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Interconnection of Platforms: A case study in property transfer

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Acronyms and Abbreviations

ACCC	Australian Competition and Consumer Commission
API	Application Programming Interface
Conveyancing Act	<i>Conveyancing Act 1919</i> (NSW)
DvP	Delivery versus Payment
ELNOs	Electronic Lodgment Network Operators
ESA	Exchange Settlement Account
IPART	Independent Pricing and Regulatory Tribunal NSW
LAC	Lodgment Acceptability Check
LCS	Lodgment Case Status
LSS	Lodgment Support Services
LVS	Lodgment Verification Status
NECDS	National Electronic Conveyancing Data Standards
NSW ORG	NSW Office of the Registrar General
RBA	Reserve Bank of Australia
Real Property Act	<i>Real Property Act 1900</i> (NSW)
RIS	Registry Information Supply
RITS Regulations	<i>RITS Regulations 2017</i> (RBA)
RITS	Reserve Bank Information and Transfer System
RTGS	Real Time Gross Settlement
RWG	Regulatory Working Group, together with the TOWG (the Working Groups)
TACs	Title Activity Checks
TOWG	Technical and Operations Working Group, together the with the RWG (the Working Groups)

1 Introduction

There is significant competition (antitrust) law and policy concern about the market power of large platform businesses such as Google, Amazon, Facebook and Apple (GAFAs). The *ex post* remedies proposed range from mandatory structural separation through to consumer data portability. One low-level potential competition policy remedy is mandatory interconnection of the incumbent GAFAs platforms with new entrant networks. This would necessarily be based on opening up application programming interfaces to the GAFAs entity. However, providing evidence that this approach has prospects of success is problematic. This paper uses a case study approach to address the research question, "can providing platform interconnection address the monopoly-like structures that flow from network economics in multi-sided markets?".

Requiring the interconnection of telecommunications networks is a well-established mechanism to facilitate access and promote competition². There has been work on the interconnection of platforms as an *ex post* solution to deal with the network effects that lead to the "winner takes all" or "winner takes most" issues that arise in many platform sectors³.

This paper analyses a case study on the interconnection of platforms in the property transfer (conveyancing) sector in Australia.⁴ It examines how an *ex post* interconnection solution is being developed to address platform-based monopoly created as part of an ambitious move by a state government to digitise the process on property transfer and concurrently to digitise the financial settlement associated with conveyancing.

The case has significant potential to provide insights and learnings. The sector is not subject to *ex ante* competition regulation other than standard competition law. The case highlights issues of federalism as part of the sector is regulated at the state level and part at the Australian Commonwealth level. The initial work was in the form of stakeholder consultation by a single state, but there was significant interest from that state's economic regulator (the Independent Pricing and Regulatory Tribunal of New South Wales)⁵ and the Federal competition regulator (the Australian Competition and Consumer Commission).⁶

Conveyancing is the transfer of legal title of real property from one person to another, or the granting of an encumbrance such as a mortgage.⁷ A typical conveyancing transaction has two major phases: the exchange of contracts (when equitable interests are created) and settlement or (when legal title passes and equitable rights merge with the legal title). Australia is a federation and property law

² Martin Cave, 'Encouraging Infrastructure Competition via the Ladder of Investment' (2006) 30(3–4) *Telecommunications Policy* 223; Jan Krämer and Daniel Schnurr, 'A Unified Framework for Open Access Regulation of Telecommunications Infrastructure: Review of the Economic Literature and Policy Guidelines' (2014) 38(11) *Telecommunications Policy* 1160.

³ Christopher T Marsden and Rob Nicholls, 'Interoperability: A Solution to Regulating AI and Social Media Platforms' [2019] (October) *Computers and the Law*.

⁴ Rob Nicholls, *Interoperability between Electronic Lodgment Network Operators – Final Report from Working Groups* (2019).

⁵ Independent Pricing and Regulatory Tribunal, *The Pricing Framework For Electronic Conveyancing Services In NSW* (2019).

⁶ ACCC, *ACCC Report on E-Conveyancing Market Reform* (2019).

⁷ Rod Thomas, Rouhshi Low and Lynden Griggs, 'Australasian Torrens Automation, Its Integrity, and the Three Proof Requirements' (2013) 2013(2) *New Zealand Law Review* 227.

is the responsibility of the states. The vast majority of property titles are on a scheme known as 'Torrens Title'.⁸ Under Torrens Title, information is stored as to title by a state land registry office and the relevant state guarantees the accuracy of title. As the titling system has been moved online, there was scope to move the conveyancing system from a paper based one to an electronic one. This is called eConveyancing. Unlike other jurisdictions, the approach in Australia was to make both of the land title part of conveyancing and the financial part of conveyancing an electronic solution at the same time.

The states worked together to create a platform for eConveyancing. This was later privatised to create a sole Electronic Lodgment Network Operator (**ELNO**) operating across Australia. This incumbent, PEXA, played a key role in the development of the national eConveyancing model. There are potential entrants wishing to offer eConveyancing services by becoming an ELNO.

Mandatory migration to eConveyancing is occurring in a number of jurisdictions, including Victoria, New South Wales (**NSW**) and Western Australia. From July 2019, ELNOs facilitated the majority of land transactions in NSW (which is the most populous state in Australia).

This raises one of the challenges in respect of interoperability of eConveyancing in Australia. As property law is a state matter, there is no formal federal level coordination of eConveyancing. However, each of the states and territories has agreed to implement the Electronic Conveyancing National Law (ECNL). This was designed to govern the provisioning and operation of electronic conveyancing in Australia. It is implemented by separate legislation in each state and territory. Banking and competition are both matters dealt with at the federal level. Consumer protection has uniform national law for goods and services other than financial services and federal legislation for financial services.

In the context of federation, the NSW Government's policy is to create a regulatory environment that supports competition between ELNOs. The NSW Government has stated publicly that interoperability between ELNOs should be a key feature of its proposed pro-competitive regulatory regime. Interoperability would allow a consumer (for example, a vendor) through a subscriber (for example, a lawyer or conveyancer) connected to one eConveyancing platform to engage in a conveyancing transaction with another consumer (for example, a purchaser through a subscriber connected to a different eConveyancing platform). As a conveyancing transaction can involve many parties, interoperability could potentially enable each party to use a different eConveyancing platform in the same transaction. Without interoperability, subscribers (lawyers and conveyancers and financial institutions) can only act on transactions that are on the same ELNO or would need to subscribe to and be able to use each of the competing ELNOs to be able to handle any property transaction that came to them.

This paper analyses the case by first examining the process used to build an interoperability model. The paper then turns to the models for interoperability and

⁸ Ibid.

the market structure within which these models could operate. The models raised some specific issues unique to eConveyancing which are also discussed. The following section considers process flow and data standards for an interoperable transaction. The next section discusses financial settlement and the challenges provided by the need to coordinate financial institutions and the state revenue offices. The paper then turns to risk and insurance, before drawing conclusions.

The paper is based on the Final Report of the Working Groups.

2 Building an interoperability model

On 4 December 2018, the NSW Government held a forum on interoperability with key stakeholders including state Registrars, ELNOs, major banks, peak industry bodies, the Australian Competition and Consumer Commission (**ACCC**), the NSW Law Society, Conveyancers and the Reserve Bank of Australia (**RBA**). In March 2019, the NSW Government announced the establishment of the Regulatory Working Group (**RWG**) and the Technical and Operations Working Group (**TOWG**) (together the **Working Groups**) on interoperability and appointed Dr Rob Nicholls as Independent Chair of both Working Groups. A law firm, Gilbert + Tobin provided Secretariat services.

The TOWG considered the technical and operational aspects of interoperability, primarily 'how' interoperable ELNOs could function. This group engaged with issues such as how data can pass through an ELNO's workspace to connect with another ELNO, security, the interactions required between ELNOs at each stage in a transaction and the interactions required between ELNOs and other participants to a transaction: financial institutions, the RBA, subscribers, land registry offices and state revenue offices.

The RWG considered the regulatory aspects of interoperability such as the requirements for determining a Lodging ELNO, the necessary consents and authorisations involved, financial settlement and liability in an interoperable system.

The Working Groups had broad based participation (as direct participants or as observers) from stakeholders in NSW, others operating nationally and some from other states. In attendance at the Working Groups were national banks, the three current and likely ELNOs, Revenue NSW, NSW Office of the Registrar General (**ORG**), the NSW Independent Pricing and Regulatory Tribunal (**IPART**), industry insurance providers, the NSW Law Society and both national and state representatives of the conveyancing industry. Participants who attended as observers included the ACCC and the SA Office of the Registrar General.

A number of other interested parties including the RBA had access to an online portal, which posted all the information generated for and by the Working Groups, including agendas, minutes and discussion papers authored by the Independent Chair, the Secretariat and other participants.

There were four rounds of meetings for each of the TOWG and RWG working groups over an eight week period from March to May 2019. The discussion of the Working Groups was free flowing and based around stakeholder questions and views. The

Independent Chair and the Secretariat would pose questions to the Working Groups when required to further facilitate or prompt discussion as well as organise for stakeholders to give presentations when required. All input from participants was made available to all other participants and other parties through the online portal, other than a small number of confidential comments.

After these Working Group meetings, the Independent Chair assisted by the Secretariat produced a draft report based on those meetings. This was circulated via the online portal. Participants had four weeks to provide written comments on the draft report. The TOWG and RWG working groups met on 15 July 2019 to settle the final report.

