ERNA

Project ERNA submission on the Strategic Review of Innovation in the Payments System: Issues for Consultation June 2011

1. Introduction

If you want a healthy growing tree attend to its roots.

The Strategic Review's introduction perversely worries about lagging behind other countries: it should be considering how Australia can gain an advantage by getting ahead of other countries.

The flight of manufacturing and services from our shores leaving mining and a besieged farming sector to carry our economy can be traced to our lack of competitiveness. That in no small way is impeded by our extremely costly and inefficient payments conglomeration.

Our money system runs entirely on faith and trust, as our currency has no more intrinsic value than an IOU. Real goods and services are being swapped for a promise. The system therefore has to be imbued with a substantial veneer of safety for participants: it must provide assurance that the swapped value can be traded in for other real goods or services.

The Strategic Review paper discusses the issue as a collection of payments systems, and wonders how these can be improved or added to in pursuit of a set of rather vague goals.

This submission takes the view that our money system is the key-stone in our social and economic foundations. It is not merely a disembodied tool for paying for something. Rather it is what enables all the things we do in our society to happen. To the extent that it is inefficient, we get sub-optimal results out of our processes.

Call it a transaction system, because payments are only one half of what is actually going on. The payment is only one side of the transaction. Just thinking of it as a payments system hides what is really going on behind the payment, which obscures its importance to our

society and economy. It is in fact the most critical part of the whole economy: without it the entire economy promptly stops.

The fact is even existing systems are generally collecting information about both sides of the transaction, that is, the money and what it bought: Look at your Coles supermarket docket. It is only the intermediary systems that are failing here.

The tenor of the issues paper suggests that Reserve Bank staff are unaware of how important their policies are to our society as underpinned by our economy. What comes through is that they are sanguine about the state of payment systems and that it is generally content to sit back and watch developments from the sidelines. The importance of these systems and the RBA's role seems lost on them. Psychology says that too sanguine an attitude can become unhinged from reality, and that such Pollyannaishness fosters complacency.

Suggesting writing a few thousand more lines of legislation and regulation to maybe prompt some additional consolidation is not going to improve matters; it will further increase administrative compliance costs.

Expecting competing businesses to come together in some form of co-operative or joint-venture to redevelop a uniform system open to new entrants on an equal footing is unrealistic.

The project to economically revitalise and nurture Australia (Project ERNA) is an extant proposal that addresses all of the issues in the strategic review paper and a lot more. It takes a holistic view of our society and economy and how the transaction system interacts with them to produce the intractable problems we face. It also provides a mechanism for progressively achieving a holistic solution to many of those problems.

Project ERNA has similar characteristics to the National Broadband Network (NBN): it proposes a transaction processing network with access that is wholesaled/retailed to clients in a manner similar the NBN fibre network.

Project ERNA would put the Reserve Bank of Australia (RBA) overtly at the centre of the economy. It would not just be seen manipulating interest rates, for which there would be less requirement too.

2. Objectives of an Efficient Payments System

Project ERNA is a redesign of our transactions infrastructure from the ground up: we have to have a good foundation to replace the rickety base on which we teeter today.

The Project ERNA architecture provides a real-time-gross-settlement facility and a lot more. It can pseudo-anonymously and therefore privately serve as the principal register of almost anything for which a payment is exchanged; even barter. Shares, bonds, goods, services or gift transactions can all be registered in real time.

2.1 Attributes Valued by End-users

Timeliness

Project ERNA provides for real-time settlement or commitment with contingent settlement as necessary using credit or escrow procedures.

Accessibility

Project ERNA is designed to be assessable everywhere via a range of communications and access strategies and includes an international interface. It would also be engineered to be assessable to everybody, including the disabled, disadvantaged and via power of attorney/guardianship arrangements.

Ease of use is designed in with a key aim being to reduce input to a minimum. Only new data has to entered, the amount of which reduces over time. Transactors generally would only select existing data or tick options other than to enter a dollar amount. Only a minimum of private information is visible to the parties and none to anyone else, excepting legally sanctioned interception operations.

Integration of or with other processes is a forte of the Project ERNA system. It can provide order through delivery tracking or tracing as required. It can delay payment pending acceptance too.

Safety and reliability are design strengths of Project ERNA. Payment or commitment to pay occurs immediately. It can also ensure that payments are made and made on time, except in some international scenarios and cases of insolvency, which it militates against too. Transacting parties' information is entirely private to them and cannot be stolen without collusion between people in different agencies, nor can it be otherwise accessed without legal sanction in defined circumstances. Fraud is next to impossible and excepting unimaginable scenarios, inconsequential if perpetrated because it is quickly recognisable and rectifiable. The system knows where all the money is. The design aims to ensure that even if a hack is successful it cannot benefit financially.

