Landgate

Office of the Chief Executive

Mr Sean L'Estrange
Chairman
Public Accounts Committee
Parliament House
Perth WA 6000

Dear Mr L'Estrange

Response to the Public Accounts Committee: Inquiry into Information and Communications Technology (ICT) Procurement and Contract Management

Thank you for your letter dated 14 July 2015 inviting Landgate to make a submission to the inquiry into ICT procurement and contract management. Please find attached our submission.

If you require further information, please contact Ms Alison Hodge on

Yours sincerely

Mike Bradford
CHIEF EXECUTIVE

September 2015

Att

Landgate Submission to the Public Accounts Committee

Inquiry into ICT Procurement and Contract Management

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On 14 July 2015, the Chairman of the Public Accounts Committee invited Landgate to make a submission to the *Inquiry into Information and Communications Technology Procurement and Contract Management*. This is Landgate's submission to the Inquiry.

Executive summary

Landgate is recognised as a leader in the management and use of location information and technology, and as the guardian of property rights in Western Australia (WA). Landgate's functions serve to underpin the economic security and prosperity of the State and its citizens. Annually, its land registry functions secure $44bn dollars' worth of property transfers.

Since becoming a statutory authority in 2007, Landgate has focused on innovation, collaboration and customer service. It is constantly looking at ways to improve, to give its customers and the community an even better experience.

Landgate principally deals in information and data storage which requires the operation and development of large information systems. Historically this has meant custom development or heavy customisation of Information and Communications Technology (ICT) systems, extended delivery times and reduced organisational flexibility.

The successful delivery of ICT projects has enabled business improvement within Landgate. For example, the Shared Location Information Platform (SLIP) has challenged existing ways of working. By embracing new technologies, Landgate has reduced the cost of managing and sharing information, streamlined processes and enhanced the customer experience.

ICT is an important component of government service delivery. It is an enabler, and no project is, in itself, an ICT project. Any initiative presented solely as an ICT project is at high risk of failure, as every ICT project must be directly connected to delivering business and citizen outcomes. This is regardless of whether it is for regulatory or compliance requirements, operational or financial benefit, risk management or the pursuit of opportunities.

If the project cannot be explained in terms of business benefits, the risk of failure is high.

Without strategic intent, alignment and clear direction from the beginning, ICT delivery and its associated procurement are likely to realise less than optimal results. This may at times be exacerbated by limited knowledge of how to deliver ICT projects differently or the lack of effective incentives.

There are many new technologies emerging and some have the potential to transform the way organisations function and deliver products and services. The challenge is to effectively deploy those technologies that will deliver business outcomes and create lasting change with significant social and/or economic benefits.

For Landgate, this challenge has been addressed through the development of the Productivity, Procurement and Delivery Model; a synthesis of several theories that guide Landgate's decisions to deliver its ICT differently and successfully. Supported by robust Information Technology (IT) delivery and sourcing strategies, Landgate has learned that it is a combination of elements working together that delivers a different and better outcome.

This submission provides an overview of how Landgate uses ICT to enable business improvement and deliver important initiatives. It discusses some of the issues Landgate believes are faced in government around ICT delivery and explains how it has addressed these issues. Three case studies are included that demonstrate the importance of embracing new technologies to provide better ways of working that continue to meet stakeholder needs.

Introduction to Landgate

Landgate is recognised as a leader in the management and use of location information and technology. It provides land registry, cadastral, geospatial and property valuation services for 1.4 million property titles in WA.

Real property is the largest asset class in Australia, representing approximately $5.5 trillion in value, and Landgate's role as guardian of property rights and custodian of the State's location information asset underpins the economic security and prosperity of WA and its citizens. Its land registry functions secure $44bn dollars' worth of property transfers annually.

Since becoming a statutory authority in 2007, Landgate has set about commercialising its offering to deliver a broad range of products and services to Western Australians – providing significant benefits to the State.

While focusing on delivering core business, Landgate has also become recognised in the public and private sectors for its leadership in innovation and customer service. Landgate is constantly looking at ways to improve, to give its customers and the community an even better experience.

Landgate is primarily an information business and it relies entirely on the effective use of ICT to deliver its products and services.

This submission provides an overview of how Landgate uses ICT to meet customer needs, enable business improvement and deliver important initiatives, including electronic conveyancing (as part of the reform of the sector nationally) and the Shared Location Information Platform (SLIP) in WA.

It discusses some of the issues faced and explains how Landgate's IT and sourcing strategies and approach to delivering ICT address these issues.

Three case studies are included to demonstrate the importance of embracing new technologies and ways of working to focus on the outcomes society needs and wants as part of a trusted, sustainable and collaborative government.

ICT in context

For governments and the public sector, achieving the best possible outcomes for communities and citizens is expected. Dealing with uncertainty and delivering affordable services amidst continued financial constraints means the sector must think and act differently.

This includes being:

- agile and ready to anticipate situations and adapt;
- innovative and open to new ideas;
- connected across sectors and organisations;
- transparent and accountable for actions; and
- able to act and behave differently with internal management capability to effectively channel resources[1].

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[1] *Future of Government: Tomorrow's Leading Public Body* (2013). Price Waterhouse Coopers.

ICT is an important component of government service delivery. It is a powerful enabler and it is clear that ICT can provide new ways of doing things, and can create lasting change and significant benefits if effectively applied[2].