The NSW Government's purpose in establishing the Working Groups was not to develop the detailed working model for interoperability but to identify the issues which would need to be addressed. The Working Groups did explore potential solutions and examined the feasibility and desirability of interoperability.

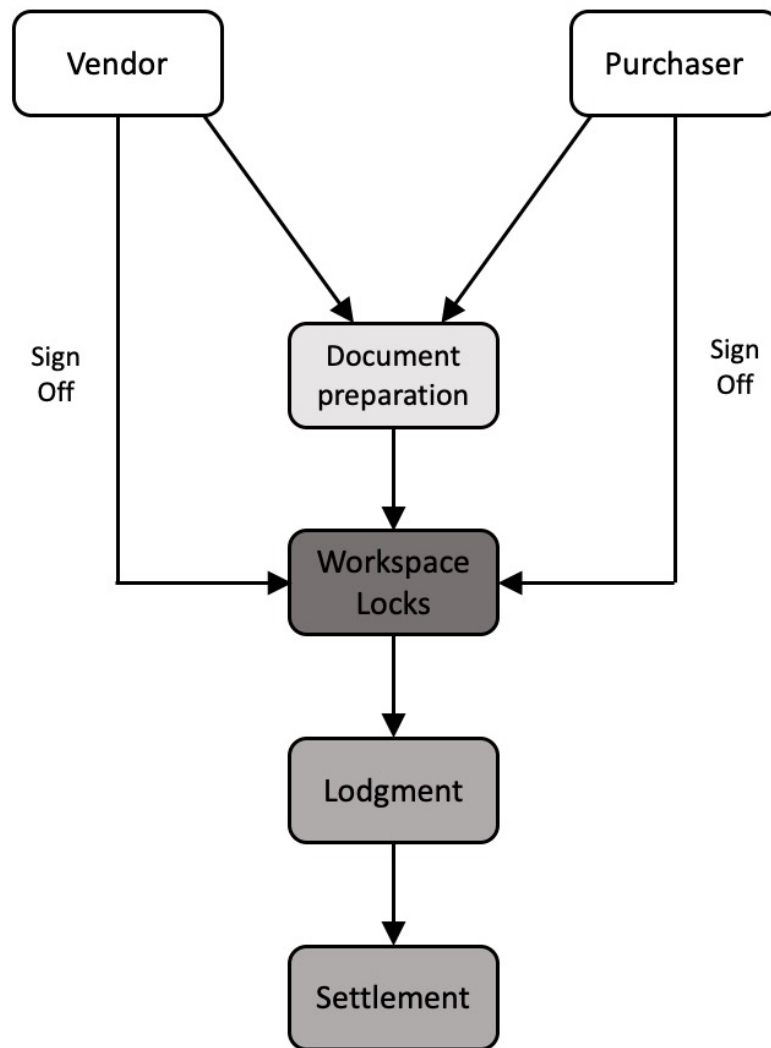
3 Interoperability Models

Competition between ELNOs is nascent. The structure of the market, and the business models new entrants will employ and to which the incumbent will shift in response to competition, are not yet settled. While market structure is a larger issue than platform interconnection, this interconnection influences market structure.

The form of interoperability that is most appropriate in any particular sector depends on the organisational structure or business models of the interconnecting parties. It is important to ensure that platform interconnection does not explicitly or implicitly constrain more innovative business models. That is, interconnection should not restrict changes in market structure in response to the process of competition. If interconnecting businesses have similar technology and business models, interoperability will be easier. The challenge is to ensure that interconnection does not stifle disruption.

To do this, there was agreement reached on the processes of conveyancing in a simple transaction (one buyer, one seller and no chain of dependent transactions). In very simplified terms, this is set out in Figure 1.

Figure 1: Simplified eConveyancing transaction



There were three interoperability models developed by the Working Groups.

The first relied on a single infrastructure based, wholesale ELNO providing a platform to and from which retail ELNOs would exchange information. Interoperability under this model is more like a 'resale' or 'white label' model than interconnection between separate platforms.

The second and third were based on the interconnection of eConveyancing platforms. In the second, titled 'reflective workspaces', each ELNO would have all of the information written to both it and the interconnected platform. Prior to settlement, the platform responsible for lodging the title changes with the Land Registry (the **Lodging ELNO**) would confirm by data exchange that all information. In the third model, titled 'master workspace', the interconnecting ELNO would write information to the 'master' ELNO. The 'master' would need to be the Lodging ELNO and that status would need to be decided before lodgment. In practice, the Working Groups determined that this would need to be several minutes before lodgment.

The fact that there is time to make these decisions indicated one of the important aspects of this platform interconnection – data needs to be synchronised but not in real time. A matter of seconds is acceptable. The importance is that data confirmation processes can take precedence over the need for absolute synchronisation.

3.1 Transactions – reflective workspaces model

In an interconnected transaction, the reflective workspaces model requires that the Lodging ELNO at any given point in time would hold a 'flag' designating that status. If messaging occurs that results in the Lodging ELNO 'losing' that status or the ELNO 'gaining' that status, the 'flag' will be transferred to designate the newly appointed Lodging ELNO. The Lodging ELNO will 'lock' its workspace for settlement based on the information synchronised from the non-Lodging ELNO's workspace. From this point, the Lodging ELNO's workspace becomes the 'authoritative' workspace and 'drives' the lodgment and settlement phases. The Lodging ELNO's workspace would provide updating messages to the non-Lodging ELNO's workspace, but the relationship between them would shift to a 'master-slave' database structure.

The difference between this model and the infrastructure based ELNO is that there is not a dedicated platform to provide single a workspace for a transaction. Subscribers to each ELNO would write into a workspace on their eConveyancing platform whether the transaction is between subscribers of the same ELNO or between subscribers of different ELNOs. Each ELNO also capable of performing all aspects of an eConveyancing transaction, both because it may end up being the Lodging ELNO in a particular interoperable transaction or the transaction is being conducted solely on its eConveyancing platform.

The reflective workspaces interoperability model would require a tightly structured series of messages to keep the databases of each ELNO in the transaction synchronised.

3.2 Transactions – 'Master' workspace model

Like the reflective workspaces model, and unlike the infrastructure based ELNO model, this model involves the establishment of separate workspaces in the interconnected eConveyancing platforms. However, from the point of identification of the Lodging ELNO, the two workspaces operate in a relationship where the Lodging ELNO's workspace is the 'master' database and the non-Lodging ELNO's workspace is a 'slave' database. Essentially, it appears as if the subscriber to the non-Lodging ELNO is 'writing' directly into the Lodging ELNO's workspace.

The Lodging ELNO's workspace holds all the information from both ELNOs required to complete the transaction while the non-Lodging ELNO's database only holds the information necessary to provide its subscribers with the same information about the transaction as they would receive if the transaction was occurring on a single eConveyancing platform. As the workspaces do not need to be perfect copies, this

will mean information that a subscriber of an ELNO should not or does not need to receive need not be passed to it by the other ELNO.

In this model, the location of the master or 'authoritative' workspace depends on which ELNO is the Lodging ELNO, and therefore could change transaction-by-transaction. Each ELNO would still establish its own 'back end' and would use that 'back end' for transactions involving only subscribers to its eConveyancing platform and for transactions involving subscribers to another eConveyancing platform when it is the Lodging ELNO. This means, as with the reflective workspaces model, all new entrants would need the capability to operate as fully functioning ELNOs.

3.3 Assessment of Workspace options

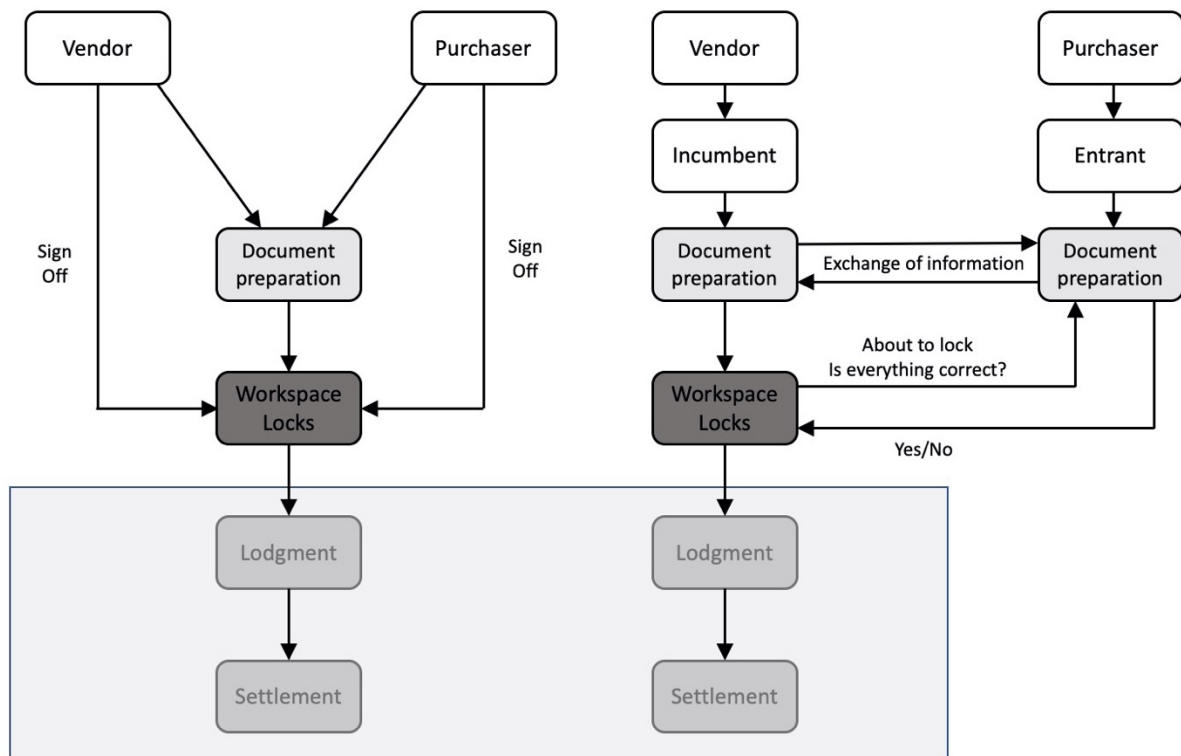
No consensus was reached on which was the preferred workspace model. However, it was recognised that the second and third models created more scope for competition than the infrastructure based ELNO. Working Group participants who were concerned about the duplication of infrastructure and systems required by ELNO competition, including some of the financial institution participants, were attracted to the infrastructure based ELNO for this reason. There was also a view that the time for an infrastructure based ELNO had passed with the entry of at least one other platform operator (Sympli).

