Knowledge Leadership

MasterCard Worldwide

Reserve Bank of Australia Strategic Review of Innovation

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1. Introduction

In a global economy that has become increasingly driven by electronic payments to facilitate commerce and trade across international and domestic borders, Australia now stands at the critical juncture between progress (driven by a mutual gain for all participants in the value chain), or a debilitating slow down driven by uncertainty.

Over the last decade, rapid technological changes and innovations in both advanced and developing economies – particularly the proliferation of internet access and mobile communications and computing – have combined to produce substantial benefits to society.

In doing so, these developments have presented a number of fundamental opportunities and challenges to consumers, business, government and regulators. This has occurred across a diverse number of areas that range from national security to privacy and education. Australia is not immune.

An accelerating area of innovation in the payments system that is producing societal and business benefits is the displacement of cash by more convenient and efficient electronic payments in markets ranging from transit to supermarkets.

Against this context, the Reserve Bank of Australia's Strategic Review of Innovation in the Payments System is a necessary and timely step. It creates a tangible opportunity to review present payments system policy settings to take better advantage of technological developments while at the same time strengthen consumer and business confidence and improve commerce across all levels of society.

The move to re-examine Australia's payment systems policy settings is pertinent given that a number existing regulations, if allowed to continue in their current form, will increasingly act as inhibitors to the kind of innovation needed to create a secure, efficient, fast and convenient Australian payments infrastructure.

MasterCard Worldwide welcomes the opportunity to respond to the RBA's call for consultation.

Sincerely

Eddie Grobler
Executive Vice President
MasterCard Australasia

2. The Innovation Landscape

Australians have long embraced innovation and new technologies as a means to overcome the commercial and societal challenges of living on a vast continent.

Individuals and businesses have, over the past 50 years, shown a strong willingness and enthusiasm to harness advances in technology and solutions to problems that open up new opportunities or produce a strong boost in efficiency and/or productivity.

A poignant example of this is that as a nation, Australia has one of the highest per capita ownership levels of mobile phones in the world thanks to the relatively early introduction of cellular technology and subsequent infrastructure reinvestments by providers.

Similarly, in the Australian payments market, consumers have shown a firm resolve to embrace innovation and new advances in financial services.

These include the utility and convenience of safe and robust electronic transaction services that range from retail card payments to automatic tellers and from online banking to shopping and bill payments made from web-enabled smart-phones. (It is notable that some large retail banks have cited that up to 20 per cent of online banking transactions are now executed from mobile devices leading to a reassessment of which delivery platforms to direct investment to.)

Outside Australia, innovation and technological advances in financial services that provide direct benefits to all participants in the payments value chain continue to advance rapidly. However similar progress in Australia has been stifled because of regulatory uncertainty and the restraint that this places on innovation. Within this environment, there is also an attendant shortfall of competitive pressure on domestic providers needed to drive new and better products and services into the market.

A key inhibitor to Australian institutions' ability to embrace innovations such as those now sweeping across Europe and Asia has been regulatory support for the present system of bilateral links between issuing and acquiring banks – technology that is now, more than 30-years-old. This support of the bilateral system can produce a number of undesirable consequences in terms of policy outcomes and day-to-day experience by bank customers.

Firstly, the complexity and inflexibility of a system dependent on a multitude of bilateral links between institutions has created an environment that is inherently fragile. This situation arises because multiple institutions/parties can be affected by individual points of failure, such as an outage. There have been a number of conspicuous examples of incidents at retail institutions over the past few years that have sometimes left consumers and businesses severely inconvenienced for long periods of time.

It is a fact that in a system based on a multitude of bilateral agreements, the speed of innovation is always constrained by the slowest mover. This very point was publicly acknowledged by the Reserve Bank of Australia's immediate past head of payments, Michele Bullock, in The Australian Financial Review: *"With bilaterals everyone moves at the pace of the slowest member and that impacts not only innovation but access to the system."*[1]

Secondly, institutional adherence to this inherently constrained domestic bilateral legacy has generated a significant opportunity cost to Australian financial services consumers.