Reliability is very high, because no single attack or natural disaster or accident or decree can bring down the whole network. It is not envisage that any legitimate government action would shut down the network and so the possibility to do so with a single switch is not provided. Any attack or intrusion or disaster can only ever be a local event from which

recovery is certain. How temporary is dependent on restrictions affecting re-access to the point of failure and the availability of rehabilitative resources.

2.2 Desirable Attributes for Payment System Design

Pricing transparency and restraint is best achieved on a level playing field. Project ERNA provides a single platform on which all others ride much more efficiently and therefore cheaply. The operating and refurbishment costs would be far lower than for the amalgam of all current systems: There is nothing more efficient than replacing multiple systems with one system that is less complex and more reliable.

Robustness is ensured by various architectural features such as semi-autonomous distributed networking; duplication; location segregation; backup; and alternate systems.

Security is assured through a blend of systems, procedures, topology, encryption, awareness, data segregation, and futility.

Interoperability is simplified by producing a common interchange medium and reduced external system requirements.

Open access is supplied in a similar way to wholesale telecommunications cable bandwidth provided to carriers. Government has both exclusive and non-exclusive data rights to sell and resell in a manner similar to radiofrequency spectrum.

Risk management is a principal feature. The system is capable of assessing credit risk on-going and ensuring delayed or credit payments are made, made on time, or made subject to a contingent event. It can warn of an impending deterioration in debtor's financial circumstances both to secure loans and prompt intervention to attempt to save the debtor. It cannot forestall sudden events, but it can mitigate the effects for both parties.

Ease of adaptation to changing needs is assured. It is designed to be logically irreducible, such that future improvements do not need to alter the existing structure, just add to it.

3. Snapshot of Consumer Payment Patterns in 2010

The previous study finding "that cash remains the most widely used payment instrument in Australia" seems an aberration; but, is it relevant anyway? Cash is a small fraction of the value of payments in Australia. Few if any businesses would pay the majority of their bills by cash. Nor do most households: Cash is not generally used by the majority to pay larger bills. Cash is more normally used for entertainment, groceries, fuel, and some clothing. Few of us today carry large wads of cash in our wallets, pockets or purses. The fact that we use cash for lots of transactions is more down to deficiencies in available transaction systems: That

view seems to be borne out by the statement that “use of cash and cheques has declined significantly” due to improvements in card systems.

The views in the review’s analysis about the comfort with current systems are disturbing. There seems to be no appreciation of the economic cost of the wasted resources, and losses, grief, and even health problems inherent in using the current conglomeration of payment systems. All of its duplication adds to our cost base and erodes our comparative advantage.

Project ERNA looks beyond convenience: It takes account of the actual and potential economic renaissance deliverable by an optimised transaction system – that’s true efficiency and effectiveness.

4. The Decline of Traditional Payment Methods

Yes, existing electronic systems cannot readily replicate cheque advantages, but Project ERNA can.

Physical face-to-face, instant exchange is a principal feature that is envisaged operating similar to two mobile phones exchanging data by touch in some scenarios. It can also safely accommodate post-dating.

Unlimited additional data to accompany the payment is also a principal feature of Project ERNA, as it is half the trade. It is generally not free text though and much of it will be selected from prior entries.

A requirement that payment is to be made when only limited information is known about the payee is dumb, it’s a source of crime and it is not necessary and its drawbacks are overcome by Project ERNA’s privacy system. There is no more cheque related faking, falsifying, stealing, counterfeiting, etc.

Greater financial control where, for instance, the need for a specific signature provides key account signatories oversight within a business is a design forte of the Project ERNA system.

ERNA also ensures that the cheque-like transaction cannot be dishonoured.

4.1 The Decline of Cheques

Issues for discussion

1. Are there aspects of cheque usage that are unlikely to be dealt with by industry initiatives currently underway or likely to be undertaken in the next five to ten years?

Cheques are an open avenue for crime that will not go away while they remain in use.

3. to 4. No comment.

5. Is there a case for phasing out cheque clearing over time?

Yes.

How could that be managed while ensuring that satisfactory alternatives are developed?

This is achievable through a mobile phone application linked to an account, but it will not make cheques any safer to use.