The Western Australian Public Sector spends at least $1 billion per year on ICT goods and services[3]. There are numerous examples of how government has worked collaboratively and embraced new technologies to enhance service delivery and maximise its return on ICT investment.

In the last decade, successful implementation of SLIP has demonstrated the power and benefits of collaboration across government to reduce the cost and effort in information management and dissemination in WA.

SLIP is a whole of government information sharing platform, established in 2007, that has changed the way that location-based information from multiple organisations is made available to many users.

SLIP has shown that with collaboration and innovation, improved cost effective ways of managing and sharing data are possible.

With continued rapid developments in ICT, citizens' expectations of public services have risen whilst funding to deliver those services has reduced. New, often disruptive technologies, applied effectively, have the potential to increase productivity and provide widespread economic and social benefits.

Improving productivity

ICT is an enabler – a tool, and by their nature, tools are designed to improve productivity. Productivity improvement, whether from ICT or other tools, can only come from[4]:

1. increasing economic specialisation, such as specialist providers of cloud services;

2. reducing the cost of coordinating economic specialists, for example, using more appropriate sourcing models and contract arrangements to deliver services; and/or

3. applying technology or processes which increase economic specialisation or decrease the cost of coordinating those economic specialists. This may involve deploying disruptive technologies and alternative management arrangements (such as cloud and/or public private partnerships) to achieve cost reductions.

In a government setting, productivity improvement may be difficult to identify, measure or deliver for various reasons. The work of the public sector often creates monopolies for many of the goods and services that it delivers. In the absence of other willing providers, the government is responsible for ensuring these functions are delivered. The challenge is for governments to identify better ways of working in non-competitive markets.

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[2] *Disruptive Technologies: Advances that will Transform Life, Business and the Global Economy* (2013). McKinsey Global Institute.

[3] *Inquiry into Information and Communications Technology (ICT) Procurement and Contract Management: Call for Submissions* (2015). Western Australian Legislative Assembly - Public Accounts Committee.

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[4] An extension of Adam Smith's theory on the *Division of Labour,* sourced from http://www.econlib.org/library/Smith/smWN1.html

The public sector has different characteristics than the private sector. The key reality to the private sector is market-driven competition and profit is a clear measure. In a true market setting, differences in productivity improvement between competitors lead to price differentials. An organisation with greater productivity is more likely to create and sustain a customer-base for its products or services. This ultimately leads to a changed strategy to improve productivity performance on the part of the less productive competitor or their business model is likely to fail.

In the public sector, it is not possible to rely on these signals, so there may be less drive to implement change, to do something new or to stop doing something. For ICT initiatives in the sector, this may lead to fewer incentives for ICT to deliver substantial productivity improvements.

What defines ICT failure?

The success or failure of ICT procurement and ICT project delivery should be viewed in a broader context as no project or initiative is, in itself, an ICT project. Any project presented as such is at high risk of failure as every ICT project must be directly connected to a business or citizen outcome.

This is regardless of whether it is for regulatory or compliance requirements, operational or financial benefit, risk management or the pursuit of opportunities. If the project cannot be explained in terms of business benefits, the risk of failure is high.

ICT in most organisations is an enabler like finance, human resources and facilities. These corporate services support the organisation and all need to work in harmony to deliver enabling infrastructure and services to ensure effective and efficient outcomes. There are many occurrences of successful delivery of ICT services and projects but unlike failures, these rarely make the headlines.

The successful delivery of an ICT initiative or ICT elements underpinning a business project is often overlooked. However, when a business initiative fails to realise its targeted outcome, often there is a rush to blame ICT, regardless of whether the ICT delivery is to budget and timeframe.

This paradox of 'successful' delivery to budget and timeframe of the ICT elements versus perceived failure can stem from:

- poor communication between the business and ICT of the complete problem or opportunity for which an ICT solution is sought, that is no shared understanding resulting in two opposing views (actual versus perceived);

- the pursuit of a technology solution when technology is not the answer. For example, automation of existing processes where the processes themselves are the issue;

- an unrealistic expectation of achievable ICT benefits or the pace of achievement; and

- a lack of coordination between uptake of ICT change and the cultural and organisational change needed to fully realise the benefits (ineffective change management).

The path to a successful ICT delivery starts with the alignment of a number of variables. Landgate has developed the Productivity, Procurement and Delivery Model (PPD Model) to draw together the variables and sequence activities based on proven theories that deliver successful ICT results.

The PPD Model is a synthesis of a number of theories that have guided Landgate's decisions to deliver its ICT differently and successfully. The model is comprised of six phases, and each phase describes the stages to deliver ICT from the leadership phase (making sense of the environment) through to the benefits realisation stage.

The phases are supported by, and aligned to, the essential components of Landgate's approach to delivering ICT, including its business strategy, IT and sourcing strategies, program and change management, innovation and benefits realisation. This is depicted in Figure 1 overleaf.