Unlike scheme debit and credit card-holders, proprietary debit products (referred to in Australia as eftpos) still lack the necessary functionality to enable internet purchases, more than a decade after such purchases became mainstream. It can be argued that these products are not "future-proof."

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[1] "Finding new ways to pay" by Andrew Cornell, *The Australian Financial Review*, p56, 15th October 2010.

It is not insignificant that at a time when Australian consumers have embraced online purchasing to the point that even the business models of several established major retailers are enduring disruption, Australian proprietary debit cards still languish in the pre-internet age. The same argument may be followed on contactless and mobile payments.

The result of this lack of innovation is that Australian consumers are comparatively disadvantaged by less choice and convenience when it comes to choosing how to pay.

3. The Liability of Legacy

While it is understandable that there has been regulatory interest in the preservation of some kind of indigenous capacity to process payments, there is now a serious question as to whether the systemic legacy of existing bilateral system now represents a liability as much as it does a capability.

A very real obstacle to the modernisation of the wider proprietary Australian bilateral debit system has been a natural difficulty in gaining the consensus and cooperation between institutions that compete directly against each other.

At its simplest, there is often insufficient incentive for some institutions to 'buy into' system-wide modernisations and wear the costs associated with them – particularly if they perceive that such expenditure may deliver their competitors a greater competitive advantage than they themselves can initially derive.

A further complication is the composition of shareholders in the proprietary debit market. It is questionable whether sufficient motivation to introduce innovation can develop if there is a pre-existing symbiotic relationship that relies on the status quo.

While it is true that innovation is only effective when it addresses the needs of stakeholders in the payments value chain, it should also be remembered that innovation should also foster the kind of competition between institutions that is necessary to drive continuous improvement and ultimately satisfy the needs of the end consumer.

Today's global payments and transaction processing system is now largely based on a distributed systems architecture that, as a core proposition, create multilateral networks rather than bilateral networks.

A key feature of distributed and multilateral networks is that they can achieve resilience, scale and reliability by eliminating single points of failure and sharing and balancing loads. (In a broad sense, this reflects the same underlying foundations on which the internet is based.)

Furthermore, distributed payments networks operated by schemes such as MasterCard (and its competitors) represent a robust, reliable, trustworthy and proven infrastructure that has for many years been offered as a service.

There is a cogent argument to be made that consumers and merchants and the nation would benefit more if issuing institutions adopted scheme-based services (or a white-labelled variant thereof) to provide debit functionality instead of maintaining the status-quo of ongoing support for a more costly separate bilateral network with restricted functionality.

Similarly, it is important that a shift away from proprietary legacy systems should not be characterised as a move that diminishes the home-grown technological capability of Australian institutions. The reality of the situation is that many participants in Australia's retail banking sector are now actively, and legitimately, pursuing opportunities outside of Australia as a strategy to maintain growth.

Indeed, today most Australian banks routinely use global service providers to provide managed infrastructure services not only for payments but other routine bank operations for both bilateral and multilateral operations.

Subsequently, there are far fewer commercial and societal benefits of maintaining protections for isolated proprietary domestic arrangements – and much greater utility and benefit in adopting multilateral and scheme based services (even if these are white-labelled or branded under a different name).

Historically, MasterCard has not delayed making substantial investments in the Australian payments eco-system. The organisation has invested in the implementation of EMV cards, it has continuously participated in mobile commerce initiatives and MasterCard has a majority stake in a local transaction processing capability (Strategic Processing Solutions or SPS).

4. Addressing co-operative failures

As outlined in the Reserve Bank's discussion paper on Innovation in the Payment System, there is a strong body of evidence that highlights the "notorious complexity" and associated difficulties of facilitating cooperation between industry participants needed to achieve innovation.

The Australian financial services sector has chalked-up some notable milestones in adopting innovative new technology. These include the initial establishment of eftpos in the 1980s, the creation of the real-time gross settlements system in the 1990s and the widespread adoption of internet banking.

The above developments have all contributed value to participants over time. However the RBA also points out that there have been times when "external intervention" has been required to accelerate change and thereby address "co-operative failings."

These observations are especially pertinent because there is increasingly strong evidence today that competing interests between payment systems participants acts as a handbrake on "co-operative innovation."