6. Should government agencies' policies on payments be used to influence cheque usage?

Absolutely: Cheques are sometimes used as a means to further delay payment by taking advantage of the inherent processing and transmission time.

7. Should the approach to cheques be determined by individual institutions, determined collectively by the industry, or determined by the Payments System Board?

The Board.

4.2 Cash Replacement

Issues for discussion

8. Are there any impediments to the development and adoption of products to replace cash?

Yes: vested interests, fear and ignorance.

9. Is there any case for public intervention in cash replacement?

Absolutely: it cannot be successfully achieved without it. If left to institutions the systems will not be able to avoid having shortcomings that will create losers. It has to be a public-private-partnership where everyone wins, as they would by implementing Project ERNA.

5. The Environment for Innovation in the Australian Payments System

That the inability of the fragmented players to innovate in concert is recognised is a positive.

5.1 Why Might Innovation be Difficult: Insights from Network Literature

Innovation is difficult because an individual decision-maker does not take into account the benefit that their joining the network or adopting the innovation provides to others. They are apt to consider themselves as losing some advantage where innovation may put others on an equal footing.

The architecture of Project ERNA enables individual innovation that does not affect other users other than levelling their playing field. By analogy this architecture becomes the standard: it provides all the roads, and the players provide the private driveways that connect but do not interfere with one another's.

Policy recommendations from the literature

A standards approach is not a suitable policy response in itself, not least because standards create yet another compliance-administration impost on an already extremely costly regime. This is demonstrated by the fact that agencies assigned responsibilities for compliance oversight are unable to fulfil that role properly, as they never have sufficient resources. They just do what they can with what they've got: they apply the cop-out 'light touch' regime.

The Australian experience

The important point the paper touched on here is that "the aid of some form of external intervention" was behind significant innovation that has occurred. But as with standards, governance initiatives are not the way to go, because of the associated compliance-administration costs that go with that approach. The correct administration of existing governance through low cost technical applications is achievable through inherent capabilities in the Project ERNA architecture.

5.2 Representation in Industry Governance

The present system of governance has produced poor outcomes for the community at large and should be completely overhauled once it is decided to pursue a new transactions' architecture. There has been a complete market failure to unify systems in the general economic interest of the nation. Individual organisations have instead protected their patch. As we have seen this year with the several NAB systems' failures, the community bears the cost. Industry left to its own devices will always opt to cherry pick potential service offerings in the pursuit of profit – expected and so far accepted and good for them, but not for the nation. The private sector cannot and will not of its own accord deliver the national infrastructure that the nation needs. While stakeholder needs must be considered, such infrastructure cannot be designed by any committee – approved yes.

Proprietary services would still be decided by individual providers within the proposed Project ERNA architecture. Existing offerings such as ATM for example would, however, have to alter their behaviour. ATMs would no longer dispense cash: instead, they would enable transaction services.

There would be no stand-alone payment systems within the proposed Project ERNA architecture: existing participants would operate as an overlay on the uniform Project ERNA infrastructure.

There would be no need for co-operation between payments systems participants: there would be automatic cohesion at the machine level of the Project ERNA infrastructure.

Something in the nature of the Payments System Board should exist to tie down system requirements akin to a standards setting body.

5.3 Meeting the Cost of Innovation

There are always operating and refurbishment costs in any system that must be borne by the beneficiaries. In a national infrastructure system such as Project ERNA these would be covered by a data toll that can also deliver a dividend to general revenue. The tolling basis can vary according to the type of data and whether it is wholesale or retail sourced.

Along with everyone else in the nation, payment system organisations would benefit from a reduction in their administration, service delivery, research and development costs – their operating costs generally.

5.4 Impact of the Regulatory Framework

Legislation in the absence of adequately resourced policing (governance) cannot produce the intended results and the cost of that is such that it never can be properly resourced. Prevention is always better than cure, which is another key aim of the Project ERNA design.

Generally, for a one off system implementation cost the Project ERNA infrastructure can deliver certain compliance in regard to payments. Compliance itself then costs nothing. That would apply to each automated process. In a semi-automated compliance process, the cost is still going to be low: the automated portion would still be a one off cost, while the variable cost would be in the amount of new data collection and entry required.

In the process, such infrastructure envisaged under Project ERNA can deliver a more level field for competition. It would lower barriers to entry.

5.5 International Models for Industry Governance

Governance as noted above is inherently expensive and the more it can resolve issues in one session the less it costs. Ideally it should be able to identify an issue, decide a

resolution, have that implemented in an assured way and then not have to deal with it ever again.

