments cycle will require analysis of whether different functions are best provided in-house or outsourcing to third party specialists. This may mean outsourcing some, or all of the functions in their entirety, from ownership of the physical assets (software platform, POS, ATM) and intellectual property to business processes, structures and strategies, skilled and specialised personnel, support, maintenance and management. This evolution will likely lead to the restructuring of the payments ecosystem with the potential for a new model with shared services between the different parties.

If payments are viewed as a service, it will require traditional stakeholders to relinquish their stake and become participants with all other links in the payment chain, or risk losing their stake entirely.

The expected benefits include the following:

- Offloading the capacity issues to TPPs with payments systems equipped to handle the volumes
- Access to best of breed solutions providing the latest functionality and innovation to which contributions are made by all participants and shared accordingly
- Avoiding the sunk costs of investment in systems and networks (software and hardware) and sharing service fees with fellow traditional stakeholders and competitors
- Handing regulatory compliance responsibility and cost to a TPP.

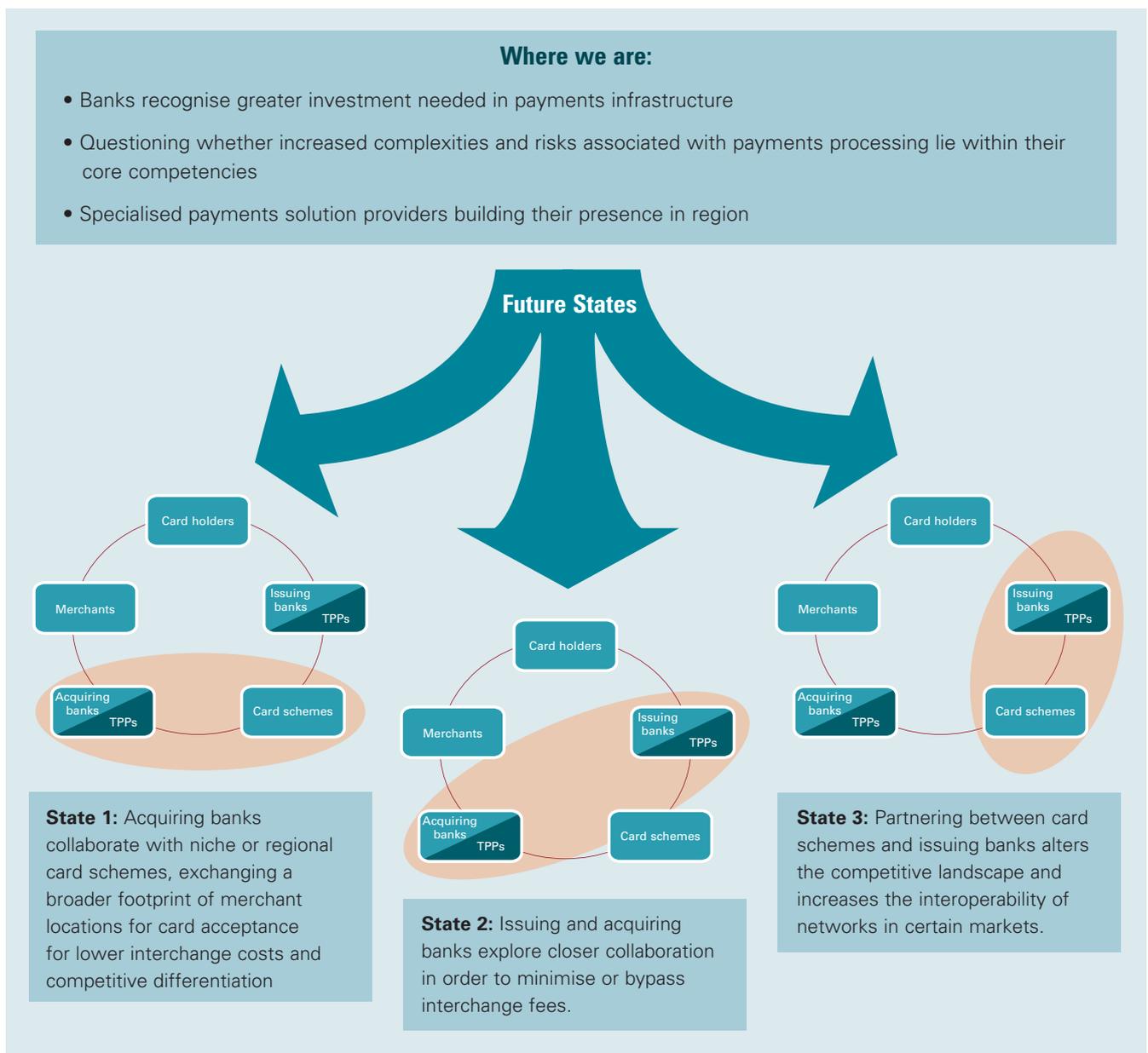
The expected risks are:

- Data privacy and security issues caused by the offsite handling and comingling of information

- A smaller slice of the revenue pie for traditional stakeholders which are counteracted by the reduction in investment and the ever increasing size of the electronics payment market, especially in the Asia Pacific region
- Commoditisation of offerings, in that every bank using that TPP has the same service, and there is limited scope for differentiation
- Disintermediation of the bank’s relationship with the client, be it a merchant or cardholder.

While there may be risks, many organisations are taking a view that these can be mitigated and handled via appropriate commercial and legal arrangements and structures.

Figure 3: Future states



Concluding Remarks



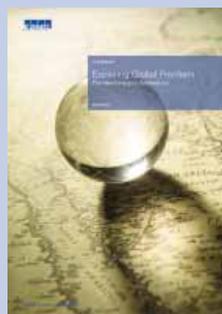
At each stage of the payments chain there are opportunities to add value, lower transactions costs, enhance the effectiveness of marketing through data mining, and offer a wider variety of options in payment methods and currencies to cardholders. Further, by utilising third parties to provide key business functions along this chain, businesses may benefit from the best of breed technologies employed by such entities without needing to make a significant capital investment, and save on the expertise and personnel required to perform functions which are often not core to the business strategy. This may lead to a better customer experience and a new business model in the payments market suited to the rapid evolution of electronic payment transactions.

The traditional participants with a first-to-market advantage still have an opportunity to offer the newest solutions using the lowest cost infrastructure. Over time, the newer participants may settle into their niche positions in the payments chain, but they may also bypass traditional players with next-generation solutions.

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