It is fair to say that despite the best intentions, there have been several examples of discontinued collaborative projects in the Australian payments and financial services sector that exemplify what the Reserve has called "co-operative failure." The demise of Australia's proprietary credit product, Bankcard, is testament to the substantial challenges associated with generating sustained cooperative investment on a relatively small domestic market. At the same time, consumers and businesses who now rely on electronic payments operate in the equivalent of a "global village" where transactional limitations once imposed by national borders have dissipated and been replaced by interconnectivity and interoperability.

Given these factors, MasterCard Worldwide believes that innovation in the Australian payments market and the interests of consumers, merchants and ultimately institutions would be best served by not forcing innovation through regulation.

MasterCard Worldwide agrees with the RBA Assistant Governor Malcolm Edey's comments that:
"…we're well aware that you can't regulate innovation into being. That's not the intention."[2]

We believe that innovation would be best accelerated through the removal of the RBA's protective regulatory bias which has resulted in the artificial extension of functionally and technologically substandard hegemonies that now exist in the proprietary debit card market.

[2] Malcolm Edey, speech to Cards & Payments Australasia Conference, Sydney, 29 March 2011.

5. Industry Governance

A substantive cause of ongoing "co-operative failures" in the Australian payments market is the wide range of conflicting interests that challenge industry groups.

MasterCard concurs with the RBA when it says that an "important question in examining industry governance is whose views governance arrangements take into account." [5.2] This question is particularly relevant when it comes to considering the future role of industry groups and associations.

In its issues for consultation, the Reserve Bank has asked in Question 14:

"Could a new decision-making body with broad representation of payments system participants, service providers and end users provide a better strategic focus for the payments system, taking adequate account of the costs and the public interest?" [3]

At the heart of this question is, firstly, whether a new decision making body is actually needed and, secondly, whether innovation can be regulated into the behaviour of some payment system participants.

Given the composition of the Australian payments market and the long-standing interests of many its domestic participants, it is unlikely that that well-established obstacles to innovation would be removed through the creation of a new body.

The challenges of attempting to coordinate innovation in terms of Australia's bilateral proprietary debit system were well characterised by Reserve Bank Governor Glenn Stevens in his speech on Public policy and the Payments System in 2009:

> *"If a participant thinks a particular change may provide another participant with a potential competitive advantage, it will probably attempt to delay. Indeed, if one participant sees a potential competitive advantage in a change, it is almost guaranteed that another will see a disadvantage and, therefore, seek to block the change. This results in a significant co-ordination problem for the industry.*
>
> *"The result is that, in the underlying architecture of the Australian payments system, very little has changed over the past 20 or 30 years, even though technology has evolved in the quarter of a century since the technology underlying the ATM and EFTPOS systems was first established."*[4]

Another important factor that needs to be considered in terms of the governance of any proposed Australian decision making body is the global nature of payments, and the required international standards and rules that underpin interoperability, functionality and utility that mean a card issued in one country can be used at any merchant in another.

This point is also important because innovation in the Australian payments industry is now largely driven by advances that have and will continue to occur on an international basis.

Moreover, the development and uptake of recent innovations in Australia like EMV, contactless cards and online and mobile payments have and will continue to be led by MasterCard and other competitors.

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[3] Reserve Bank of Australia, Strategic Review of Innovation in the Payments System: Issues for Consultation, June 2011, 5.5, question 14, p17

[4] Glenn Stevens, Governor, Reserve Bank of Australia, Third Annual Ian Little Memorial Lecture: "Public Policy and the Payments System Melbourne - 25 March 2009 (http://www.rba.gov.au/speeches/2009/sp-gov-250309.html)

There is also strong evidence that more intrusive regulatory interventions in the payments system can produce unintended or undesirable consequences that do not benefit consumers. In the case of allowing card surcharging, some merchants with substantial market power have demonstrated an inclination to use such mechanisms for price gouging far above any offset of actual transaction costs. (MasterCard welcomed the Reserve Bank's recent decision to review the effect of payment surcharging.)