The differences in the information which would be shared between the ELNOs under a reflective workspaces model and under an ELNO 'master' database model are small. Subscribers of each ELNO and the two ELNOs themselves are likely to require transparency for most of the information about the transaction written into each ELNO's workspace. Other than the bank account details of customers which participants identified as an exception, most other information would need to be shared between the ELNOs' workspaces.

Precision is required in the data which is shared between ELNOs. As entries on the title documents are legally definitive, electronic copies of conveyancing documents or other relevant information when held in different systems used by participants in that transaction need to be a true replica of each other. Only one ELNO, the Lodging ELNO, will perform the lodging and settlement functions. Its workspace will be the authoritative workspace for those functions and there would be a process to 'lock' that workspace in order for it to proceed to lodgment and financial settlement, which cannot occur until the data between the interoperable workspaces matches. This process means that there is an opportunity for the interoperable workspaces to 'catch up' with each other before the Lodging ELNO workspace is locked. Based on the synchronised content when it locks, the Lodging ELNO workspace then becomes the authoritative workspace.

That is, under interconnection, the process changes from that shown in the left hand side of Figure 2 to that shown in the right hand side of Figure 2.

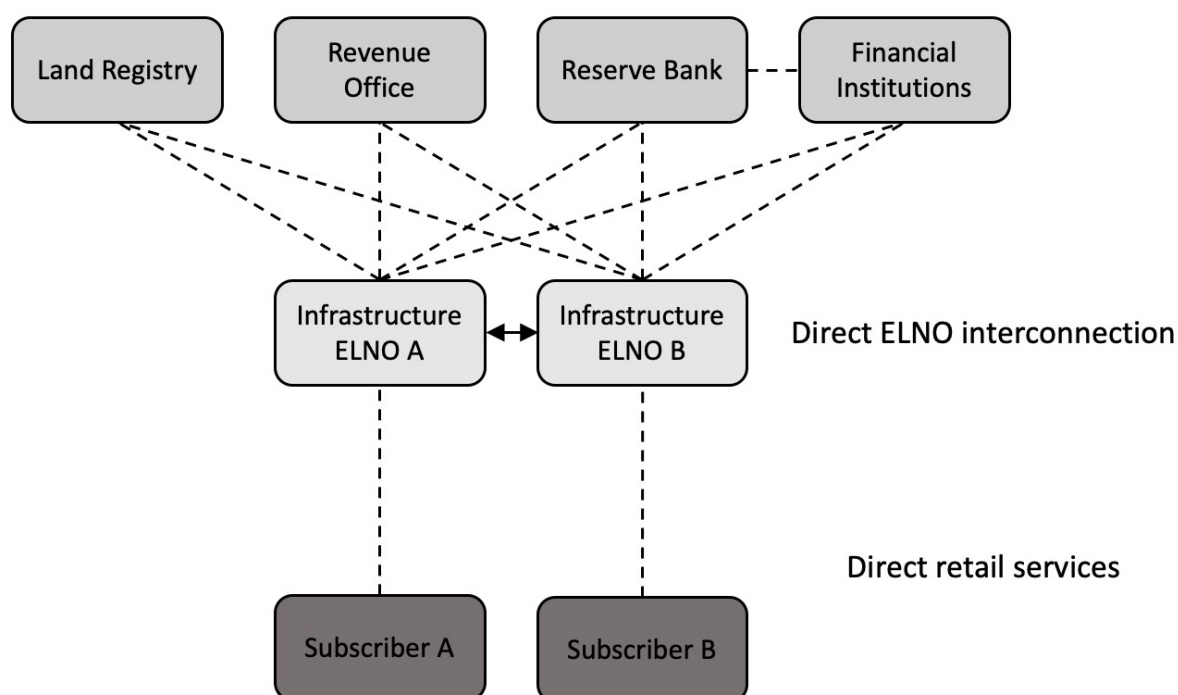
Figure 2: Simplified interconnection



The TOWG concluded that, if the infrastructure based ELNO model is not adopted, the decision as to whether the interoperability model should look more like the second or third model is largely a matter for the detailed technical design and architecting process, rather than a policy issue.

The Working Groups left open the question of which of the above models should be preferred. However, for the purposes of moving forward with the analysis of the interoperability issues, the discussion in the Working Groups was on the assumption that each ELNO would be vertically integrated with its on lodgment and settlement capabilities and therefore, that interoperability would be along the lines of the second or third model. That is, the assumption was interconnection as set out in Figure 3.

Figure 3: Assumed interconnection model



3.4 Why have a Lodging ELNO?

Having only one of the interoperable ELNOs responsible for the lodgment and settlement steps in a transaction has three benefits.

The first is associated with lower titling risks. A Land Registry Office would receive the complete set of information needed for registering the transaction in a single message from one ELNO.

The second is that it is more consistent with current financial settlement process. As discussed below, settlement is completed through the RBA's Reserve Bank Information and Transfer System (**RITS**) platform. RITS operates on a net settlement basis between the financial institutions which hold the source accounts for the funds required in a property transaction and across multiple property transactions which settle within the relevant processing window within RITS. This net settlement process requires all of the financial transfers that occur in a property transaction (both withdrawals and deposits so the netting can be calculated) to be contained within a single 'batch' lodged by a batch administrator (which could be an ELNO or another party providing batching services to an ELNO).

The third benefit is that it is less operationally complex. The Lodging ELNO's workspace becomes the single, 'authoritative' workspace for and during the lodgment and settlement process. The Lodging ELNO has all of the information necessary to undertake the lodgment and settlement without the need for further steps to be undertaken or information to be provided by other ELNOs.

In turn, this leads to the question as to which ELNO should be the Lodging ELNO. There was a consensus view that designation of the Lodging ELNO should be based

on clear, simple and objectively criteria. This would support messaging between the platforms in a transaction to establish which of them was the Lodging ELNO.

Although a number of potential solutions were considered, the consensus was that the Lodging ELNO should be the ELNO of the 'responsible subscriber'. The responsible subscriber in a financed transaction is the incoming mortgagee and if there is no finance, is the purchaser.

Participants considered that the Lodging ELNO role would have a limited impact on the viability of an ELNO, including a new entrant ELNO. The fees an ELNO earns from performing the role of Lodging ELNO are anticipated to be a relatively small proportion of the ELNO's overall revenue. The Lodging ELNO's fees are also likely to be regulated, at least in NSW as a result of any of IPART's recommendations on ELNO fees. If, as IPART is considering, a cost-based approach to regulating ELNO fees is adopted, an ELNO should, broadly speaking, be indifferent as to whether it is the Lodging ELNO or not in a transaction.

3.5 Changes in the Lodging ELNO

It is possible that the Lodging ELNO role will change over the course of a transaction until the respective workspaces are 'locked' and the process of lodgment and settlement begins.

The consensus was that changing the Lodging ELNO, even several times, should not cause material difficulties or delay. It should be feasible to design messaging between the ELNOs (including to another ELNO which is added to the transaction because it is the ELNO of the incoming mortgagee) to ensure that the workspace of the new the Lodging ELNO is populated with the information and documentation required to assume the role of Lodging ELNO. This should be possible even shortly preceding the scheduled settlement time without having to shift that settlement time.

There was consensus that the only requirement on an ELNO being a Lodging ELNO was that it should have the capability to execute the lodgment and settlement steps. This essentially means that an ELNO must have in place the connectivity and interfaces to deal with the external parties required for lodgment and settlement.

Each ELNO has connections in place with the State Revenue Offices and the Land Registry Offices in order to be approved as an ELNO. Each ELNO also has in place a payments process, such as connections to the RBA's RITS platform, to support transactions conducted solely on its own platform.

If an ELNO is to be the Lodging ELNO for a transaction, it also needs to be able to issue instructions on the financial institutions which hold the accounts which are the sources of the funds to be transferred. This would include financial institutions holding accounts from which the subscriber of the non-Lodging ELNO is giving instructions for funds to be sourced.

However, each ELNO will not necessarily have communications links and interfaces in place with the financial institutions involved in a particular transaction.