Further explanation of the background to the PPD model, relevant issues and Landgate's response is provided in Appendix A.
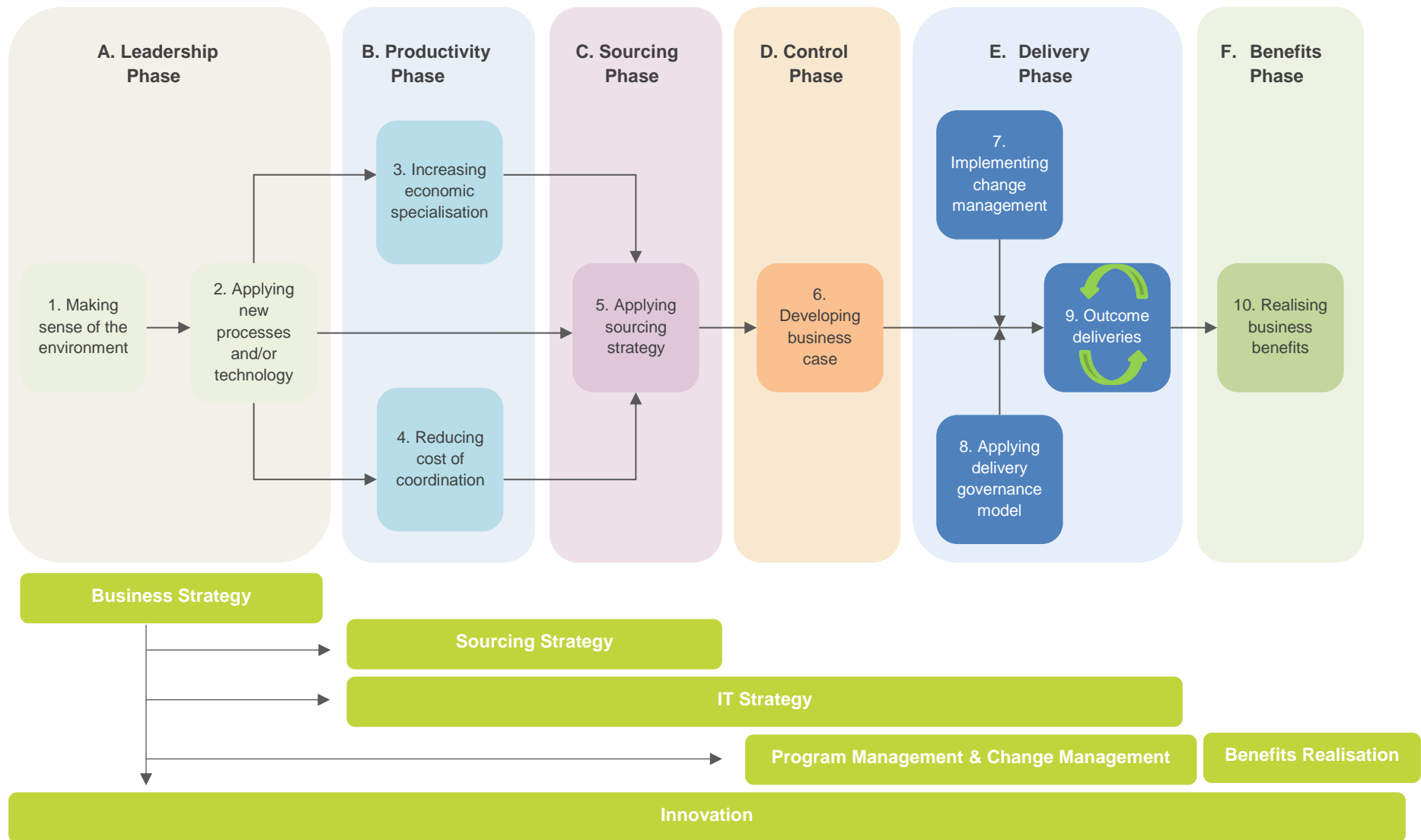
Figure 1: The Productivity, Procurement and Delivery Model (PPD Model)

Landgate's Sourcing Strategy

The purpose of Landgate's Sourcing Strategy is to deliver organisational capability aligned to business strategy at the best possible price. Given the nature of Landgate's functions, the Sourcing Strategy is focused on ensuring ICT sourcing decisions appropriately align with Landgate's overall business strategy. Decisions are guided by two well-established models: the Decision-Making Matrix on Outsourcing (Figure 2); and the Decision-Making Matrix for Strategic Sourcing by Market Comparison (Figure 3).

The three fundamental productivity principles (referred to earlier in this paper) underpin Landgate's Sourcing Strategy and are implicit in the PPD Model. Landgate's sourcing and procurement decisions are guided by further principles.

These include ensuring value for money with consideration of fitness for purpose, total cost of ownership and minimised transaction costs; sourcing arrangements that deliver flexibility, drive innovation and supplier efficiency; and innovative market engagement where market capability or cost efficiencies are not superior.

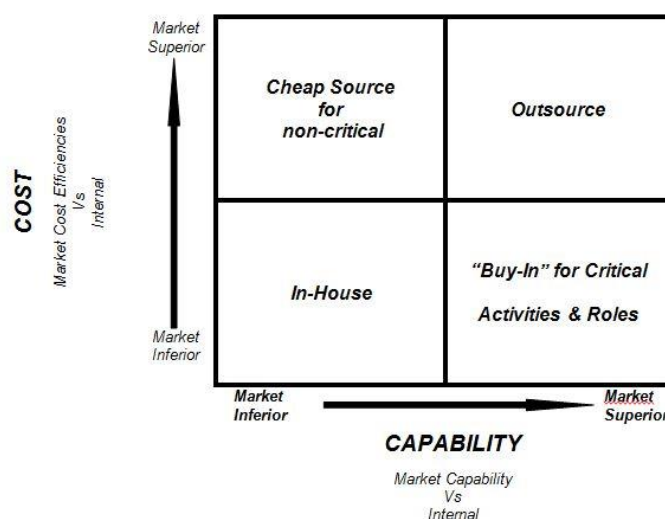Figure 2: Decision-Making Matrix on Outsourcing *(Willcocks, Petherbridge and Olson, 2002)*

Figure 3: Decision-Making Matrix for Strategic Sourcing by Market Comparison (*Oshri, Kotlarsky and Willcocks, 2011*)

Landgate's IT Strategy and landscape

Landgate principally deals in information and data storage which requires the operation and development of large information systems. Historically this has meant custom development or heavy customisation of ICT systems, extended delivery times and reduced organisational flexibility.