A body that oversees operation and rule setting within a master system would greatly reduce the need to oversight disparate service providers' offerings delivered over that system. They would be automatically constrained. Such an outcome is achievable in the Project ERNA architecture.

Issues for discussion

10. Do current governance arrangements adequately promote payments system innovation?

> Self evidently not, since no particularly useful innovation is on the horizon.

11. Are the needs of payments system users and non-ADI payment service providers adequately considered in decisions about the direction of the payments system?

> Obviously not, since there is no prospective innovation in train to provide the sorts of services alluded to in the issues paper.

12. Are there ways of altering current governance structures to make innovation easier?

> Not really. The playing field has to be changed to achieve that.

13. Are there ways of altering current governance structures to take more account of the views of end-users?

> Yes, one. Set up a new directive regime in the manner of Project ERNA.

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 costs and the public interest?

> Absolutely: that is exactly what Project ERNA is designed to achieve. It recognises the strategic importance of an effective transaction system, which a mere payments system cannot.

15. How could such a body have the capacity to reach decisions across a diverse group of members?

> In the Project ERNA context, such a body would have a relatively easy role. The architecture is such that almost anything a provider or user could want included can be accommodated. Conflicts would be rare due to the way each is intended to interact with its infrastructure.

16. Could such a group make binding decisions and how could they be enforced?

Yes they can if the number of binding decisions can be kept low and that would be the case in the Project ERNA context. This would be the case because most of the things that would be likely to bring the parties into conflict can be accommodated on the private side of the infrastructure where they do not need agreement. Binding decisions taken would normally be built into the architecture and thus enforced by the system.

17. Could formalisation of a broader mandate for APCA, coupled with broader representation, provide better industry-wide outcomes?

No. The APCA is a creature of the current inefficient payments system that facilitates so many ills in our society. Its mandate would shrink with the implementation of Project ERNA.

18. What role should the Reserve Bank and the Payments System Board play in setting the reform agenda for the industry?

The RBA should act as a board of directors for the Payments System Board, which should morph into a management authority that implements and oversights the operation of new transactions infrastructure proposed by Project ERNA. In this way the RBA will gain additional tools enabling it to differentially affect inflation across sectors of the economy. It would also gain more perfect and timely data to inform its decisions.

19. Have concerns about breaches of the Competition and Consumer Act (formerly the Trade Practices Act) prevented the industry from achieving greater co-operative innovation?

Probably: Getting the entire industry to agree to co-operative change of its own accord is not possible; however, segments may desire to co-operate but would likely fall foul of cartel provisions.

What approaches are suggested to deal with this in a way that does not undermine the intent of the Competition and Consumer Act?

This is less of a concern in the Project ERNA context, since it would be a government enterprise much like the National Broadband Network.

What are the advantages and disadvantages of each?

The Project ERNA advantage is that it would inherently enable and support more competition and quality innovation. The disadvantage of any co-operative industry initiative is that it necessarily attempts to preclude additional competition. To be

viable it has to be proprietary to a small group of participants. Such policies end in anti-competitive enclaves like the 'four pillars' banking and free TV licensing that hinder or preclude new entrants.

5.6 Structure of Clearing and Settlement Rules

The current archaic system is based on well founded paranoia, which has engendered a cumbersome slow moving system that aims to make each step safe. What is needed is a responsive nimble system that still delivers safety.

Such a system might be understood by considering how Apple Computers operate. Their operating system is closed and yet a very large number of applications are provided to run on it by other parties without affecting its integrity. The proposed Project ERNA architecture would operate via a similar model. Each of the current and any new players' private systems would be akin to applications running on the Apple OS, which approximates how the Project ERNA infrastructure services the transacting parties.

Issues for discussion

20. Does the current structure of clearing and settlement adequately allow for the introduction of new payment products?

No. It acts as a barrier through cost and procedure.

How could this be improved?

The proposed Project ERNA procedure is to know the deliverability state of each side of a transaction and if confirmed immediately change ownership when the parties commit themselves. But, access still may be withheld pending some further event that the parties agree to and enter into the system.

21. Is the current structure of rules applied to payment systems, including the five APCA clearing streams, the most appropriate?

No. The rules are one sided: they allow intermediaries to delay payments, which at times may be detrimental to clients.

22. How should clearing and settlement rules change to take best advantage of upcoming functionality in RITS for same-day settlement of bilateral bulk payment files (and existing functionality for same-day batch settlement). Could rules be established for individual 'settlement streams', including for instance on the timing of availability of funds and the individual transaction values eligible for that stream?

