

Driving Payments Innovation

Submission to the Reserve Bank of Australia
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IDEAS & ACTIONS

Table of Contents

1	BACKGROUND.....	3
1.1	RBA REVIEW OF PAYMENTS INNOVATION	3
1.2	PURPOSE	4
1.3	WHO WE ARE	4
1.4	ACKNOWLEDGEMENTS	4
1.5	CONTACTS.....	4
2	EXECUTIVE SUMMARY	5
3	INDUSTRY STRATEGY DEVELOPMENT	6
3.1	PROPOSED OBJECTIVES	6
3.2	INDUSTRY ROAD MAP DEVELOPMENT.....	8
4	REAL-TIME PAYMENTS.....	10
4.1	AN OPEN REAL TIME CLEARING UTILITY.....	10
4.2	ARCHITECTURAL OPTIONS	13
4.3	COMMERCIAL VS. PUBLIC UTILITY MODELS	13
5	CONCLUSIONS AND NEXT STEPS.....	16

1 Background

1.1 RBA Review of Payments Innovation

The Payments System Board of the Reserve Bank of Australia (RBA, Bank) has undertaken a Strategic Review of Innovation in the Australian Payments System. The objective is to identify areas in which innovation in the Australian payments system may be improved through more effective co-operation between stakeholders and regulators. It has taken a medium-term perspective, looking at trends and developments overseas in payment systems and at possible gaps in the Australian payments system that might need to be filled through innovation over a time horizon of five to ten years. The goal is ultimately to identify projects that the Bank and other stakeholders could work on co-operatively to enhance the payments system in Australia.

Submissions were invited in August 2011, followed by an Industry Round Table consultation in February 2012. Ideas & Actions has contributed to this process via formal [submissions](#)¹, presentation at the Round Table, meetings with the RBA and ongoing [commentary](#)².

In June 2012, the RBA released the conclusions of its Strategic Review of Innovation in the Payments System, with an approach summarized as below.

1. The Board will establish high-level strategic objectives, which it believes the payments system should be able to meet by a specified time.
2. The first set of strategic objectives for the payments system will reflect the gaps identified by the Board during the Strategic Review.
3. While the Board intends to let the industry determine the approach to meeting strategic objectives, it sees merit in the establishment of hub-based architecture for providing real-time payments, including a real-time settlement hub provided by the Reserve Bank.
4. The Board recommends a review of industry coordination, with a view to constituting an enhanced industry body with which the Board will engage more directly.

The initial strategic objectives are:

- Same-day settlement of all Direct Entry payments (by end 2013)
- The ability to make real-time retail payments (by end 2016)
- The ability to make and receive low-value payments (Direct Entry, real-time payments and crediting of card payment receipts) outside normal banking hours (by end 2016)
- The ability to send more complete remittance information with payments (by end 2016)
- The ability to address payments in simple manner (by end 2017).

¹ <http://www.rba.gov.au/payments-system/reforms/strategic-review-innovation/submissions/201106-strategic-review-innovation/dilip.pdf>

² <http://www.ideasandactions.com.au>

An allied objective is the establishment of a system that would provide real-time retail payments, with real-time funds availability, by the end of 2016. The Bank believes that a real time retail payment system would best be delivered by the establishment of a real time payments hub, rather than a web of bilateral links. It is also prepared to consider helping to facilitate these payments by providing a system for real-time interbank settlement via the Reserve Bank's RITS system, which currently provides real-time settlement for high-value transactions.

The Bank is now seeking feedback from the industry on the initial strategic objectives, along with the suggested target dates. It is also seeking views from the industry on the approach to delivering real-time retail payments, with a view to having a clear path determined by late 2012.

1.2 Purpose

This document is submitted as an independent input by an industry veteran to the deliberations of the RBA and for consideration by financial institutions and participants to achieve transformational change in the infrastructure and architecture of the payments system for the benefit of consumers, businesses and the payments industry.

1.3 Who we are

Ideas & Actions is a Sydney management consultancy advising large organisations on innovation, particularly with technology leverage. Dilip Rao, Managing Consultant at Ideas & Actions, has been involved with the payments industry in Australia since 1986, most recently as founder and MD of www.paymate.com, an Australian online payments company. See www.ideasandactions.com.au for further details on credentials.

1.4 Acknowledgements

My thanks to Tony Richards, Head of Payments Policy and Nola McMillan, Head of Payments Settlements and their teams at the RBA for their time and feedback on these ideas. My thanks also to senior representatives of the four major banks, APCA and various vendors who very kindly gave of their time to provide feedback on my ideas.