MasterCard Worldwide agrees with Mr Stevens' cautionary observation in 2009 that noted that *"We [the Reserve Bank of Australia] remain conscious of the risks that public intervention itself may be an impediment to innovation."*[5]

Looking at innovation best practice on a global level, it seems to us that a culture of innovation most firmly takes root in countries where it is encouraged to grow from the ground-up rather than being pushed down onto industry by regulators and governments.

6. MasterCard's commitment to continuous innovation

The persistence of local co-operative difficulties in the Australian payments market contrasts sharply with the large and sustained long term investments made by global payment networks like MasterCard which have a natural competitive interest in achieving the maximum convenience, security, interoperability and utilisation of its products and services.

Indeed, it would not be an understatement to say that competitive friction between MasterCard and our competitors has been at the very heart of what has driven innovation over the past thirty years, and it continues to this day.

Today, MasterCard Worldwide is an important link between more than 1 billion debit, credit and charge cards issued by more than 24,000 customer financial institutions which are used at 32.7 million acceptance locations though a global payments network that spans 210 countries and generated 23 billion transactions (as at year end 30th June 2011).

At the forefront of MasterCard's approach to innovation is a strong, enduring commitment to developing and providing faster, more secure and smarter methods of payments for consumers that enable economic connections, fuel commercial development on a global and local scale and drive business growth for our customers.

MasterCard actively invests in researching and understanding the changing dynamics of payments and transactions as well as constantly seeking feedback and ideas from its customers and consumers, (current and potential).

For the purposes of this paper, it is worth outlining a number of key examples of innovation that MasterCard has contributed on a global level.

EMV
One of the most widely known innovations MasterCard has brought to the market is EMV (Europay, MasterCard, Visa), a chip standard that not only secures card transactions but can also greatly widen the number of applications that reside on a card (or other device).

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5 Glenn Stevens, Governor, Reserve Bank of Australia, Third Annual Ian Little Memorial Lecture: "Public Policy and the Payments System Melbourne - 25 March 2009 (http://www.rba.gov.au/speeches/2009/sp-gov-250309.html)

A primary reason for the development of chip cards was to reduce the perpetration of card fraud by engineering out the potential for skimming and cloning techniques that have become a staple vector of exploitation which criminals have applied to magnetic stripe technology.

This is done through cryptographic means that make card unauthorised card transactions and fraud hugely more difficult at both technical and economic levels. Concurrently, benefits arise from the capacity for information storage on chips has developed and increased and multi-purpose chips now enable a range of new product developments, loyalty programs and payment technologies.

Part of the significant contribution to innovation that MasterCard Worldwide has made to the development of EMV, aside from the technology, has been play a leadership role in establishing common global standards that allow for the international use of EMV cards.

MasterCard *PayPass*
MasterCard *PayPass* enables cardholders to make fast and convenient payments that typically replace cash at the point of sale, thereby speeding up turnover and reducing bottlenecks for retailers ranging from hardware warehouses like Bunnings to mass transit providers like Transport for London.

PayPass uses near field communications (NFC) to securely transmit data required for a card payment and has been enthusiastically embraced by consumers and merchants in the markets where it has been made available, including Australia where transaction growth has been exponential.

A key innovation of *PayPass* that has made it so popular is the rapid speed with which transactions can be performed making it perfect for lower value purchases (in Australia up to $100) that are still typically made with cash. A key element in this speed is there is no need to insert or swipe a card or enter a PIN number for transactions below this amount. At the same time, MasterCard has innovated by setting pricing for *PayPass* to make acceptance viable for retailers of varying sizes.

In addition to increasing turnover for merchants and convenience for cardholders, there are additional societal benefits that flow from accelerating electronic payments and replacing cash. These include the ability of merchants, including transit providers, to greatly reduce queues to make purchases at peak times.

There are also numerous instances where service providers and some retailers prefer not to deal with cash because its presence exposes staff to risks.

e-Commerce Services
As business – both domestically and internationally – increasingly takes advantage of the internet and online transactions, MasterCard Worldwide has persistently sought out and delivered innovative new services that deliver increased value to consumers, merchants and institutions.

An important area of development in this area of innovation has been the provision of 'white label' switch-to-issuer services that provide physical and online merchants a means to securely receive payments online across all payment types globally.