Even bi-lateral bulk payments entail some delay that could be detrimental to clients. These systems require too many resources (people, time, maintenance) and are therefore more costly than is necessary. See the alternative at 20 above.

23. Are there alternative models for clearing rules? For instance, could a set of generic (but narrowly focused) clearing standards cover multiple payment systems, with more detailed system rules applied at the individual system level? Should such clearing arrangements be mandatory for all payment systems, including those not currently party to APCA arrangements?

These questions are advocating an even more complex and therefore costly system.

24. What other ways are there of allowing providers of new payment products or systems easy access to clearing and settlement arrangements?

The best way to enable anyone to clear and settle on an equal basis and in real-time is to implement a single network owned by a government business.

Is there a case for establishing a standard minimum payment message type that participants are obliged to accept from agreed counterparties?

Yes, and that can easily occur on a single network, but is costly and difficult to implement and maintain on multiple private networks.

25. Do existing clearing arrangements allow sufficiently easy access for new participants?

It is doubtful that they do or ever can due to competition issues.

If not, what could be done to improve this?

A government-business run neutral system is required to overcome the range of problems that multiple private systems present.

5.7 System Architecture

In the current system hubs would be dangerous points of failure as well as significant barriers to new entrants.

In the Project ERNA architecture all parties connect to a grid. The connection is primarily a read only access. Write access is generally confined to one side of a transaction: either abbreviated payment details are entered or a traded service or good is entered (mostly via a look-up facility).

There are public rules and private rules. Public rules are incorporated into the grid by the system's operator. Private rules sit outside the grid on the connecting party's system and

therefore only affect private aspects of their own transactions: they have no impact on the grid's other participants.

Issues for discussion

26. Could greater use of hubs improve efficiency, access and innovation in the Australian payments system?

> Who is going to provide such hubs if not the major participants in the current payment system? Hubs in the current system would likely entrench existing payments providers to the detriment of innovative new participants. Hubs may speed up some processes if those providers allow them to; however, they will not increase the payments-system's utility.

27. In what areas would a hub or hubs be useful – for instance, for transmission of clearing files, or for real-time individual transactions? What functions could a hub or hubs provide?

> Hubs are an integral part of Project ERNA's design. They are used to speed up access; perform the basic transaction process; distribute storage; and protect the network.

For what type of payments would a hub be useful?

> Hubs impact real-time payments in particular.

Could a hub be available for use by multiple payment systems?

> Yes. Project ERNA provides for making its transaction grid available to any variety of payments systems.

28. Should hubs be considered best practice for new payment systems?

> Yes.

Should existing systems be migrated to a hub?

> Not as such.

Could hub services be offered in a way that allows participants to opt in, while providing full services to new entrants?

> In the Project ERNA context all participants are effectively connected to multiple hubs and there is no opting out.

29. What type of ownership, governance and management arrangements would be desirable for a hub?

A Government business in the manner of the National Broadband Network company should operated a network of hubs as envisaged in Project ERNA.

6. Innovation Gaps in the Australian Payments System

Issues for discussion

30. How widespread is the demand for the innovation in question and how significant would the impacts be?

It is doubtful that many people are even aware that they can demand such innovation. Demand most likely resides in business and particularly small business clients of payments system providers. None of that means the RBA should not pursue a strategic shift in technology in the national interest.

31. Are there any specific impediments to that innovation occurring, e.g. barriers to entry, co-ordination problems, technological constraints?

There are no technology constraints to strategic innovation. There are competitive, economic and procedural barriers to entry for private sector innovators. Public Service cultural barriers impair government's ability to innovate.

32. Is there a case for public intervention?

Definitely: the transactions system is similar to the telecommunications system in that it must service the entire country. As seen in the telecommunications sector private enterprise is unwilling to service the entire country without Government assistance – it is a commercial imperative that they cherry pick to the greatest extent possible. This is what is behind the need for a National Broadband Network, which incidentally would support Project ERNA.

6.1 The Transmission of Data with Payments

The transmission of additional data is built into the Project ERNA architecture. It is the other side of the transaction and the fundamental point of difference from the current purely payments systems. It not only enables large amounts of additional data to attach to a transaction, it militates against the requirement for anyone to repetitively supply such data.

Issues for discussion

33. Possible solutions to the transmission of additional data with payments include: the use of existing free data fields in the DE system for a referencing system; the reconfiguration of the DE system to accept much larger quantities of free-form information; or the use of

another system for payments requiring the carriage of additional data. Are there other alternatives?