Landgate has recently developed a specific IT Strategy which is explicitly aligned to the organisation's overall strategy. All significant ICT initiatives are discussed and approved at an enterprise level with benefits tracking occurring throughout the project – not simply at the end.

Landgate's current ICT delivery model is based on a mix of internal capability and two core insourced service providers engaged under specific service based contracts. This approach provides a flexible, outcomes focused model for ICT delivery, appropriately aligned but removing the burden of resource management. Landgate's ICT area does not directly engage or manage any individual contract staff.

The IT Strategy is designed to drive organisational benefits by deploying new technologies and service delivery options, as well as reducing costs by leveraging economic specialisation and minimising the cost of coordination. Where Landgate can meet its ICT needs from commoditised products and services it is actively seeking to do so. Only those areas which require the application of specific subject matter expertise and knowledge not readily available as a market offering will be customised or built.

The IT Strategy articulates a series of principles to guide decisions. These include:

1. solutions must provide value for money;

2. buy commercially available solutions as appropriate rather than build in-house;

3. systems must be flexible, scalable and secure;

4. deployment of flexible labour models where possible or desirable;

5. any development will be agile to reduce time to delivery;

6. commercial arrangements share risk and rewards (e.g. public private partnerships);

7. systems will be reliable and available and use appropriate standards; and

8. design to be generic wherever possible with reduced novelty so that solutions can be reused where possible.

These are broadly represented in Landgate's 5C's Approach Principles applied daily for the assessment and delivery of all ICT initiatives:

1. *Cloud first* – Landgate will use 'as-a-service' offerings from key providers to deliver infrastructure, application, communications and other elements.

2. *COTS second* – Where no suitable cloud offering meets Landgate's needs, it will use commercial off-the-shelf solutions (COTS) in whole or part.

3. *Construct third* – Where no cloud or COTS solution is available, Landgate will construct a solution using modern reusable development methods.

4. *Continuous delivery* – Landgate will deploy functionality as often as practical to maximise ongoing return to the organisation, rather than a big-bang approach.

5. *Configure don't customise* – Landgate will select solutions that actively support a configurable approach to maximise flexibility and minimise cost of maintenance.

While the adoption of these principles by Landgate predates the establishment of the Office of the Government Chief Information Officer (OGCIO), they broadly address a number of the "*common issues across the WA Public Sector*" identified in the OGCIO document *The Reality – Current State ICT Landscape V0.1.*

ICT issues and Landgate's response

This paper has so far provided insight, from Landgate's perspective, into some of the issues that impact ICT delivery – issues that are not unique to Landgate. It has also explained how Landgate has responded, through the development of the PPD Model, IT Strategy and Sourcing Strategy which collectively guide Landgate's decisions to deliver ICT differently and successfully.

Further information about the application of the PPD Model and the IT and Sourcing Strategies is provided in Appendix A which explains the background and issues in the context of each of the six phases of the PPD Model, including specific details of how Landgate has responded to these issues.

Landgate case studies

Landgate has three case studies that demonstrate the authority's innovative and collaborative approach and application of the PPD model to ICT initiatives, resulting in successful delivery and the achievement of business outcomes.

A summary of each of the case studies is provided below. Further detail can be found at Appendix B.

SLIP Classic

The SLIP was established in 2007 as a whole of government open data platform for location-based data in WA. This successful collaborative cross-government initiative delivered complex ICT capability that now shares 4,000 datasets from across 40 organisations in WA.

SLIP was developed to improve the quality, timeliness and useability of government location information; simplify access to this information through online access using common infrastructure and services; and improve the efficiency of government business processes involving location and geographic information.

SLIP was a bespoke deployment as it was a world first – at the time, nothing similar existed anywhere. It was built using open source components on physical infrastructure at Landgate in the absence of an off-the-shelf solution. This approach also avoided vendor lock-in.

The success of the SLIP initiative is due to many factors. Lead agencies were appointed to deliver separate projects within the SLIP Program, assigning accountability at the agency level and applying different governance arrangements at different stages.

There was a significant focus on stakeholder consultation and collaboration as the initiative proposed fundamental changes to information management. Contributing to the successful buy-in and engagement by agencies was the ability for data custodians to retain control over their data and continue to tailor their data to meet their specific needs, through the federated data dissemination mechanism.

SLIP also provides opportunities for partnering with the private sector to leverage their skills, technologies and expertise in the delivery of new services for different sectors.

SLIP is an exemplar of a coordinated collaborative approach to information management and ICT projects, reducing the duplication of effort in collecting and maintaining data for WA. SLIP has changed the way data is managed and shared in WA.

SLIP Future

Since SLIP Classic was implemented in 2007, customer expectations regarding availability, presentation and ease of access to location information have changed significantly. This change has been driven by the release of Google Maps and Google Earth along with the rapid evolution of mobile technologies including smart phones.