1.5 Contacts

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2 Executive Summary

This submission aims to outline an approach to developing an industry strategy for payments that will underpin the delivery of strategic objectives 2-5 above. A broader framework of strategic goals over a 10-year, rather than 5-year span is suggested. The need for an industry body that fills a gap between the Payment Systems Board of the RBA and existing industry associations with independent directors is supported. A model for implementation of an Open Real Time Payments Clearing Utility, preferably commercially operated, is proposed. Further work on a fee structure that will incentivise the incumbent providers to support and participate in a new payments stream is suggested.

A broad 'vision' for Australian payments is proposed to be as follows:

All Australian individuals, SMBs and larger organisations will be able to engage in global commerce and collaboration, enabled by payments that are secure, faster, simpler and cheaper - conducted anytime, anywhere, anyhow.

It would appear feasible to charge an industry body to develop an industry road map, with funding to resource the effort required, focused on shared infrastructure and systems that require collaboration, not the provision of specific customer-facing products and services.

We submit a model for an Open Real Time Clearing Utility and suggest that:

- Both a 'hub' and a 'networked node' architecture could be considered viable options;
- A 'buy' rather than 'build' approach could reduce costs and risks significantly;
- Commercial viability is founded on the pricing model agreed by all participants;
- Having a clearing utility run by the RBA is not necessarily in the public good.

The best next step for the RBA would be to appoint the new or enhanced industry body already proposed, with a clear terms of reference. A Request For Proposal for the creation and operation of the Open Real Time Clearing Utility could be developed under the supervision of this body, to invite public tenders by 31 March 2013 and to finalise contracts by 30 June 2013.

Given known industry capabilities, the new utility could be in operation within 9-12 months, i.e. the first real time payment could be processed by 31 March 2014.

Australia would then be well on the way to a world-class payments system.

3 Industry Strategy Development

The RBA has taken the initiative to lead the industry to develop and deliver against a 5-year strategic plan. Typically, this process involves three phases:

- Assessing **‘where we are now’** (a task now completed via the Bank’s Strategic Review of Payments Innovation that identified key gaps);
- Agreeing **‘where we want to be’** (the ‘initial objectives’ proposed by the Bank being the first step in this consultative process);
- Developing a Road Map for **‘how we will get there’** (being the outstanding work, with the ‘Real Time Payments Hub’ mooted by the Bank being a new infrastructure component).

As the regulator for the payments industry, the RBA’s Payment Systems Board has taken on the mantle of the ‘sponsor’ for development of such an industry strategy. The powers to regulate and to be the service provider of last resort underpin the Bank’s approach to achieving outcomes when the industry fails to meet expectations. However, a more engaged approach, via a new or enhanced industry strategy body, is proposed to develop a road map for delivery that may also demonstrate the commercial viability essential to draw private sector investment.

3.1 Proposed Objectives

The initial strategic objectives proposed by the RBA are sound and likely to be supported by industry, consumers and government. The Bank proposes to set objectives every three years, which can be challenging for industry without an overarching framework that sets broad intent. We suggest the initial objectives be organised under broader goals and the timeline be extended from five years to ten, within which increasingly superior ‘versions’ of capabilities can be targeted.

Within a broader vision that addresses public needs, such a framework will enable refinements to meet evolving goals with accountable stakeholders.

The ‘enhanced industry (strategy) body’ proposed by the Bank may be engaged to formulate and agree this strategic framework for the ongoing development of payments capabilities and innovation. An initial set of suggestions is provided below for consideration.

3.1.1 Vision

All Australian individuals, SMBs and larger organisations will be able to engage in global commerce and collaboration, enabled by payments that are secure, fast, simple and cost-effective - conducted anytime, anywhere, anyhow.

3.1.2 Strategic Goals and Objectives

To achieve this vision, the set of initial strategic goals and more specific objectives for the period 2013-2023, subject to consultation with stakeholders, is proposed as follows. Target time frames, where indicated, are derived from the RBA's proposal, but would be subject to industry review.