> Free form information supply would be a very wasteful endeavour both in storage, and in input and access costs. The optimum alternative is Project ERNA.

What are the advantages and disadvantages of each?

> Project ERNA parses all information and has a store once philosophy: this aims to markedly reduce the cost of input, access and storage. Once stored it is then made available for follow-on processes. One such incorporated process is near-real-time data aggregation and statistics compilation based on all actual rather than sampled data. These data are appropriately available to the transacting parties. These data are also sanitised of personal identifiers and available for access by Government, business or anyone really; however, access would be tolled to pay for the operation of the network. Tolling mechanisms would vary according to the type and frequency of data access. The granularity of the data over time automatically refines to such an extent that the system conceivably back ends at least personal and small business accounting databases at a great cost saving.

Which option is preferred?

> Project ERNA.

How should that option be implemented?

> It is a strategic option with a strategic time-frame attached. It would be delivered in phases from about five years after commencement of the project. Phases refer to both capabilities and distribution. Payments system providers such as banks would be the first onto the network by attaching their current offerings. In much the same way as the National Broadband Network it would be rolled out to test sites initially to resolve scaling problems. The initial phase though is to sell the concept to government, set up the project authority, identify legislative impediments, garner stakeholder requirements and work them into the preliminary design, decide on the mix of hardware, firmware, software and procedures, and source the resources to carry out these tasks.
>
> Improvements to the system would be progressively incorporated over the following decades. As a result Australia's productivity and competitiveness would also continuously improve over and beyond that timeframe.

34. What role should messaging standards, such as ISO 20022, play in any solution for transmission of additional data?

Existing standards would be used along with other stakeholder input to inform the final design. They would be accommodated rather than restrict Project ERNA to their narrower scope.

35. The superannuation industry is working to address issues associated with transmission of data related to superannuation accounts and payments. Is there a contribution that can be made by the payments industry beyond the proposals discussed above?

Project ERNA would accommodate all the superannuation industry's transaction data requirements.

6.2 The Timeliness of Payments

Cash flow timeliness is the bane of many due to current payment systems. It is proposed in the Project ERNA context that automated rules would govern the timeliness of payments. Rules can delay payments until criteria are met and then other rules would largely ensure that payment is made. These rules make commitment to a transaction into a contractual obligation and endeavour to ensure adherence to that contract by both parties. Multi-party transactions are treated as associated bi-lateral transactions. An example would be real-time collection of GST making the ATO an associated party to all transactions. Netting of GST can be achieved in real-time in this architecture. There is no need for it to be separately collected and remitted at intervals, thus creating a saving.

Timing of availability of funds

The Project ERNA architecture is based on real-time payments that may be delayed pending another rules based event, but nevertheless are a system registered contractual commitment. This is a fundamental system ability facilitated by accounts residing within the grid rather than private systems.

Real-time confirmation of payments

This is another fundamental system ability. The system confirms each party's identity and determines ability to pay without disclosing any details. Completion of the transaction creates a contractual obligation on both parties and the satisfaction of rules enables the supplier to access the funds: normally this would mean that the payer acknowledged receipt of goods or services. Ability to pay aims to assess uncommitted funds. Where uncommitted funds are insufficient, at the buyer's option an indication of by how much can be provided to the supplier, then acceptance is at the seller's option.

Issues for discussion

36. To what extent will systems already under development or discussion address issues related to the timeliness of payments?

Small value payments (generally retail) would be a little faster.

What gaps will remain?

Security will remain a problem that hinders the speed up of larger transactions. There is no way to effectively secure the multiplicity of systems in use in their current form.

37. What new systems or enhancements to existing systems would be required to achieve more timely payments?

A genuinely secure system that reduces everyone's risk and input is required and only Project ERNA has the appropriate foundation to achieve those goals.

How could these innovations be achieved?

Implement Project ERNA.

38. Would multiple same-day interbank settlements be sufficient to facilitate faster availability of funds?

No. There would still be delays due to internal processes.

39. Is there a case for a real-time settlement system for low-value payments and how should it be provided?

There is no case for another standalone system, as its operation and maintenance increases costs, which includes security. Attempts to do so within the current system seem to be creating new risks.

40. To what extent would financial institutions' own systems need to change to allow faster access to incoming payments to customers' accounts?

A lot.

What would this involve and how could it best be achieved?

As the need to transfer personal data is what creates the opportunities for criminals, their risks cannot be fully eradicated. Therefore they really can't achieve much more.