In 2013, the SLIP Future Program was implemented as part of the *Location Information Strategy for WA* to deliver a working, modern infrastructure to manage WA's shared location information. SLIP Future will implement an improved platform using contemporary architecture and design that is more robust, functional and scalable to meet the changing needs of customers regarding ease of use and mobility whilst building on the existing capabilities of SLIP Classic.

A new enabler platform was developed and implemented using Google's cloud based Google Maps Engine (GME), which reflects the widespread availability of commercial off-the-shelf software and platform as-a-service offerings now available.

Use of a cloud based offering improved the ability of SLIP to handle large fluctuations in demand over short periods and be scaled up more easily over time.

In 2014 Google announced the decommissioning of GME in early 2016. Since the development of SLIP Classic as a bespoke solution out of necessity, developers within the industry have worked to provide common off-the-shelf solutions. This will facilitate an easier transition from GME to an ESRI ArcGIS Server and Portal environment, hosted in Amazon Web Services.

As part of supporting WA's Open Data Policy, a further opportunity has emerged to enhance the capability of SLIP to accommodate a wider range of data into an expanded information sharing platform. This broader platform, hosted by a third party provider, is being implemented by Landgate in consultation with other agencies, the private sector and researchers.

PEXA

PEXA is Australia's online property exchange, owned by Property Exchange Australia (PEXA) Limited. It is a secure platform that allows all participants in a property transaction to lodge and settle those transactions electronically (this is known as e-conveyancing). E-Conveyancing has reduced processing times and delivered cost efficiencies to participants including property lawyers, conveyancers, financial institutions and land registries. The PEXA platform is expected to deliver gross annual savings to the real property conveyancing industry of up to $250m.[5]

The concept of e-conveyancing is not new and had been on the national agenda for many years. Limited progress was made until the Council of Australian Governments (COAG) endorsed the initiative in 2009 along with state and private capital investment in 2010.

In January 2010, National e-Conveyancing Development Limited (NECDL) was incorporated by the states of New South Wales, Victoria and Queensland. The formation of NECDL was a major milestone for e-conveyancing. NECDL was a public company limited by guarantee to create (but not operate) the NECS. A Board comprising a chair and six non-executive directors was formed.

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[5] *PEXA Digital Property Report: Economic Impact of e-Conveyancing (2010).* Report prepared by PWC, available at https://www.pexa.com.au/files/PEXA_PwC%20E-Conveyancing%20Report%20May15.pdf

In 2010 Landgate, on behalf of the State Government of WA, became a shareholder of NECDL.

In 2011 NECDL was converted to a company limited by shares. Landgate invested in the primary equity stage capital raising along with the four major banks (National, Westpac, Commonwealth and ANZ) and Macquarie Capital Investments and HORDE (company management).

Since this date there have been subsequent capital raisings increasing the shareholdings and number of commercial investors. Currently WA has the largest government shareholding at 13.64%.

In March 2014, NECDL changed its name to PEXA Limited.

Implementation of the NECS commenced in 2013 with staged releases across the states. The platform became operational in WA in June 2014 and fully functional by May 2015.

There are more than 1 million property transactions per year in scope for e-conveyancing through PEXA. The equity participation by the four major banks anchors the success of PEXA and e-conveyancing as these banks are involved in over 80% of these transactions.

The PEXA model has demonstrated that a commercial approach and private capital investment is effective in driving the discipline necessary to deliver a complex ICT solution.

The national approach has standardised legislation and processes across numerous jurisdictions and applied modern technology to improve the conveyancing process. It is an example of the application of disruptive technologies to achieve productivity.

Closing remarks

Dealing with uncertainty and delivering affordable services amidst continued financial constraints means governments and public sector organisations must think and act differently. To achieve this, governments need to develop new ways to deliver services that meet citizens' needs in a way government can afford.

Landgate is recognised as a leader in the sector for its innovation, collaboration and readiness to do things differently. This is reflected in how it delivers ICT, both within the authority and in concert with other organisations. Seen as a critical enabler to achieve business outcomes, effective ICT delivery at Landgate has resulted in significant business and process reform, increased productivity and reduced costs.

Through exploration and understanding of the underlying issues that impact ICT service delivery, Landgate has developed mechanisms to guide ICT decisions for successful implementation that deliver business outcomes and meet stakeholder needs. Based on sound theory and aligned to the overall business strategy, Landgate's PPD Model, IT Strategy and Sourcing Strategy collectively deliver ICT differently and successfully.

The concepts in this paper are shared with the Committee so that the principles, where applicable, may be adopted more broadly across the sector to deliver better services and reduce costs.

APPENDIX A – Background, Issues and Landgate's Response in the Context of the PPD Model

Background and Issues	Landgate Response to Issues
A. Leadership Phase	
1. Making sense of the environment Chandler and Chandler[6] identify three key principles of effective leadership that can be applied across domains, cultures, and eras. These are: • developing a compelling vision for the achievement of a set of goals that are shared by a group of followers; • persuasively communicating that vision in a manner that is appropriate to the group; and • building and managing an organisation that effectively supports the implementation of the vision. "Making sense of the environment" is the strategic directive provided, by the Board and Executive. It is where fundamental alignment to business needs and expectations management begins, and good decisions and governance choices set the scene.	Explore mechanisms that drive the pursuit of enhanced productivity including those encompassing the use of contemporary, flexible and scalable ICT solutions. Ensure that leadership is shared not delegated within the organisation and that consistent messages are articulated in a documented, well communicated and concise organisational strategy. Establish key objective (quantitative) measures in addition to suitable subjective (qualitative) measures in setting organisational goals. Ensure all ICT projects align with and support the business strategy.
2. Applying new processes and/or technology Governments and public sector organisations have a tendency to be risk averse by virtue of the role they play in society. This risk aversive culture can present challenges for any proposals which move beyond current organisational or information systems structures to be contemplated as the informal and formal approval processes can be complicated and challenging. This stems in part from a traditional view of ICT delivery as a protracted, complex and expensive activity based on the conventional capital intensive acquisition approach.	Assess risk (as it pertains to ICT options) in a more pragmatic way. Educate those involved in ICT procurement activities in modern ICT delivery options. This education is ongoing. Streamline review and approval processes so they are more appropriately scaled to the actual risk – not one size fits all approach. Promote and encourage intra and inter agency experience sharing including lessons learned on ICT projects. Explore mechanisms that drive enhanced productivity including those using contemporary, flexible and scalable ICT solutions.