The Lodging ELNO would assume responsibility for executing lodgment and financial settlement as between the interoperable ELNOs from the scheduled time for settlement, provided that all of the interoperable ELNOs have identified within their workspaces and to each other that the transaction is 'ready to settle'. A subscriber of a non-Lodging ELNO could, halt a transaction by 'unsigned' a document at any time up to the scheduled settlement time (when the process commences). If no unsigned has occurred, the Lodging ELNO's workspace would lock, and the Lodging ELNO would commence the lodgment and settlement process.

There was a consensus view that the process of 'locking workspaces' between interoperable eConveyancing platforms is needed to ensure that there are no discrepancies between those locked workspaces due to delay or failure to communicate 'locking' status.

As the Lodging ELNO is executing instructions for the subscribers of a non-Lodging ELNO, such as to operate their accounts or their clients' accounts, the Lodging ELNO needs to ensure that the appropriate authorisations are in place.

While the authorisations and information which the Lodging ELNO needs is the same as it needs when a transaction is conducted solely on its platform, the ELNO has the opportunity through its direct contractual relationships with its subscribers to ensure the necessary arrangements are in place. In the case of an interoperable transaction, the Lodging ELNO has no direct contractual relationship with the subscribers of a non-Lodging ELNOs and needs to rely on their affirmations that the necessary authorisations and consents are in place.

4 Process flows and data standards

4.1 Process flows

The purpose of mapping the process flow was to show the points or steps at which ELNOs would need to share information in order to carry out an interoperable transaction. Having mapped the interoperability process, the information to be exchanged over the course of that process can be defined into a high level data standard. Once the data standard is defined, it is then possible to progress with building the applications programming interface (API) for interoperability.

The TOWG focused on mapping the process flow for a four-party transaction. That is, involving a purchaser, vendor, outgoing mortgagee and incoming mortgagee. As this is amongst the most common transactions, it was expected to provide a good base case scenario.

There was consensus around the high level process flow required for a four party transaction. The process flow was initially prepared by a new entrant and feedback was provided by the TOWG, including from the other current and potential ELNOs, which the entrant incorporated in the final model adopted by the TOWG.

A four-party transaction is only one of many scenarios that can occur in a property sale and purchase transaction. There are a large range of other types of dealings which an ELNO needs to support on its own platform and in interoperable

environment. Further work needs to be done to develop use cases to identify the different scenarios that could occur in a property transaction to determine whether interoperability could operate in these scenarios. However, having defined the process flow and the data standard around the four party sale/purchase base case, the TOWG considered that it would be a relatively straightforward exercise, although still a significant undertaking, to methodically work through the range of other case scenarios to work up the complete API needed for interoperability.

4.2 Data standards

In any technology-based interoperable environment, data standards are fundamental to the success of interoperability between two or more systems. The data standard provides a 'common language' for the two systems to 'talk to each other' and define the information which each has responsibility to source and share with the other.

In a competitive environment, codification of processes through standards applied across competitors also needs to be balanced with retaining scope for innovation by current and future operators. Standards making can erect barriers to entry by new entrants which have a different way of operating and which would disrupt the position of an incumbent of the current group of competitors.

Some of the key advantages of eConveyancing are the process and information improvements for subscribers and their clients, and the data standards for interoperability need to reflect those benefits. The consensus was that the data standards should be designed around two 'touchstones' for subscribers and users:

- subscribers involved in a transaction across interoperable eConveyancing platforms should have no less transparency than is currently available to subscribers when the transaction is on the same eConveyancing platform; and
- while information from a subscriber to one ELNO may need to be shared with another ELNO for the purposes of a transaction occurring across those platforms, the same restrictions on information of one subscriber being viewed by other subscribers which when they are on one eConveyancing platform should apply when they are on different platforms.

Data standards currently perform a central role in eConveyancing, particularly to ensure national consistency. The current data standards that apply between an ELNO and Land Registries are set out in the National Electronic Conveyancing Data Standards (**NECDS**). However, ELNOs connect not only to the Land Registries but also to other parties including, to State Revenue Offices and financial institutions. The incumbent has developed APIs that apply between it and each relevant State Revenue Offices and between it and the financial institutions, but these are private and do not form part of the NECDS.

The scope of the TOWG's work was confined to the data standards that would apply between the interoperable ELNOs. The data exchange requirements and interfaces required between other participants in eConveyancing and the ELNOs are significant

issues which need to be addressed in an environment of more than one ELNO (that is, whether interoperability exists or not).

However, as a gauge to assessing the size of the task involved in developing a data standard for interoperability and building an API, the NECDS was used as a baseline for comparison. In other words, how much of the data standard required to make interoperability work is already defined in the NECDS and can be incorporated, with or without some amendment, into the interoperability standard. This was done by identifying, on a line by line basis, in the proposed interoperability data standard whether the same data input was required in the NECDS.

This analysis showed that more than 75% of the data inputs in an interoperability standard developed by the TOWG are already defined in the NECDS. This is not surprising. First, the same core set of information has to be gathered and verified for a transaction to be lodged and registered and settled, whether sourced from subscribers solely on one eConveyancing platform or subscribers across multiple interoperable eConveyancing platforms. Second, once the workspaces are locked, an interoperable transaction does not differ from the current environment as there would still be only one ELNO, the Lodging ELNO, carrying out lodgment and financial settlement.

In an interoperable environment, there will be some changes or additional data exchanges required which would be new to the NECDS. Although only one ELNO, the Lodging ELNO would conduct lodgment and financial settlement, there would still need to be the ability for all subscribers, including subscribers to a non-lodging ELNO to obtain Lodgment Support Services (**LSS**). The Land Registry Office in each jurisdiction provide services to an ELNO to support the lodgment of electronic registry instruments. The LSS are a subset of these services and are set out in the NECDS.

The LSS are as follows:

- **Registry Information Supply (RIS)**: this is the service which involves the provision Registry Information to pre-populate an eConveyancing platform workspace;
- **Lodgment Verification (LV)**: these are the services (call and response) by which the LRS notifies the eConveyancing platform workspace if a lodgment case is ready for lodgment; and
- **Title Activity Check (TAC)**: this is the service by which LRS notifies the eConveyancing platform workspace if there has been any activity on the relevant title.

This may require a change in the APIs with the Land Registry Office to allow a non-lodging ELNO to lodge requests with the Land Registry Office to carry out all necessary LSS, before a workspace is locked using same bundle ID as the Lodging ELNO.

5 Financial Settlement in an Interoperability Environment

5.1 Introduction

This section discusses how financial settlement would be managed between interoperable ELNOs when a transaction occurs across interconnected eConveyancing platforms.

The Chapter proceeds on the basis of the following two rules for designation of the Lodging ELNO:

- 1 the ELNO of the responsible subscriber would be the Lodging ELNO,
- 2 but an ELNO can only be the Lodging ELNO if it can settle with all of the financial institutions involved in the transaction.

5.2 The Importance of DvP

The Delivery v. Payment (**DvP**) principle is critical to financial settlement, and interoperability rules need to be built around that principle.

DvP involves the twinned principles of 'irrevocable payment/commit to payment' and 'irrevocable transfer of/authority to transfer legal ownership'. In a conveyancing transaction, the 'record of ownership' is the Land Registry, the 'irrevocable payment' is made between the financial institutions and the eConveyancing platform is an intermediary platform which 'knits' the two together to establish the DvP principle.

DvP is not a singular concept, and there are a number of different models or options for achieving DvP, both here in Australia and overseas. The RBA has identified the following payment models⁹:

- RTGS: real time gross settlement of payments, which involves settlement of transfer instructions on an individual basis with finality;
- DvP Model 1: transfer instructions for both securities and funds are settled with finality on a trade by trade basis;
- DvP Model 2: transfer instructions for securities are settled with finality on a per transaction basis with funds transaction instructions settling on a net basis with finality only at the end of the funds processing cycle; and
- DvP Model 3: transfer instructions for both securities and funds are settled on a net basis with finality at the end of the processing cycle.

Figure 4 from the RBA shows the use of the different payment models (Real Time Gross Settlement (**RTGS**) and DvP models) across payment types in Australia and overseas:¹⁰

⁹ Review of Settlement Practices for Australian Equities, May 2008, at para. 5.1.

¹⁰ Reserve Bank of Australia, Review of settlement practices for Australian Equities, 2008, at page 7.

Figure 4: Global comparison of payment models to achieve DvP principle

Country	High value payments	Fixed income	Equities
Australia	RTGS	DvP Model 1	DvP Model 3
Canada	RTGS equivalent	DvP Model 2	DvP Model 2
France	RTGS	DvP Model 1	DvP Model 1
Germany	RTGS	DvP Model 1	DvP Model 1
Japan	RTGS	DvP Model 1	DvP Model 3
Switzerland	RTGS	DvP Model 1	DvP Model 1
UK	RTGS	DvP Model 1	DvP Model 1
US	RTGS+	DvP Model 1	DvP Model 2

The current approach to resolving DvP in eConveyancing is not mandated – it represents how the incumbent, in extensive consultations with the RBA, the banks and other stakeholders, decided DvP could be best addressed in the eConveyancing environment (particularly taking account of the fact that an eConveyancing platform is an intermediary in respect of titling changes).