Could the desired improvements be achieved by competitive pressures if financial institutions were forced to publicly disclose information on the timing actually achieved on payments?

No. The risks remain and militate against changing their procedures.

Would some form of mandated time limit for availability of funds be appropriate?

> That would increase the risks, since checking procedures would have to be condensed.

41. How strong is the demand for payment options that will provide availability of funds 24 hours a day, 7 days a week?

> Perhaps it is not availability that is the problem, but the risk that a transaction begun out of hours might not complete. It is possible for both parties to lose if an intermediary institution fails before completing the transfer. Funds can be lost to the liquidator. Commitment remains uncertain.

What would need to occur to achieve this?

> Project ERNA handles these problems by removing ownership of the funds from the institution and vested ownership with the receiving party immediately the parties commit. Funds may still not be available until some contingent event occurs, but they reside in the account of the recipient, who may or may not use a different institution. In that case the institution would be holding them on trust and they are not part of its lending funds.

6.3 Ease of Addressing Payments

Addressing payments in the Project ERNA architecture is handled by a separated privacy sub-system. It ensures that each party is the genuine article as a prelude to initiating a transaction event. It is achieved as a rapid dialogue between the parties and the system, which will be automated to the largest extent feasible with the technology of the day (which is already very good for this purpose).

6.4 Person-to-person Payments

In the Project ERNA architecture person-to-person payments are no different to person-to-business payments. They would be straight forward and simple to achieve.

Note that such payments are more open to coercion, which is particularly problematic in current systems (kidnapping, extortion, etc): this problem is negated by the closed nature of the Project ERNA architecture.

6.5 Mobile Payments

Security is problematic with both static and mobile access systems currently in use and in development. They are vulnerable to theft, interception and misappropriation that can be difficult to rectify and expensive to combat regardless.

The Project ERNA architecture envisages a secure proprietary device that can incorporate with a user's communications device (mobile or static): this is to connect and carry out a transaction from anywhere in the world with a link to Australia's network. This improves on having to find an allied bank or ATM or carry vulnerable and dangerous cash or cheques.

Issues for discussion

42. What form are mobile payments likely to take in Australia over the next five to ten years – SMS-based, mobile internet, contactless or some other form?

> Mobile internet will have the greatest geographic reach and therefore is the most likely; but that will likely increase the risk too.

43. Are there impediments to the development of mobile payments in Australia?

> Communications infrastructure is the main obstruction for the moment. The NBN should remove this obstruction if it runs to completion.

If so, what type of payments are being impeded and how?

> All types of electronic payments are affected. They cannot be achieved in some locations.

44. Are there security issues particular to mobile phones that may impede adoption of some types of mobile payments in the future?

> The open nature of the phone operating systems makes them a prime target for hacking by criminals. The current payment systems' insecurities enable fruitful phishing attacks by criminals.

Are there likely to be issues with interoperability of mobile payment systems?

> Yes, in that the different operating systems and continual upgrades will present a compatibility challenge for payments institutions. This would not be the case when operating over Project ERNA infrastructure.

45. Are there adequate standards to support the development of mobile payments in Australia?

> No comment.

If not, what standards are lacking, what types of mobile payments are affected, and who should be responsible for setting them?

> No comment.

6.6 Electronic Purse Systems

The use of electronic purse systems are unnecessary in the Project ERNA architecture, but may be used if desired. A reason for doing so might be for budgeting purposes, to maintain special purpose buckets for a household for example.

Ticketing itself is just another standard transaction in the Project ERNA architecture. Without the deployment of special purpose ticketing systems, the effect of such a system can be achieved through a standard Project ERNA transaction. It only requires the deployment of Project ERNA terminal equipment instead.

6.7 Standards

The difficulty and cost of developing standards lies in trying to provide for everyone's needs. This is not necessary in the Project ERNA context. Only those things common to all are incorporated as standard rules in the grid. Those things that individuals want can be accommodated in their own systems without reference to anyone else and without affecting anyone other than a party that transacts with them. The interface between the grid and other systems will vary according to needs and so cannot be usefully standardised. Each interface should be relatively cheap and probably paid for by savings created by use of the grid's capabilities.

International standards may be used in a bridge for international transfers, which won't be needed if Project ERNA implementation goes as planned. Institutions trafficking Australian dollars would have an account on the grid, which would be tantamount to holding banknotes. They then issue their own currency on their side of the transfer. Compatibility with overseas systems as such would not be an issue. Foreign banks, cards, EFT, etc can all be accommodated in this way.