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[6] *On Effective Leadership: Across Domains, Cultures, And Eras* (2013. G. Donald Chandler and John W. Chandler.

Background and Issues	Landgate Response to Issues

B. Productivity Phase

3. Increasing economic specialisation

Economic specialists, through efficiencies, experience and skills development have the ability to provide process efficiencies and economies of scale at a better price point than if separate organisations were to develop these capabilities internally.

Look for opportunities to leverage increased economic specialisation through the use of:

- commodity products and services (as a service approach);
- leveraging COTS solutions;
- reduced customisation of ICT; and
- on demand specialist advice.

4. Reducing cost of coordination

Efforts to reduce the cost of coordinating economic specialists are largely limited to the development of Common Use Arrangements and aggregated buying, which are aimed at cost control rather than productivity improvements.

Reduce the cost of coordinating economic specialists through the use of appropriate sourcing models and contract arrangements.

C. Sourcing Phase

5. Applying sourcing strategy

Some agencies have little understanding of alternative sourcing strategies. There is little or no formal evaluation of different forms of engagement for different kinds of ICT projects. This evaluation should consider the type of product or service to be delivered, the strategic fit with the agency, the market capability and cost and the level of tacit or explicit knowledge required to deliver.

Agencies are often constrained by an asset acquisition focus in ICT procurement. Agency sourcing strategies (if they exist) are therefore constrained in application of approach to an asset focused model.

Develop a Sourcing Strategy aligned to the overall business strategy.

Ensure the Sourcing Strategy and IT Strategy are in alignment.

The Sourcing Strategy should challenge and address all assumptions and myths to ensure an optimal sourcing decision is made.

Sourcing strategies to include consideration (in the context of the agency needs and setting) all delivery models. The Sourcing Strategy should not exclude any path, except where it breaches legislative, or whole of government policy parameters.

Background and Issues	Landgate Response to Issues
D. Control Phase	
6. Developing business case With the move to commodity as a service options, agencies need to consider the financial policy constraints over capital and recurrent expenses in business case construction. Insufficient alignment of business case benefits with objective, realisable outcomes. Success of ICT outcomes or deliverables does not necessarily equate to expected benefits.	Consideration for appropriate policy and process to accommodate the transition from (or addition to) capital investment options in ICT infrastructure to the consumption model for ICT services. Procurement practices support services to adapt to new delivery models arising from as-a-service offerings. Establish objective (quantitative) measures in addition to suitable subjective (qualitative) measures when assessing business cases involving ICT deliveries.

Background and Issues	Landgate Response to Issues
E. Delivery Phase	
7. *Implementing change management* The lack of effective whole of organisation change management can limit or extinguish expected benefits realisation. Change management is a key moderating variable in ensuring effective delivery of ICT projects and realising benefits.	There are a number of change management methodologies that can be used to effect the transition in the application of a new technology and/or process. John Kotter's Accelerate 8-Step Process or the Jeffrey Hiatt ADKAR model are two. The purpose of implementing change management is the successful delivery of the outcome and the realisation of the benefit. As an example, if the efficiency in implementing an automated process is a reduction in FTE, the change management process will assist in the delivery of the efficiency. The over or under estimation of tacit knowledge can also impact the success of the change process. Tools such as Skills Framework for the Information Age (SFIA) can assist with codifying the knowledge.
8. *Applying Delivery Governance Model* While models such as PRINCE2 can provide very effective platforms for ICT project governance, simple adherence to any model is not guaranteed to deliver successful outcomes or full benefits realisation. Too many projects are judged as successful because governance artefacts are successfully produced on time, rather than a focus on outcomes. In addition, the scale of governance can dwarf the scale of the initiative when not well applied leading to poor outcomes.	Governance provides oversight to the business case and should be appropriate for the specificity of the project being delivered. Ensure the process fits the organisation not the other way around. Effective governance models are based on three key principles: - single accountability - one cheek to kiss, one throat to choke; - shared responsibility – between agency and the supplier; and - governance is a mechanism for assisting delivery rather than an end in itself.
9. *Outcome Deliverables* A big bang approach without a focus on early value often means a protracted delivery of outcomes, more difficult change management and risk of organisation needs diverging from those originally stated. As a result, value is not realised until late in the process, new or changed factors that impact or influence the object of the ICT initiative are harder to take into account and benefits may be diminished. In addition the larger a delivery cycle is, the greater the cost and hence the risk of error or scope creep is magnified.	A continuous delivery principle to realise early and ongoing value to the organisation should form part of every agency's ICT strategy and be encompassed in the business case deliverables.