Locally branded in Australia as MIGS, these services provide an open, online platform that enables all major scheme payment methods, not just MasterCard.

MIGS also delivers embedded fraud detection services that not only identify high risk for Card Not Present transactions but provide scores that enable merchants and acquirers to minimise the threat of fraud.

MasterCard Labs
MasterCard invests significantly in research and development through MasterCard Labs which constantly develops and tests new capabilities, innovations and opportunities.

Apart from providing an 'innovation pipeline' to bring new ideas, products, services and enablers to the market, MasterCard Labs also provides rapid prototyping and testing that help determine the feasibility – or otherwise – of R&D outputs.

A key role of MasterCard Labs is to facilitate the creation of new, differentiated solutions for MasterCard to meet consumers' and institutions' rapidly changing needs. MasterCard Labs also acts as catalyst for disruptive innovation within the company and fosters a more innovative corporate culture.

At the same time MasterCard Worldwide recognises that there will never be a monopoly on good ideas. So the company keeps a close watch on capabilities that it may acquire through the market that would benefit its customers, cardholders and its shareholders.

Mobile convergence and virtual wallets
Where significant opportunity exists to bring breakthrough changes to the market, MasterCard Worldwide forms partnerships outside the financial services industry.

Earlier this year, MasterCard announced its participation in Google Wallet, a partnership that (in the US) also includes Citibank, FirstData and Sprint. This world-leading development has stimulated immense interest on a global level for the clear everyday benefits such that the convergence of card and handset form factors will bring to consumers.

MasterCard has also invested in new capabilities that can broker the provision of mobile handset payments capability, known as MOTAPS (Mastercard Over The Air Provisioning System).

Giving self-control to cardholders
As the use of payment cards and online transactions increases, an important area of concern for consumers and businesses is the ability to maintain a degree of controls over the size and kind of transactions that are made.

An increasing demand from consumers and businesses in this area has been for transactional products and services that allow spending amounts, locations and times of purchases to be controlled.

MasterCard's "InControl" service has innovated in this area by providing card issuers and their customers the ability to closely manage spending parameters for cards to ensure appropriate purchasing behaviour and avoid misuse. For example, accounts can be set so that alcohol cannot be purchased by a person under 18.

Virtual cards and single-use numbers for online transactions
An area of concern for consumers who make purchases on the internet is how to ensure the security of a payment card number and its related account when making purchases from online merchants. MasterCard has developed a system of Virtual Cards that can only be used once for a capped amount of spend. The capability is squarely aimed at internet purchases because cardholders can create a one-time-only (single use) card number that cannot be traced back to a credit or debit account (or re-used by merchants).

This innovation is particularly relevant to an emerging generation of "online-first" merchants who seek to market themselves globally from the outset and whose primary sales channel is the internet. The enablement of this kind of merchant is especially relevant in the context of what Australian policymakers have termed the "digital economy" because it allows small, medium and micro businesses to access global markets that would otherwise be out of reach.

These businesses usually feature very high degrees of value adding to the products and services that they sell which can range from bespoke shirt-making to software application development and integration.

Securing online transactions: MasterCard SecureCode
Another important necessity that customers and merchants are looking for is a secure way to validate the authenticity of the other when shopping in the online.

To maintain trust and confidence in a transaction, there is a need to independently validate that each party is who they claim to be – that the cardholder is the true owner of the card so that the merchant will not be required to cover the cost associated with a chargeback; and the merchant is legitimate so the cardholder does not suffer loss or inconvenience because of the non-delivery of goods.

MasterCard has innovated in this area by creating the SecureCode product that provides consumers with an online tool that allows them to register their details on a secure bank-supported platform. This platform in turn issues the registered customer with a validation number – effectively like an online PIN – to validate they are the true owner of the card being used to make a purchase.

The use of a Customer validation number (which is intentionally not traceable back to the card number) means that a purchaser's bank is able to unlock the cardholders details, authorise the transaction and then lock up the cardholders details again.