The Project ERNA grid is secure regardless of the vulnerabilities of parties' systems accessing the grid's information. Identity fraud is not believed to be possible, but if achieved it can be discovered and rectified – fast. Depending on the type of extant theft, it is either precluded or easily discoverable and redress initiated. The security cost burden is very low, which is not the case in the current system.

Issues for discussion

46. What is the case for moving to ISO 20022 compliant standards for Australia's retail payment systems?

> There is a need for the standard but it should only be considered as an interim solution.

What is the preferred process for doing so?

This has to be a mandatory regulated requirement with a short transition period allowed.

47. Should all new payment systems be required to adopt ISO 20022?

Yes.

Should existing systems be required to do so?

Yes.

48. To what extent are other standards, such as device standards, an impediment to competition and innovation?

New entrant access to extant elements may be restricted through cost, procedures, and/or proprietary objections.

Is this justified?

Yes, in a privately provided system; but, why support such a flawed system when an alternative path has presented itself.

49. How should compliance with industry standards, both by new entrants and incumbents, be monitored?

This cannot be done cost effectively or efficiently: it would never be allocated the necessary resources and therefore would always produce faulted results.

50. Is there a case for greater industry co-operation on the setting of security standards for retail payments?

Certainly: it cannot be achieved to any significant degree without it.

If so, how should this be achieved?

This has to be a government led effort; but, it also has to be in pursuit of a unified system such as Project ERNA proposes.

6.8 Future Trends

Issue for discussion

51. Are there any significant changes in the payments landscape in prospect that have not been considered by this paper, for instance in terms of architecture or significantly different payment products?

Not in prospect, but proposed, Project ERNA has not been considered at all. It advocates implementing a vastly different architecture.

What will be the implications of these changes?

A profoundly powerful social and economic tool would emerge. It would significantly lower the country's cost of doing almost everything. It would be immensely safer to use and allow Government to provide us with a much higher level of privacy. It would greatly change many of our problematic social behaviours for the better.

Are there actions that should be taken now to take full advantage of these changes?

Grasp the opportunity that our technological age has presented to us and provide Australia with a strategic advantage by adopting Project ERNA as the way forward. This is not an opportunity open to many countries, due to population size, distribution, political structure, geography, and infrastructure constraints. Australia is almost uniquely able to achieve this project.

7. Early Views and Priorities

Current RBA policies are not in the Public interest at all, as it turns out that the old adage "money is the root of all evil" is essentially correct. It should state that the cash variety of money is the root of all evil. Cash is both a motivator and/or an enabler of most crime. Current policy is to find ways to continue with its existence despite its adverse impact on society and the economy. Project ERNA is the antithesis of this policy and is definitely in the public interest and the national interest.

Governance support innovation can only be approximated while the conglomeration of systems and cash continue in existence. Genuine Governance support is designed to be implemented in Project ERNA. Solvency and fraud protection and compliance assurance are particular strengths of its architecture.

Project ERNA payments have no calendar constraints – processing is real-time 24/7 365 days a year.

Project ERNA contemplates bank runs and proposes a method to throttle and distribute outflows under such conditions, in the interest of safeguarding their clients. There can be no lines outside banks or their ATMs withdrawing cash in a panic. The system can watch for impending signs of capital weakness and initiate remedial steps to shore up institutions some time before it becomes a critical concern.

Project ERNA satisfies the Boards desire to attach data to payments.

While ISO20022 may be a desirable short term goal, it would likely be immaterial longer term if Project ERNA were implemented as envisaged.

8. Next Steps

The RBA has a risk averse culture that seeks to avoid controversy and this is preventing it from acting in the national interest. If it were able to change this behaviour, then it would be able to think and act strategically. It would be able to think beyond regulatory tinkering with the current payments system envisaged in its issues paper. Instead it could countenance a fundamental shift in the nature of this infrastructure as has occurred in the telecommunications industry. It could accomplish its own NBN like transformation.

Then, thinking outside the box, it could get to grips with the payments system's broad impact on society and the economy, which is discussed on the Project ERNA website at www.erna4aus.org. In doing so it would appreciate that it can confer many advantages on Australia that few countries will ever be able to achieve.

In the public interest it would be able to strengthen our financial institutions while better balancing power between them and their clients.

In the national interest it would strengthen Australia's security in many ways.

So the first step is for the RBA to develop a will to act like it understands how important its role is in fostering meaningful change to Australia's transactions processing system.