The DvP principle is currently satisfied by the incumbent as follows:

- once the workspace is “ready to settle” and is locked down (that is, the settlement process has commenced), the eConveyancing platform sends a Lodgment Verification message to the Land Registry;
- when the eConveyancing platform receives a positive LVS message from the Land Registry, the ELNO proceeds to reserve the funds for the transaction within RITS (as a batch administrator). This creates the “irrevocable commitment to transfer the funds”;
- once RITS notifies the eConveyancing platform that the funds have been reserved, the eConveyancing platform proceeds to lodge the transfer with the Land Registry;
- the eConveyancing platform receives a positive LCS message from the Land Registry. This is not a confirmation of registration (that is, that title has been transferred) but only of lodgment. This creates the “irrevocable commitment to transfer legal ownership”. The ELNO has no control over the timing of registration. It is currently likely, given processes within Land Registries, that registration occurs after financial settlement (not unlike in the paper-based world). However, with improved processes, including more automation, in Land Registries, it is also possible that registration could occur (slightly) before financial settlement;

- the eConveyancing platform proceeds to notify RITS (again as batch administrator) that the reserved funds should be disbursed to the vendor, outgoing mortgagee and other parties as per the settlement instructions; and
- as noted in the paper on RITS (as amended), the settlement process in RITS occurs on a net basis between the financial institutions (that is, across multiple transactions).

Under the current model, there are circumstances where financial settlement can still proceed when an earlier step is not completed/available: for example, the incumbent has capability to do financial settlement even if the LRS systems are down.¹¹ This is enabled legally by section 43A of the Real Property Act which, in effect, protects the parties acquiring an interest in property where financial settlement has occurred against an interest registered in the 'gap' between financial settlement and registration.

There was consensus that the financial settlement requirements for interoperability should not prescribe the interoperable ELNOs use a common DvP model.

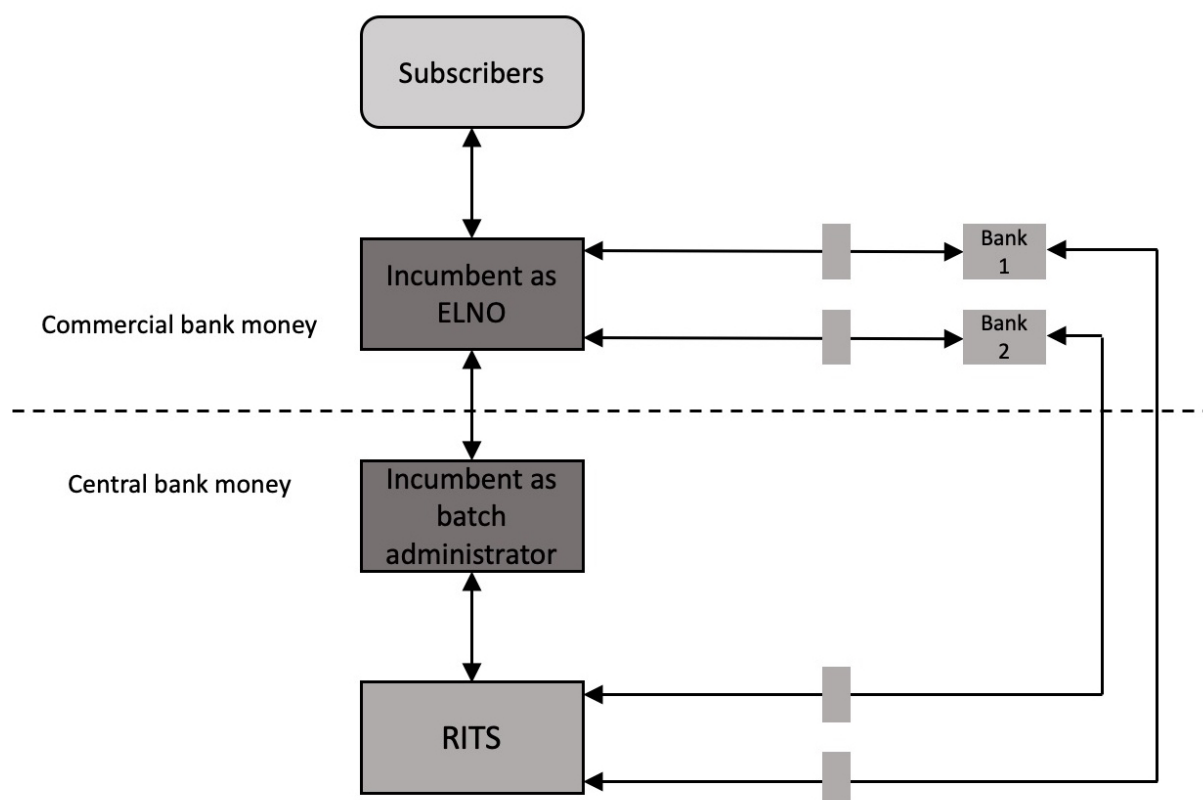
5.3 Dual functional layers of financial settlement

Currently, financial settlement occurs at two layers (as set out in Figure 5 below):

- 'commercial bank money': the crediting and debiting of accounts in the relevant financial institutions of the purchaser, vendor, the outgoing mortgagee, the oncoming mortgagee and the other parties receiving funds in accordance with the settlement sheet. The information flows for these transactions currently occur between the ELNO and the banks through direct interfaces or payment gateways which have been built by the incumbent and the individual banks; and
- 'central bank money': the RBA operates an interbank settlement platform, called the RITS system. RITS deals with settlements between financial institutions economy-wide, including property settlement. RITS operates on a consistent nationwide basis. The bulk of these transactions are settled on a RTGS basis. RTGS ensures that transactions between members, or clients of different members, will only proceed to settlement where the Paying member has sufficient credit funds in its Exchange Settlement Account (**ESA**) at the RBA. Banks are either members of RITS directly (ESA holders) or access RITS through an ESA holder.

¹¹ <https://community.pexa.com.au/t5/Help-Centre/Proceeding-with-Settlement-when-a-land-registry-is-unavailable/ba-p/6520>.

Figure 5: Dual layers of the current financial settlement model



The Working Groups addressed how interoperability would operate at each financial settlement level. The consensus was that any additional complexity which interoperability introduces into financial settlement should be minimised for subscribers and users.

5.4 'Central bank money' level

The RITS Regulations provide for classes or types of members other than ESA holders. One of those classes is a Batch Administrator. A Batch Administrator does not have to be an ESA holder (that is, a bank). The incumbent is specified as a Batch Administrator in respect of 'property batches'.¹² The parent company of one of the entrants is also a Batch Administrator in respect of 'CHESS Batch', associated with stock exchange settlement.

The RBA has power to approve other Batch Administrators.¹³ A new ELNO could apply to be appointed as a Batch Administrator. Alternatively, an ELNO could utilise the services of a current Batch Administrator to access RITS and provide batches on its behalf.

A Batch Administrator has authority to make entries in the exchange accounts of ESA holders (that is, the banks) which are its Batch Participants.¹⁴ In other words,

¹² Reserve Bank of Australia, RITS Regulations, schedule 3.

¹³ Reserve Bank of Australia, RITS Regulations, clause 6.1.

¹⁴ Reserve Bank of Australia, RITS Regulations, clause 6.3.

the RBA does not 'look behind' the transactions notified by the Batch Administrator: it is the responsibility of the Batch Administrator (and the banks) to ensure that the transactions notified by the Batch Administrator (in the case of property transactions, the ELNO) are properly authorised. The RBA is entitled to share information with a Batch Administrator concerning the settlement of a batch or about an Approved Batch Participant reasonably required for operational purposes of RITS or for the RBA to perform its functions.¹⁵

An ESA holder becomes an Approved Batch Participant for a particular Batch Administrator by, in effect, signing on with that Batch Administrator and notifying the RBA, which records the association in RITS.¹⁶ An ESA holder is not restricted to being an Approved Batch Participant to more than one Batch Administrator.

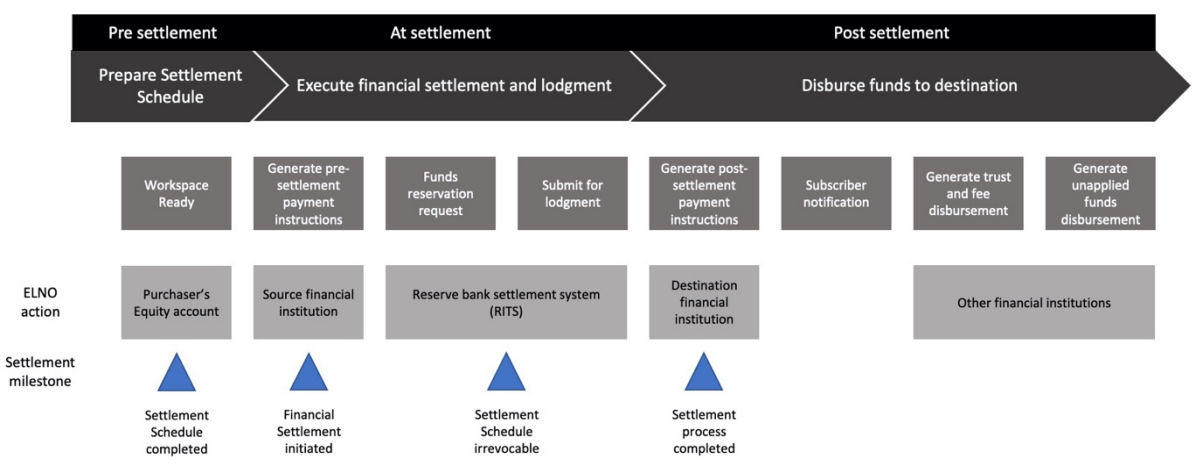
Only a limited amount of new infrastructure (connectivity and interfaces) would be needed to implement interoperability at the 'central bank money' level.