3.1.2.1 *Faster Payments*

- Ability to receive same-day settlement of all bulk bank account (BECS) payments (End 2013)
- Ability to receive same-day settlement of all credit card (CECS) payments
- Ability to make real-time domestic retail payments (End 2016)
- Ability to make real-time cross border payments with selected trading partners

3.1.2.2 *Convenient/Accessible Payments*

- Ability to make and receive low-value payments (BECS, real-time payments and CECS) outside normal banking hours (End 2016)
- Ability for all Australians to make and receive low-value payments via physical, online or mobile interactions with consistency and ease of use
- Ability for established and new entrants to access payment systems in an open, transparent and low-cost manner, only subject to prudential safeguards

3.1.2.3 *Information-enabled Payments*

- Ability to include minimum remittance information to reconcile the payment, via the clearing institution (End 2016)
- Ability to include unlimited information relating to the purpose and circumstances of the payment, including funding instruments, accounting and business or personal purpose, via accredited information intermediaries, accounting and solution providers
- Ability for parties to a payment to enable permissions for information sharing with third parties in a secure and convenient manner

3.1.2.4 *Simpler Payments*

- Ability to address domestic payments in simple manner for individuals (End 2017)
- Ability to address and conduct cross-border payments in a simple manner

3.1.2.5 *Secure Payments*

- Ability to establish a digital identity for private/public organisations to conduct transactions with integrity and non-repudiation

- Ability to establish a digital identity for SMBs to conduct transactions with integrity and non-repudiation
- Ability to establish a digital identity for individuals to conduct transactions with integrity and non-repudiation

3.1.2.6 *Cheaper Payments*

- Reduce wholesale cost of real-time domestic payments to agreed benchmarks for clearing institutions
- Reduce wholesale cost of real-time cross-border payments to agreed benchmarks for clearing institutions

We suggest specific cost targets could be set in consultation with key stakeholders and based on worldwide ‘best practice’ benchmarks.

3.2 Industry Road Map Development

Possibly the toughest to develop and refine as the world changes, even for a single organisation, developing and sticking to a road map for an entire industry is even more challenging. Given the rapid development of new technology as well as adoption of new behaviours by consumers and businesses, mandating a very detailed road map can often build in higher costs or risk failure from assumptions about the future that fail to eventuate.

However, it would appear feasible to charge an industry body to develop a high-level road map, given funding to resource the effort required. The white papers developed would then be the basis for consultation as well as validation against global developments and best practice. The independent directors mooted by the Bank would also play a critical role in balancing industry self-interest with the broader needs of the public and business.

There is broad agreement that the focus for this road map has to be on shared infrastructure and systems that require collaboration, not the provision of specific customer-facing products and services, which is the purview of individual providers. Developing a set of guidelines that limit the scope of this strategy to such capabilities will be important in clarifying the boundaries of the shared systems and minimising debate and conflict spurred by self-interest.

Since technology building blocks and needs may change over time and require ‘tacking’ to achieve the targeted outcomes, the flexibility to adapt the road map at agreed milestones should also be a principle adopted by participants and the regulators.

Some building blocks, the proposed Real Time Payments Hub being one example, might lend themselves to be outsourced to commercial third parties if an industry consortium is not viable. The development of toll roads by the Australian public sector in partnership with the private sector is one model, but there may be others. Clarity on the principles that determine

the ‘purchaser’ of such products and services and the process for justifying, funding and spending scarce capital on shared assets is also required to avoid a muddy path to outcomes.

Will the RBA participate in such funding from the public purse or simply mandate the private sector to do so? Where a commercial business case cannot be made for a desired investment, perhaps the RBA would consider a subsidy in the public interest. Given that the focus is on shared infrastructure for the broader good, principles from Public-Private Partnership models may be useful to incorporate into the terms of reference for a new industry body.

4 Real-Time Payments

The Bank sees a system providing real-time payments as a building block to further innovation in the retail payments system. Such a system should be as open as possible, implying that the costs for new players joining should not rise significantly with the number of participants. The Bank believes that there is a case for settling these transactions in real time so that real-time payments do not rely on credit provision. All these points, according to the Bank, suggest the adoption of a hub-based solution.

The Bank recognises that there are potentially significant costs involved in a new system, risks around any commercial model, and the potential for the exercise of monopoly power. It therefore does not rule out the possibility that a commercial model is not optimal and that such a system would need to be established by the Reserve Bank.

4.1 An Open Real Time Clearing Utility

Current payment methods - such as EFTPOS, Direct Entry, Internet Banking - and their constraints may colour our views in designing new solutions.

However, new funding instruments, new providers and operators and new channels for payments need to be supported as well, without necessarily knowing in detail what they may look like in the future. The rapid growth in mobile payments was not evident even five years ago, so we can expect more surprises in the future. Whether NFC becomes a widely adopted technology at the physical Point of Sale is still not certain. Biometrics for identity verification is still an emerging technology but a slick user experience may yet make it widely acceptable.