Background and Issues	Landgate Response to Issues
F. Benefits Phase	
10. Realising business benefits A lack of robust challenge mechanisms that properly explore the realisation of benefits (or lack thereof) both during the ICT project and after mean that, as outlined earlier, the ICT elements can be delivered to budget and schedule and yet benefits are not realised. Benefits arise in many cases from the intersection of more than one project and business case and the lack of a cohesive alignment with organisational, sourcing and ICT strategies means this compounding of benefits is not realised. The lack of benefits realisation is also apparent where projects that should be terminated during execution, when it is clear that benefits cannot or will not be fully realised, are driven to completion because project completion, rather than benefits realisation is the focus.	Introduce appropriate control mechanisms to challenge the ongoing delivery of an ICT project against: - environmental change (external); - organisational change (internal); - policy change (whole of government); and - financial elements (cost versus return) - customer adoption Intent (internal or external) as they relate to the actual realisation of stated benefits. Ensure measures of success reflect benefits realisation as the key indicator, versus adherence to controls i.e. avoid great process with poor outcomes.

APPENDIX B – Landgate Case Studies

1. Case Study - SLIP Classic

Introduction

The Western Australian public sector collects and uses a vast array of data in the course of its everyday operations. This data is an important strategic asset and, when managed well, is a source of significant value to the State. The Shared Location Information Platform (SLIP) was established in 2007 as a whole of government open data platform for location-based data in WA. It is a collaborative program that delivers location-based information from multiple organisations to those who need it, anywhere, anytime. As of June 2015, SLIP was being used to share 4,000 datasets from across 40 organisations in WA.

In the knowledge economy, information is a highly regarded and valuable asset. Government agencies have a genuine competitive advantage, possessing and controlling a vast array of information. The majority of information is location-based, allowing it to be integrated and visually presented with relevant data to help facilitate planning, risk management, resource allocation and evidence-based decision-making. SLIP was developed to enable this.

SLIP's design allows agencies to dynamically connect their data into the SLIP Enabler platform to facilitate the creation of products and services from the data available. Through this award winning initiative, shared access to location information became more economical, fast and simple for government, industry and the community.

In 2008, SLIP won the top prize for Improving Government in the Premier's Awards for Excellence in Public Sector Management for its ability to streamline processes, reduce government spending, and increase public access.

The award recognised Landgate's ability to work collaboratively across the public and private sectors to build an innovative, technical infrastructure that adds value to WA's public sector information and meets stakeholder and community needs. SLIP also won the 2008 Asia Pacific Spatial Excellence Award for Spatially Enabling Government.

Background

In 2003, a Functional Review Taskforce recommended that the creation of a single point of access to land and property information would contribute to cost savings and other efficiencies. Consequently, Cabinet provided in-principle approval to develop an innovative technological solution to share information across government agencies. This project was known as the Shared Land Information Platform, or SLIP. A critical aspect of the approval was to establish Landgate as the lead agency, changing the way major across government projects were delivered.

The introduction of SLIP aimed to achieve the following objectives -

- improve the quality, timeliness and useability of government location information;

- simplify access to government location information by providing online access using common infrastructure and services to link individual agency systems and data stores together; and

- improve the efficiency of government business processes involving location and geographic information, particularly those that spanned several agencies.

Other factors driving this change included -

- the increasing use of spatial and location-based information in all areas of society;

- the need to reduce duplication of infrastructure and improve service delivery from a whole-of-government approach, particularly in the areas of land development, emergency and natural resource management, and interests in land; and

- the requirement to assist smaller agencies to leverage off the investment of larger agencies and gain the benefits of a shared capability at a fraction of the cost.

Important factors in the development of SLIP

Throughout the development and implementation of SLIP, and during its early years of operation, a number of significant hurdles were overcome and lessons learned by Landgate to achieve successful cross-government collaboration to deliver complex ICT capability.

Technology and sourcing

As the SLIP concept developed, it was clear that it would be a world first - at the time, nothing similar existed anywhere. SLIP was a bespoke deployment, built using open source components (including Geoserver and Mapserver) on physical infrastructure (servers) at Landgate. A 'satellite' infrastructure consisting of data servers securely connected to the Landgate infrastructure was also put in place.

Following the launch of the original SLIP enabler platform, the satellite infrastructure was gradually replaced with virtual servers at Landgate. An open source platform was selected as no off-the-shelf solution was available at the time. This approach enabled the platform to avoid vendor lock-in. However, the bespoke approach also brought with it some overheads in terms of maintenance of hardware and software versions.

Consultation and collaboration

Early in the development of SLIP, efforts focused on stakeholder consultation and collaboration. As SLIP proposed fundamental changes to information management, a different approach and new ways of thinking were essential. To this end, Landgate's Chief Executive visited other agency heads to gain support for SLIP and remained a relentless champion until its implementation.

As the project progressed, maintaining an elevated strategic oversight became necessary at the whole of government level, with the former e-Government subcommittee of the Strategic Management Council (comprising all heads of department and chaired by the Premier) taking ownership for the overall strategic administration of the SLIP program.

Data custodianship

Another important factor in cementing engagement was the notion that data custodians would retain control over their data and were free to continue to tailor their data to meet their specific business needs. SLIP focused on providing a federated data dissemination mechanism for agencies to deliver their data to their clients through a standard, robust and secure framework. This federated model overcame a major barrier within government agencies, specifically their concern regarding relinquishing control of the data, systems and funding related to their information.