5.5 'Commercial bank money' level

Settlement at the 'commercial bank money' level functions through direct bilateral relationships between the ELNO and the financial institutions holding the source accounts. Through bilaterally agreed APIs and over point to point communications or connectivity links, the incumbent and a financial institution exchange messaging in the course of financial settlement, including the incumbent checking that the source accounts hold the necessary funds before it proceeds to place reservations in RITS.

Figure 6 depicts the current messaging between a financial institution and an ELNO at the 'commercial bank money' level, and the interactions with the 'central bank money' layer:

Figure 6: ELNO-financial institution interactions in financial settlement



If the same bilateral links model is adopted in an interoperability environment, each new ELNO will be required to replicate bilateral links with financial institutions in

¹⁵ Reserve Bank of Australia, RITS Regulations, clause 6.4.

¹⁶ Reserve Bank of Australia, RITS Regulations, clause 6.2(b).

order to be able to financially settle property transactions at the 'commercial bank money' level.

The financial institution participants in the Working Groups expressed concerns about the costs and time involved in replicating with each new ELNO the current arrangements between the financial institutions and the incumbent at the 'commercial bank money' level. They had invested substantial amounts in participating in the national eConveyancing scheme, and the common expectation had not been that there would be more than one ELNO.

The financial institution participants also emphasised that the scope of the changes needed to accommodate a multi-ELNO market is made more complex because, on the bank side of the interface, more than one system may be involved in managing the different elements of the transaction (for example, drawing funds from a customer account and settling up or discharging loans) and between different branded subsidiaries of a bank.

It is important to note that these issues arise from the fact of there being more than one ELNO in the market, and not from interoperability *per se*. Even if the ELNOs only operated on a standalone basis, these issues would still arise. However, in the setting of interoperability, these issues may mean that, at least for an interim period after a new ELNO enters the market, a new ELNO may not be able to function as the Lodging ELNO where the business rules would otherwise designate it as fulfilling that role (for example, because it is the eConveyancing platform to which the responsible subscriber is connected).

The challenges of adapting the 'commercial bank money' layer to a competitive ELNO market should be simpler if more messaging between the financial institutions and each new ELNO follows the same or substantially the same data format, structure and content of messaging.

There was general agreement that development of a data standard between ELNOs and financial institutions would be useful: in effect, a national data standard between the ELNOs and financial institutions which mirrored the role of the NECDS between ELNOs and the Land Registry Office.

However, some financial institution participants, while agreeing with this approach, cautioned that due to differences in the systems of the financial institutions, commonality may be difficult to achieve. Currently, there already are material differences in the APIs between the incumbent and individual financial institutions.

The Working Groups also considered whether there were alternatives to duplicating the bilateral links between each ELNO and each financial institution. There would be cost and effort involved in setting up such a link. As each new ELNO enters the market, the whole exercise has to be repeated. These costs could be barriers to entry and reinforce the incumbent's (and subsequent entrant's) advantages.

5.6 Authorisations and Consents

Financial institution participants stressed the importance to eConveyancing of being able to rely on an instruction from an ELNO to draw on source accounts as being properly authorised. The financial institutions rely on the ELNOs verifying that the settlement statement has been authorised by each subscriber in accordance with the authorities which have been pre-registered with the ELNO. Electronic conveyancing would grind to a halt if the financial institutions had to 'look behind' instructions received from an ELNO to verify that the instruction has been authorised by the account holder.

5.7 Alternative payment systems

The above discussion is based on the assumption that financial settlement would continue to occur in an interoperability environment using RITS. The infrastructure based new entrant proposes to use RITS. However, innovation in payment systems is increasing. Alternatives to the use of RITS may emerge, including payments systems which may use RITS 'in the back end' but present a different payment processing model to users.

There was a consensus among participants of the Working Groups that interoperability rules should not preclude innovation by ELNOs in the payment systems they use for financial settlement. However, it was also agreed that it was too early to identify how any new payment systems could be used in eConveyancing, how they would satisfy DvP, and what changes may need to be made in the financial settlement process, including when used in an interoperability environment.

6 Risk in an interconnected environment

There are risks that are relevant to interoperability between ELNOs and potential for treatment of those risks. A risk assessment was run using the techniques set out in AS/NZS ISO 31000: 2009 Risk management – Principles and guidelines published by Standards Australia. The Independent Chair also commissioned an independent report on the cybersecurity risks of interoperability.

Conducting a conveyancing transaction on an electronic platform (as opposed to a paper one) can reduce risks because:

- eConveyancing requires customer identification checks by subscribers;
- eConveyancing provides rules about how these identification checks must be carried out and audits subscriber compliance with these rules;
- platforms can encode certain business rules into eConveyancing which ensure that the steps required for a transaction are completed, fields can be populated directly from external sources such as the land registry or entries need to conform to fixed parameters for the transaction to move to the next stage;

- parties to a transaction can cross check data entered by the other parties in real time;
- certain processes and diligence checks can be undertaken automatically and carried out right up until the last minute before settlement time; and
- all payment processes flow through the RBA's payments platform, providing robust referencing to trace multiple payments against a net settled payment.

6.1 Risk reduction

The risk reduction benefit of eConveyancing should apply whether the transaction is being conducted on one eConveyancing platform or across two or more interconnected eConveyancing platforms. There could, of course, be risks that arise from interoperability itself, which are reviewed below.

The problems arising from the process with inflexibility or rigidity of eConveyancing are likely to arise whether the transaction occurs on one eConveyancing platform or across two or more interoperable eConveyancing platforms. However, as discussed below, the need to maintain consistency between interoperable eConveyancing platforms may add to the time, effort and complexity in managing change to address some of these problems: for example, if capability was introduced to allow settlement to occur where there is a small variation in the settlement figures, that capability would need to be built and implemented consistently across interoperable ELNOs.

Insurance cover taken out by ELNOs has the potential to address some of the risks of eConveyancing and interoperability. Generally, insurance covers risks including fraud and criminality, breach of professional or fiduciary duties, negligence or error regarding information, failure to perform, errors in performance and data or privacy breaches. The Regulatory Working Group was provided with high level advice on a range of models for obtaining insurance in an interoperability environment by the NSW state government insurance agency, icare.

6.2 Other risks

Solicitors and conveyancers pointed out that risk needs to be considered in a larger frame. Those at the frontline are tasked with ensuring clients are comfortable with the process. This is already a challenge in the current transition from paper based to electronic conveyancing and will be amplified in an interoperating environment. There are also issues in respect of trust accounting. Put simply, if a solicitor breaches trust accounting rules, they may lose their ability to practice. Clients place significant proportions of their wealth in the trust accounts of their solicitors or the source accounts of their conveyancers, and the property law professionals need to be able to manage these complexities in a manner that means their clients have unwavering confidence in the systems.

This points to the need to ensure that practitioners and the public are educated about interoperability and eConveyancing in general and that they can have confidence that if something does go wrong, they will not be at risk of losing their

property or the proceeds or sale and any necessary restitution will be quick. Regulation of financial settlement with regards to trust accounting rules would give practitioners and customers confidence in the system.

However, the risks associated with interconnection are manageable. Many businesses have critical infrastructure between their main site and their disaster recovery site(s). These use interconnection links which are likely to be similar to those between ELNOs. The issues of interoperability are not any sort of materially increased technical risk. Rather, how to allocate liability in a way that provides certainty for subscribers. As such the issues are more a legal issue than a technical problem.

6.3 Change management

One issue of complexity that arises in all major ICT projects is the risk that arises from change management. There is potential for any changes in the systems of any ELNO or any change determined by a Land Registry Office or a Revenue Office in a state or territory will not be implemented in the interconnected platforms appropriately or efficiently.

One aspect of change management by an ELNO is that the messages associated with interoperability in the data standard are the minimum set required to permit that interoperability. There is no value to ELNOs or their subscribers in exchanging any more data or having more complex messages. The data delivered is one-way, not real-time and is tolerant of latency.

The interoperability models discussed in the Working Groups other than the infrastructure based ELNO both require each ELNO to build and operate its own back-end and the Lodging ELNO role means that an ELNO performing that role operates largely autonomously from the non-Lodging ELNOs in the settlement and lodging phases. This means that ELNOs should be able to make and implement changes in their own back-ends without disturbing the API with other ELNOs. It is not a case that these eConveyancing platforms are deeply intertwined so that changes in one eConveyancing platform ripple out to the other eConveyancing platforms.

There will be changes by the ELNOs, but most of these will be in both their own internal business rules and in their interfaces to subscribers. These changes are likely to be seen as sources of competitive advantage and, consequently, not shared with other ELNOs. The other ELNOs may seek to match or exceed these changes but this is merely competition. These changes will not require changes in the data standard for interoperability.

There is also the risk that one of the Land Registry Office or Revenue Offices in a State or Territory changes its API as a result of legislative change in the relevant jurisdiction. In this case, even in the absence of interoperability, each ELNO with connectivity to that jurisdiction will need to change its interface to the external party to be able to continue to operate as an eConveyancing platform for transactions conducted solely on its own platform. There is no increase in complexity of change

management that flows from interoperability because the complexity and change management challenges are the same as in the case of multiple ELNOs that do not interoperate.