Identifying and supporting generic requirements, both in functional terms (for timely, cost-effective and risk-managed services) and architectural terms (flexible, scalable, open components), is perhaps a better approach than betting on specific technologies.

By separating the funding instrument from the channel and the 'point of payment' technology implementation, a generic payment-messaging framework for industry can be the focus for innovation. Rather than mandating the technology platform to be used, it would be preferable to set Information Level and Service Level standards to be met (at different price points) to suit the wide and varied needs of consumers, businesses and payment service providers including Financial Institutions.

Figure 1 depicts a high level overview of the suggested model elements.

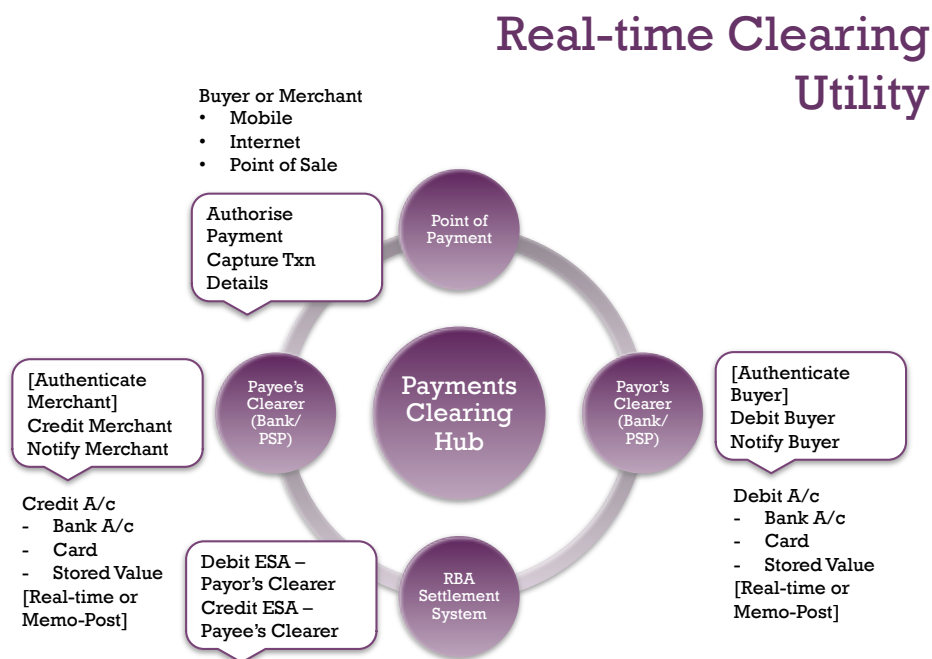


Figure 1 Open Real Time Clearing Utility

4.1.1 Open Real Time Clearing Model

The elements of a model for an Open Real Time Clearing Utility (ORTCU) may be as follows.

1. **Participants:** Only accredited clearers can connect to the ORTCU and participate in the clearing function. The clearer may act for either the payor or the payee and may be a Financial Institution, ADI, or any providers who meet the RBA’s Exchange Settlement Account holder requirements. This preserves the current systemic risk management protocols without the need for significant change. Subject to prudential assessment, clearers may allow third parties (value-added providers, corporate clients) to directly submit transactions to the ORTCU while the clearer bears liability for such transactions, to speed up and enhance transactional services even further.
2. **Wholesale rather than retail payments:** Clearers (or their service providers) will interact with retail consumers or business clients to operate a commercial product or service and the ORTCU will only ever receive payment messages from clearers. The ORTCU will never communicate directly with end customers of the retail or business service.
3. **Integration:** A variety of interfaces and ‘plug-and-pay’ modules will enable clearers and their agents to connect simply, quickly and cheaply to the ORTCU, both directly and via commercial products and services from vendors.
4. **Payment Authorisation Capture:** Payments may be authorized by clients (payors) on any Point of Purchase or transactional platform - internet, mobile or physical – and

submitted to the ORTCU via an accredited clearer. The authorisation may simply identify the payor, payee and amount, with the funding instrument (bank account, credit card, stored value account, etc.) being an optional item for subsequent selection via the payor's provider.