Automatic Billing Updater
MasterCard's "Automatic Billing Updater" maintains accurate 'Card-on-File' and recurring payment data for eCommerce and recurring payment merchants. A key feature of the product is that it supports issuer-to-acquirer information exchange when a customers' account information changes so that so that automatic billing arrangements are not at risk of breakage. Such changes can include expired accounts, closed accounts and portfolio changes.

The service is provided to issuers (who make the updates) and acquirers (who enrol and update merchants). Merchants can then use these updates to correctly invoice cardholders that have a recurrent payment agreement, e-commerce or MOTO (mail order/ telephone order) agreements with them.

smartdata.gen2
For customers of corporate credit cards, the ability to obtain clear visibility over business expenses and expenditure is a crucial operational concern. Despite businesses having access to some sort of spending data, there can still be obstacles in terms of putting this information to work because within corporate financials and enterprise resource planning systems.

To address this need, MasterCard Worldwide has developed *smartdata.gen2*, a web-based reporting solution for expense and information management which provides companies of all sizes with the easy-to-use tools to control spending, optimise profits and ensure compliance.

A key innovation of *smartdata.gen2* is that it provides complete, consolidated and custom views of data, delivering a holistic overview of company expenditures on schedule or on demand cost *as a service* rather than as a stand-alone capital investment.

The *smartdata.gen2* service is powered by the MasterCard Global Repository – a robust repository of daily card program data as well as enhanced supplemental data from vendors such as airlines and hotels; and provides complete, consolidated and custom views of data, delivering a holistic overview of company expenditures on schedule or on demand.

Information Services
MasterCard's Information Services practice (part of MasterCard Advisors) is at the forefront of a commitment by the company to provide value to customers and participants in the global economy by unlocking the power of information contained within the vast quantities of transactional data collected as part of processing activity.

To address the increase in demand for well presented, current, accurate and insightful information, Information Services has developed robust suite of macroeconomic tracking reports that offer insights to experts in a range of disciplines from retail to government to capital markets. The timeliness, depth and location-contextual nature of this information helps clients make much better informed decisions with up-to-date intelligence based on real behavioural and spending data. The ability to access such timely data is especially important as global commerce continues to move to what analysts have dubbed a "real time economy" where the speed communications, transactions and services becomes virtually instant.

Innovative products that address this demand include:

- MasterCard's series **SpendingPulse** reports that provide the most up-to-date, leading indicator of industry sales and pricing and commodities including fuel.
- **Custom Models** and analytics that include propensity , income estimation, marketing and geographic trends.
- **Sector Indexes** that generate the industry's most frequently updated and granular indicators of industry sales trends.

Financial Stress Prediction

The timely detection of signs financial stress among cardholder and credit customers is an area of key concern for policymakers and issuers and alike because it can provide an insight into how wider economic conditions play out in the community and can be prudently managed. Although risk scores are developed and used to identify the how credit capable people may be prior to credit being made available, there are few products available that actively monitor for initial indicators of financial stress once customers are active.

To address this issue that goes to the heart of responsible lending, MasterCard Advisors has developed a predictive model that analyses changes in purchasing behaviours that are indicative of financial stress, and thus the likelihood of accounts becoming delinquent in the near future. The model provides the issuers with an early warning radar to effectively spot and assist customers with potential financial stress. This proactive approach is mutually beneficial to customers, governments and institutions because it helps to address and issues as they emerge and prevents the escalation of delinquency.

Early mitigation of delinquency risk is by institutions is especially important to the community and the stability of the wider financial system in times of economic and market volatility.

8. About MasterCard

MasterCard Worldwide is a leading global payments solutions company, enabling global transactions and bringing insight into the payments process to make commerce faster, more secure, and more valuable to everyone involved. As a critical link between thousands of financial institutions and millions of businesses, cardholders and merchants worldwide, we provide services in more than 210 countries and territories. We advance commerce worldwide by developing more secure, convenient and rewarding payment solutions, processing billions of payments seamlessly across the globe, and building economic connections that accelerate business.

MasterCard does not issue cards, set annual fees, determine annual percentage rates on cards, or solicit merchants to accept cards. MasterCard's customers, a myriad of financial institutions worldwide, directly manage the relationships with their cardholders and with merchants accepting the cards.