7 Conclusions

As set out above, there is currently one incumbent ELNO in NSW and a second infrastructure-based entrant ELNO. In the absence of interconnection, subscribers will be forced to choose the ELNO that they use on a settlement by settlement basis. This approach has a tendency to favour the incumbent. The economic reason for this favouring is a network effect, which is quite common in the delivery of platform based services. These tendencies are experienced in everyday services which have "winner takes all" or "winner takes most" outcomes, which are found in other platforms.¹⁷

eConveyancing is a technology based service. Technology based industries are characterised by innovation. This innovation leads to dynamic efficiency and associated productivity gains. Over the last decade parts of the supply chain in the processes associated with electronic conveyancing have moved from paper to digital. The move to digital means that processes, such as payment mechanisms, also demonstrate this dynamic efficiency. The effect of this technological change is a level of dynamism and innovation which would have been surprising, even a few years ago.

The primary driver for interoperability is to promote competition because competition leads to better outcomes for consumers. Consumers benefit when businesses compete to deliver new and better products and services at lower prices. Competition drives businesses to operate efficiently, innovate and invest in new technologies. This improves productivity growth and makes Australian businesses internationally competitive.

Some might be concerned with competition in the eConveyancing market because the price paid by end-users for eConveyancing services is small compared with the value of the transaction. It is usually less than \$US150. The eConveyancing market also has some other features not shared in most other markets, in particular competition between ELNOs will not expand demand as demand is determined by the size of the property market from time to time. This means ELNOs will, in effect, be fighting 'to divide the cake' between them, rather than to expand it. These concerns might raise the question "what's the point of competition?".

¹⁷ Franklin Allen and Douglas Gale, 'Competition and Financial Stability' (2004) 36(3) *Journal of Money, Credit and Banking* 453; Jason Furman et al, *Unlocking Digital Competition* (2019); Michael Kades, *A Consistent If Not Unified Vision: A Summary of the Stigler, UK Competition and EC Competition Report* (2019); Nicolas Petit, *Technology Giants, the Moligopoly Hypothesis and Holistic Competition: A Primer* (No SSRN 2856502, 2016); Carl Shapiro, 'Antitrust in a Time of Populism' [2018] *International Journal of Industrial Organization*; Ania Thiemann and Pedro Gonzaga, *Big Data: Bringing Competition Policy to the Digital Era. A Report for the OECD* (2016); David S Evans and Richard Schmalensee, 'Debunking the "Network Effects" Bogeyman' (2017) 40(4) *Regulation* 35; Rob Frieden, 'Two-Sided Internet Markets and the Need to Assess Both Upstream and Downstream Impacts Lead Article' (2019) 68(3) *American University Law Review* 713.

The answer is the benefits that flow to businesses in the whole of the process when there are competitive services. This point was drawn out by the ACCC in its letter to the IGA Review of March 2019.¹⁸ The ACCC noted:

We would caution against an assumption that the cost advantage to consumers must necessarily be small from competition ... The benefits of competition need to be assessed on the basis of a forward-looking assessment and consider the potential future changes in prices and benefits to innovation from competition.

There may be difficulty in precisely identifying and quantifying the benefits of competition, but those benefits nonetheless exist, particularly in a technology-based industry where experience shows that the opportunities for innovation and the unpredictability of where innovation will come from drive significant benefits for consumers.

7.1 Interconnection models

When the Working Groups started the discussions on interoperability discussions there was an assumption that interoperability could be achieved in one of two ways: first was the concept of a hub-and-spoke connection, and the second was through direct interconnection between platforms. The attraction of the hub-and-spoke approach is that the hub would be scalable to multiple ELNOs. The hub is built once, and more spokes can be added as new ELNOs enter the market. However, the hub itself might be a constraint on innovation.

The attraction of direct interconnection is that it has strong analogies to other network industries and the information exchanged would be the minimum amount required to enable lodgment to occur. The disadvantage of this approach is the lack of scalability. There is a further issue associated with scalability of the interoperability models and that is the cost of duplicated connectivity with both the retail banks and the RBA. There is no obligation for retail banks to interconnect with ELNOs. Any such interconnection is done on a commercial basis. However, there is no need for regulatory intervention that would impose an obligation on the banks to connect to entrant ELNOs. On the other hand, there are benefits that flow from competition to the banks in agreeing to interconnection on commercial terms

The reality is that the relevant stakeholders involved in the Working Groups (being the actual and potential ELNOs) have not moved down the hub-and-spoke path. There are some good business reasons for this. In the case of the incumbent, if it were to provide the hub, then it may be subject to regulatory separation as a wholesale and retail provider in a sector with oligopoly characteristics. In the case of the infrastructure based entrant, the time to implement a hub may delay entry into the market for too long.

An important issue to consider with duplicated infrastructure is the cost imposed on other stakeholders, including the banks. In the regulation of networked industries,

¹⁸ Available at <https://www.accc.gov.au/about-us/consultations-submissions/accc-submissions#electronic-conveyancing>, accessed 10 June 2020.

there is often a legislative requirement to consider the “economically efficient use of and investment in, infrastructure”. For example, the object of Part IIIA of the *Competition and Consumer Act 2010* (Cth) concerning access to services sets this out in s 44AA, to “promote the economically efficient operation of, use of and investment in the infrastructure by which services are provided, thereby promoting effective competition in upstream and downstream markets”.

One way of avoiding infrastructure duplication is to separate messages and infrastructure. A practical example is having four different email accounts from different providers but only one broadband connection. However, in some cases, duplication is an economically efficient investment in infrastructure. When markets resolve issues by duplication, as opposed to regulatory intervention, these decisions are generally economically efficient.

To some extent, the model of a pure wholesale infrastructure ELNO looks attractive as an efficient outcome. A similar approach has been taken by consecutive governments in the supply of wholesale broadband services by the Australian state owned enterprise called “nbn”. Retail service providers of fixed broadband services have similar characteristics to virtual operators and are resellers. However, in the ELNO sector, there are two vertically integrated ELNOs already operating and the nbn has a range of issues and complexities which mean that it may not be an ideal model for interoperability between ELNOs.

7.2 Wholesale supply

One way in which duplication of infrastructure can be minimised and hence become more efficient is by reuse. This is the economically efficient use of infrastructure. Some of the existing infrastructure which connect ASX Limited to the retail banks is likely to form part of the connection between the incumbent and retail banks. To the extent that this is the case, the reuse of connections will be another example of separating messaging from infrastructure. In this context, ASX Limited will seek further benefits from its investment in this infrastructure.

The entrant has also outlined this potential approach that would lead to the entry of retail ELNOs. Essentially, it anticipates that its parent, ASX Limited, will provide an access solution that manages the financial settlement aspects of transactions and allows the retail (or virtual) ELNO to provide all other services. In telecommunications, electricity and other networked industries, the ability for a retailer to acquire a “white label” wholesale service is common. In this case, there is further potential for a variety of entry.

The potential ASX offering assumes that the virtual ELNO will arrange its own interconnection with land registry services and revenue offices in the states and territories in which it operates. However, it would also be feasible for either the incumbent or an infrastructure based entrant to offer a wholesale service which includes these connections. This creates the potential for a business such as a practice management provider to enter the sector by reselling ELNO services, but to increase its infrastructure over time by interconnecting with registries and revenue as its business grows. That is, the business transitions from being a “thin” virtual

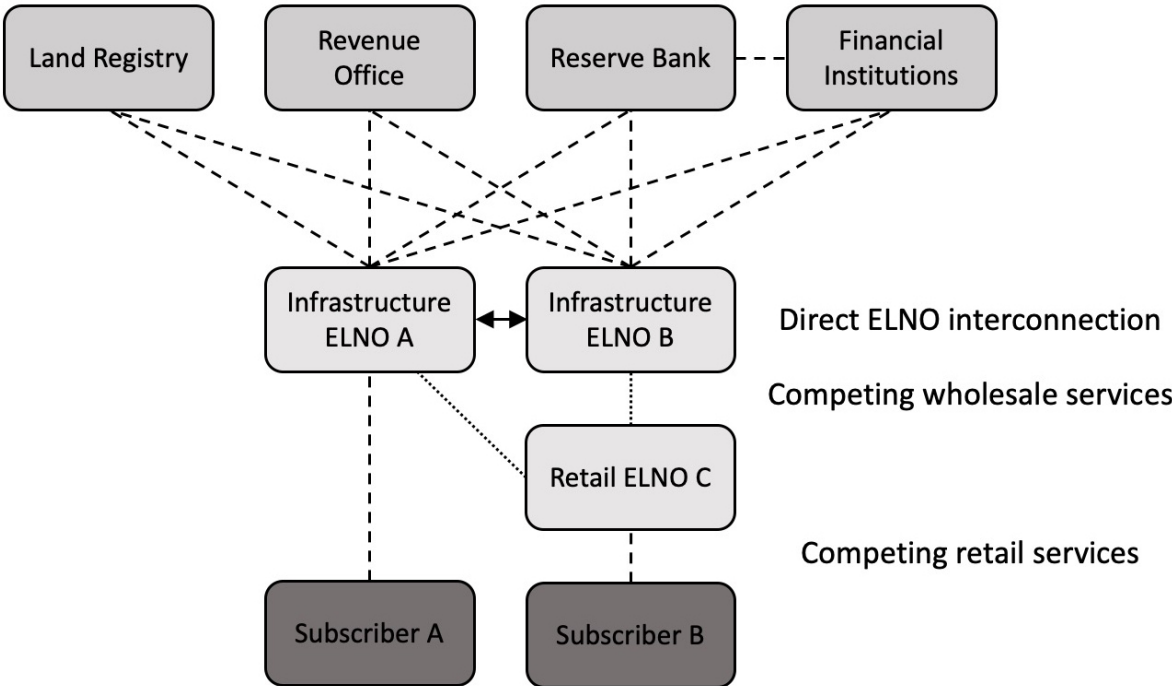
ELNO to a "thick" virtual ELNO. In the context virtual ELNOs and economic efficiency, this market based outcome is appropriate. Competition policy and economic theory prefers market based outcomes to mandated industry structures.