5. **Payment Request Capture:** Payments may be requested by clients (payees) on any Point of Purchase or transactional platform – internet, mobile or physical – and submitted to the ORTCU via an accredited clearer. The request may simply identify the payor, payee and amount, with the settlement instrument (bank account, credit card, stored value account, etc.) being an optional item for subsequent selection via the payee's provider.
6. **Message format:** The submission of a payment authorization or request to the ORTCU is via an 'open' messaging interface (for which standards already exist, e.g. ISO 20022 under schema developed by APCA) and security (payor/payee authentication, etc.) standards to be agreed.
7. **Enhanced Information:** A transaction reference would allow all parties to link supporting information to the payment. Making this unconstrained by the clearing message itself and enabling service providers to leverage transactional data could revolutionise how business is conducted by removing existing constraints on information sharing. This could also change the economics of the utility by enabling new revenue streams built upon the base clearing function.
8. **Clearing service:** The ORTCU would conduct the routing, request for authorization and notification of clearers (the end clients would be notified only via the Clearing intermediaries) in real-time. Clearers would be obliged to meet real-time service levels in processing payment authorisations and payment requests – ideally via real-time posting to customer accounts but possibly via memo-posting and suitable risk management of the exposure.
9. **Authentication & Non-repudiation:** Security protocols for user authentication will be developed to a common agreed standard. This requires more work to detail since current security protocols are tailored for each payment silo – e.g. PIN capture and encryption via PIN Pads for EFTPOS, optional PINs for credit card payments, etc.
10. **User Account Update:** The eventual update of the payee's account, whether bank, card or Stored Value account, is also conducted by the clearer.
11. **Settlement Service:** The RBA would be a participant connected to the ORTCU via an enhanced or new Real Time Settlement system for low value, high volume payments. Settlement of funds would be effected using the Exchange Settlement Accounts of the two clearers in each transaction.
12. **Aliasing Service:** In addition, an industry 'aliasing' service may be offered to address the ease of use and account portability requirements.
13. **Cross-border Clearing:** Future enhancements could include linkages with equivalent systems overseas, e.g. the UK Faster Payments Scheme, to enable the real-time clearing of cross-border payments, though additional elements such as foreign exchange trades and arrangement for cross-border settlements will be involved.

4.2 Architectural Options

The Bank has settled on the need for a real-time payments ‘hub’ as a solution to the gaps identified in payments capabilities. There appear to be two main architectural options that may be considered:

- ‘Hub and Spoke’
- Networked Nodes

The ‘hub’ design has been implemented by vendors such as Vocalink and proven in the UK market. The ‘networked node’ model has been adopted globally by SWIFT and is also a viable architecture. Each of these has advantages and disadvantages but we do not propose to detail them in this submission. This is better evaluated under a tender process when selecting providers, against weighted criteria for selection, to achieve the agreed outcomes.

4.3 Commercial vs. Public Utility Models

The Board “recognises that there are potentially significant costs involved in a new system, risks around any commercial model, and the potential for the exercise of monopoly power. It therefore does not rule out the possibility that a commercial model is not optimal and that such a system would need to be established by the Reserve Bank.”

We submit that:

- A ‘buy’ rather than ‘build’ approach could reduce costs and risks significantly;
- Commercial viability is founded on the pricing model agreed by all participants;
- Having a clearing utility run by the RBA is not necessarily in the public good.

There are several vendors who claim to have most or all of the required technology solution for a Real Time Clearing Utility already in place, with licensing or transaction fee models for commercial operation. This means the solutions can be implemented for a fraction of the original investment. If tailoring to ‘Australian’ requirements is minimized, the cost of custom implementation and the risks of a blowout in time frames can be minimized as well.

Our qualified estimate for the costs of implementing such a commercially available solution is \$20-\$25 million dollars and an implementation time frame of under 18 months. A consortium of vendors could in fact deliver a solution for a lot less. Banks and other clearers will incur additional costs to integrate into the utility, but with the use of available vendor packages, these can be minimized. The challenge for incumbents is routing the most appropriate transactions to the new clearing stream, which will vary with the architecture and complexity of their current product systems and customer channels. This is a consequence of the provision of a new clearing stream, rather than the design of the new clearing utility.

The costs and risks of the utility can be further managed via a tender that asks for commercial providers who can build, own and operate the entire Real Time Clearing Utility, with only the Settlement Service being provided by the RBA. This approach is subject to commercial viability and enforced participation by all current Clearing institutions in a limited timeframe. There is also qualified private venture capital interest in investing in such a venture.

The commercial viability of this venture is founded on the fee structure proposed and the attractiveness for incumbents of building and marketing new (or re-engineered) products and services to leverage the Open Real Time Clearing Utility. Since major banks evaluate new products in the context of existing ones, large-scale cannibalisation of current products by new ones is generally not welcome. Migration of low-fee products, such as corporate Direct Entry services, to higher value products with higher fee potential would be welcomed.