The likely first steps in interoperability are that each of the incumbent and the infrastructure based entrant will interconnect. The infrastructure based entrant is likely to adopt similar solutions for interconnection with the retail banks and as a batch administrator in respect of the RBA's RITS. That is, it will deal with commercial and reserve money in a similar way to the incumbent.

If ASX offers a wholesale service which uses the new entrant's infrastructure. It is likely that the incumbent will respond by offering a similar service.

However, it is unlikely that further entrants will adopt this approach because of the demand limitation set out above. It is possible that there will be novel financial settlement options offered by some entrant ELNOs and that others will enter the sector by acquiring services from one of the infrastructure based ELNOs. However, as a practical matter, the total number of infrastructure based ELNOs is unlikely to be more than three, of which two are already in place. This is set out in Figure 7.

Figure 7: Potential wholesale model



7.3 Data standards for interoperability

As in any technology-based interoperable environment, data standards are fundamental to the success of interconnection. The data standard provides a 'common language' for the two platforms to work with each other.

Some stakeholders have expressed concern about the degree of difficulty and time required to develop a data standard for interoperability. However, the

eConveyancing sector, unlike many other sectors of the economy, has a well-established culture of standards making. Outside of interoperability, appointment conditions require each ELNO to build and operate its eConveyancing platform to interface with the State and Territory land registries using a common data standard. The rationale for this is to ensure the integrity, consistency and efficiency of land titling across Australia. The standard is defined by the NECDS.

The TOWG substantially advanced development of a data standard. This work showed that much of the data standard can be drawn, with some modifications from the NECDS. In relation to the interoperability unique features of the data standard, TOWG was able to define the information to be exchanged and the place in the process where it would be exchanged. This was done for a four party transaction, and there is a significant amount of work in mapping the range of other eConveyancing transactions, but this can be worked through methodically using the base case.

One of the challenges of interoperability is to ensure that it does not limit innovation in the delivery of services. This is why data standards are so important. Designed well, the data standards do not overly confine what happens in each platform. The requirement is that the system delivers the minimum amount of information necessary to conduct a transaction to the interface.

In undertaking further work on the data standards, it is important to ensure that any intellectual property in interoperability data standards does not constrain their use or development. That is, one of the lessons learned in creating a mandated monopoly is that incumbency can limit intellectual property transparency.

7.4 How complex is interconnection?

There is complexity in the construction and operation of an eConveyancing platform. However, the increase in complexity (and associated risk) that flows from the interconnection of these platforms is not great. To some extent, this is clear from the limited number of changes and additional data exchanges required for interoperability that need to be added to the NECDS.

It is useful to think about interoperability as the sharing of instrument preparation, but once all subscribers are ready to settle, the settlement process is only conducted by the Lodging ELNO. The effect of this is that the lodgment and settlement phase is no more complicated than having a single ELNO. This is critical to risk analysis, especially the analysis of cybersecurity risk. Although there is a cybersecurity risk in the interconnection links, the cybersecurity risks associated with lodging and settlement are no greater than a single ELNO. Similarly, the fraud risks are determined by the weakest business process rules of one of the interconnecting ELNOs. That risk is no greater than the risk of using that ELNO.

It is important to stress that in the document preparation stage there is an opportunity for catch up at the locking stage. That is, a transaction cannot proceed, and nothing is locked until all parties agree on the content of the transaction for the settlement stage.

This is not to say there is no complexity. The business rules about the Lodging ELNO need to be carefully designed, especially in an environment where the incoming mortgagee can change on the eve of settlement. The business rules for linked transactions will also be complex. This reflects the complexity of linking. However, once the business rules are established, then they can be supported by the messaging between interoperating ELNOs.

It is likely that in the future the complexity may increase if linked transactions are treated as a number of parallel and concurrent settlements in which the Lodging ELNO is determined by the responsible subscriber for each settlement. In this scenario, the messaging will need to identify both that the transaction is linked and the transactions upstream and downstream of the lodgment. However, this again is a case of defining the scenarios and the business rules to deal with them, not an issue of complexity in technology implementation and system operation once the API is built and implemented.

7.5 Managing IT risk

The technology which would be used in building the messaging between ELNOs is not that unique or particularly difficult to work with if the business rules are clear. There are standard messaging formats and architectures widely used to send and confirm messages between different platforms.

The information and communications technologies (**ICTs**) that will be applied between interoperating ELNOs will be based on established ICT architecture. The messaging is expected to use best practice tools to ensure that messages sent are correctly received. The goes beyond simple acknowledgement of receipt. Instead, the messaging systems will need to use message metadata to identify that messages are complete and not corrupted. These approaches include check-sums on message content and verification of source identity (likely by both Internet Protocol address and authorisation and authentication protocols).

7.6 Need for a national solution

The Working Groups has been a step forward for identifying how an interoperability environment could work and areas that still need to be addressed, for interoperability to succeed it must be a national solution and therefore further national consultation is needed.

One of the benefits of the Working Group process was that many of the stakeholders are part of a national solution. Current and prospective ELNOs intend to operate nationally. The banks are national. The effect of so many participants being national bodies will be that a national solution to the regulation of interoperability will be able to use the work done in the Working Groups as a stepping stone.

Regulatory solutions are only required when the structure of an industry is inappropriate or where there has been a market failure. The ACCC's experience in other sectors suggests that the incentive for an incumbent to interoperate with an infrastructure-based entrant is unlikely to be high enough for there to be no

regulatory intervention and that *ex post* remedies (traditional competition law) will not be effective.

The *ex ante* approach taken into interoperability in other sectors has been highly prescriptive and has tended to become more prescriptive over time as the regulator is presented with new issues to develop *ex ante* rules to solve. However, there is an opportunity for a more outcomes-based approach to *ex ante* regulation for interconnection in eConveyancing. Regulation would define the key outcomes or principles which would be expected in interoperability arrangements, such as on cybersecurity levels, risk allocation and consumer protection. The outcomes of the Working Groups on interoperability demonstrate that the industry can work together to develop rules. The regulatory power to intervene may be as useful as regulatory intervention itself. That is, the knowledge that *ex ante* regulation could be imposed may drive a negotiated outcome. However, at the end of the day not everything can be left to negotiation between the parties because their interests are different.

It is essential that all stakeholders have an opportunity to contribute to the development of data standards. In particular, the standards need to be able to evolve in a way that does not create an extensive change management burden on Revenue Offices or Land Registry Offices. This requirement could form part of the terms of reference for the standards making body.

There are jurisdictional issues with interoperability data standards. If a Revenue Office in a particular state varies its API in response to law or policy, the standards will need to change to reflect the amendment. However, the standards making body has the potential to provide information to each state and territory revenue office about common practice between the offices. This would assist each office to best practice in API requirements over time.

7.7 Potential entrants and regulation

It is important to note that not all potential ELNO models require interoperability. For example, a business model that does not rely on central bank settlement may be technically feasible. This will create an important regulatory challenge whereby ELNOs may be regulated differently. Promotion of competition will likely require interoperability with an incumbent. However, to promote innovation new entrants should not be obliged to interoperate with other ELNOs. The concept of differential regulation of entrants and incumbents is well understood and is part of the process of promotion of competition.

Differential regulation in business to business interfaces needs to be distinguished from regulations in respect of end-consumers. Due to the high values of transactions in conveyancing consumer protection is critical. To reflect the differentiation of risk in the market, a differential regulation approach may mean that thin virtual ELNOs should have more onerous consumer protection obligations than other players. If barriers to entry and exit are low, here is a need to intervene on an *ex ante* basis to ensure that consumers (as well as subscribers) are not adversely affected by the exit of ELNOs from the market.

7.8 Next steps

There is a significant amount of work to be done in order to implement interconnection. However, it could be completed in a timely fashion. The stakeholders had a detailed understanding of the challenges of implementing eConveyancing. Interoperability is not incrementally much more complex than having two competing and separate ELNOs.

Further work does need to be completed in the following areas:

- use cases
- designing a legal framework for consents and authorisations
- uniform API between banks and ELNOs
- insurance and liability
- national uniform requirements for an ELNO

This further work needs to be undertaken on a national basis. However, the NSW Working Group approach provide a template how to establish and manage an industry-based process.

7.9 The research question

The research question for the paper is: "can providing platform interconnection address the monopoly-like structures that flow from network economics in multi-sided markets?". The answer from this case study is a provisional and conditional "yes". The process used to analyse interconnection of eConveyancing platforms in one state of Australia indicated that interconnection is feasible. It is also resisted by the incumbent. The implementation is by way of APIs. However, the need to involve a large number of stakeholders in defining these APIs flows from the platform characteristics of the incumbent and infrastructure based new entrant businesses. In a federation, the incumbent can benefit from the difficulties created in delivering a uniform national solution.