Competing products may include online or mobile credit card payments with ad valorem interchange fees for issuers and merchant fees for acquirers. A new service with very low 'flat' transaction fees alone would hold little upside for existing providers to shift significant payment volumes or innovate via new real-time services.

So an ad valorem fee model with an 'interchange' component for funding institutions may hold the better prospects for industry adoption and innovation in new products and services.

On the other hand, it may be perceived that a commercial operator may charge higher fees than costs and reasonable commercial returns could justify, taking away from the ability of new market entrants to innovate by leveraging the real time payments utility.

A pricing model that balances the need for commercial viability with a cheap service to spur adoption will need to be developed and agreed with all stakeholders. A collaborative and consultative approach backed by regulatory powers should yield results.

The prospect of 'price gouging' by a monopoly operator may be less likely given that the new payment clearing option competes with all the established systems, i.e. BECS, BPAY, CECS and card schemes. So product providers could keep using their current clearing options if monopolistic pricing was experienced.

Finally, the rationale for a regulator to also be a provider of a clearing utility is more debatable.

In emerging markets such as India, the Federal Government has intervened to develop and invest in the creation of infrastructural systems for industry participants to leverage, to achieve speed to market and avoid the need for a commercial 'business case' for investment. Such infrastructure is seen as equivalent to building physical roads, communications and

water supply, to deliver economic benefits at large and for governments to deliver benefits speedily to the ‘unbanked’ population.

Such an interventionist approach is harder to justify in developed economies such as Australia.

The new utility will need to compete with established clearing systems and the card schemes to gain volume from the major banks and new entrants. Major clearers and new entrants have to be cultivated with pilot schemes to test new products under competitively sensitive arrangements. Consumer awareness of new capabilities may be a prerequisite to creating demand for real-time payment processing. These commercialization activities, along with the capital requirements for continued investment in the platform for enhanced services and SLAs, may not sit comfortably with any arm of the RBA, the primary regulator of payments via the Payment Systems Board.

If we embrace the general principle that the public sector should not participate in any market unless it is ‘broken’ or the public good objectives are not being met by the private sector, then the industry should surely be tested on its appetite for establishing and operating the Open Real Time Clearing Utility.

The best next step in this regard would be the development of pricing models that balance the needs of incumbents, new entrants, the regulator and a commercial operator. A new scheme would need to be established to manage the new clearing stream – this is preferable to using the existing BECS scheme for a completely new payments capability. This scheme organisation, similar to EFTPOS Australia Ltd, would be the vehicle to test and agree the wholesale pricing for the new clearing stream. [There may be a case to extend EFTPOS Australia’s brief to also operate this new scheme.]

5 Conclusions and Next Steps

The strategic objectives proposed by the RBA appear realistic but would be better agreed under an overarching framework of broader goals to be achieved over a 10-year time frame.

The new industry body proposed by the RBA would be best placed to review and agree this strategic framework of 'where we want to be' and then drive the development of a road map and actions for 'how we get there'.

There are already at least three viable solutions in the market to provide the software and technology platform for an Open Real Time Clearing Utility. Given a commercial pricing model agreed with industry and the RBA, known costs and risks of operation and commitments to connection and transaction volumes by the major banks, it may well be attractive for a private entity to be established to take up this venture.

With the industry governance mechanisms envisioned by the Bank and the more particular scheme of operations for the utility under APCA, the outcomes sought by the Bank should be achievable in the timeframes proposed.

The best next step for the Bank would be to appoint the new or enhanced industry strategy body proposed, with a clear terms of reference. The development of agreed strategic goals, objectives with timeframes and a first cut of a 5-year industry road map by 31 March 2013 might be the initial brief.

Testing the commercial viability of a new Open Real Time Clearing Utility would require the development of pricing models that balance the needs of incumbents, new entrants, the regulator and a commercial operator. A new scheme organisation, similar to EFTPOS Australia, would be the vehicle to test and agree the wholesale pricing for the new clearing stream.

A Request For Proposal for the creation and operation of the Open Real Time Clearing Utility could be developed under the supervision of the new industry strategy body, to invite public tenders by 31 March 2013 and to finalise contracts by 30 June 2013.

Given known industry capabilities, the new utility could be in operation within 9-12 months, i.e. the first real time payment could be processed by 31 March 2014.

Australia would then be well on the way to a world-class payments system.