Focus areas

In order to provide some parameters around what could have been a very large and unwieldy project, four focus areas with specific business outcomes were identified. These focus areas reflected government priorities at the time and made the management requirements for accountability and funding easier.

The SLIP Enabler platform (led by Landgate) and the four focus areas were recognised as discrete projects and responsibility for each was assigned to a lead agency with Landgate providing overarching leadership. In this way, collaboration at the technical and business levels was achieved, whilst maintaining accountability and transparency.

The four focus areas were: emergency management led by the (then) FESA; natural resource management led by the Department of Agriculture and Food; electronic land development process (eLDP) led by the (then) Department of Planning and Infrastructure; and interest enquiry led by Landgate. eLDP and interest enquiry were transaction-based projects that demonstrated SLIP's usefulness in enabling cross agency approval and transaction processes which are scalable and reusable for other government processes. For example, mining tenements and water rights.

Challenges

A 'silo' culture leading to the protection of 'territories' and a fear of losing control of their data, funding and revenue opportunities together with a reduction in FTE, were key challenges to overcome. At an operational level, managers resisted the SLIP concept as they perceived automation and streamlining could affect funding, job security and job enrichment.

At the time, across government there was little acceptance or acknowledgement of information as an asset. As a result the same base data was often being maintained inconsistently by several agencies, presenting a problem for re-integration, value-adding and interrogation as facilitated by SLIP. Additionally, each agency's ability to ensure data quality differed based on priority and resourcing. Obvious discrepancies in data meant that some agencies were too embarrassed to share their information across SLIP, hence customers needed to source information in isolation.

Originally, SLIP was designed to be used directly by those with some experience and expertise in connecting to web (data) services. The public and other non-expert users used SLIP via applications built by various organisations e.g. MyWater by Water Corporation. A post-implementation review of SLIP conducted in 2009 revealed that take-up had been limited outside expert-users as a result, providing a significant opportunity to expand the direct use of SLIP in the future.

Lessons learned

The SLIP Implementation Plan required a range of strategies to ensure buy-in at all organisation levels early in the initiative. These strategies included:

- clear articulation of the SLIP concept – simple, consistent messages for all levels of agencies using a 'lead agency' approach with assurance that:
  - business and technical solutions would not become fragmented; and
  - custodians retain control of their data and continue to tailor it for their needs;
- use of focus areas with a lead agency accountable for outcomes via a committee;
- support for agencies to revise/align their data to allow SLIP integration;
- use of external consultants where suitable to ease concerns of Landgate dominance;
- use of different governance frameworks for different stages; and
- development of licence/service level agreements to manage the ongoing relationship between agencies and Landgate's use/sale of other agencies' information.

Despite SLIP's success, attracting other agencies to participate has been an ongoing challenge. Cross-government initiatives will continue to be difficult to instigate and manage due to the challenges listed above. To minimise this, successful strategies include identifying a lead agency, clear budget responsibilities and funding arrangements, and providing incentives for agencies to participate.

An effective model

The vast amount of information made available through SLIP realised new prospects to partner with the private sector to leverage their skills, technologies and expertise in the delivery of new applications for specific sectors. The SLIP Developers Program, run by Landgate, commenced in 2009 and provided opportunities for private organisations to access the information in SLIP and build innovative applications that integrate data to produce a result or report instantly. The new applications they identified highlighted the growing need for more information to be made available through SLIP to deliver efficiencies across the public and private sectors which can support better planning, reduce costs and inform the community. Seed funding was also provided to a number of the SLIP Developers for innovative ideas through Landgate's Innovation Program.

SLIP leveraged new technologies to deliver a cross government approach to data collection, system integration and accessing information. This coordinated and collaborative approach to information management and ICT projects reduced the duplication of effort in collecting and maintaining data throughout WA. SLIP has changed the way data is managed and shared in WA. It allows evidence-based decisions to be made from a real-time, complete and consistent knowledge base. As an integral part of the *Location Information Strategy for WA,* SLIP continues to be enhanced to deliver further benefits through the SLIP Future project (detailed in the next case study).

In July this year, the Western Australian Cabinet approved the whole of government Open Data Policy for the State. Supporting the principles of SLIP, the policy aims to facilitate greater release of government data to the public in appropriate and useful ways to generate value and productivity.

An assessment of the benefits of SLIP in 2014 estimated that it had been used to avoid some $8 million in the two years between 2012 and 2014 in duplication of ICT infrastructure to share and access location-based data. This estimate is considered conservative as cost savings in the reduction of effort required to separately source the data shared through SLIP have not been calculated.

Conclusion

Throughout the last decade, SLIP has successfully opened up access to government location information. An internationally recognised information sharing platform, SLIP has demonstrated the value of location information in across government initiatives and to the broader community. It has tested the ability of agencies to collaborate to achieve outcomes, and meet government, industry and community needs. As Government's seek effective and efficient solutions to the complex challenges in the provision of services, and to maximise the use of technologies and reduce overall ICT costs, an inclusive approach by a joined-up government through portals such as SLIP is key.

2. Case Study - SLIP Future

Introduction

WA has a proud history of being internationally competitive by leveraging its resources to achieve a strong economy. For the State to maintain its competitiveness, a greater shift towards innovation and technology is required. Critical components to this are the State's data and information resources and sharing these widely across government and the community to unlock opportunities for enterprising citizens and organisations. The Shared Location Information Platform (SLIP) has been a key enabler of this in WA since its implementation in 2007 and has contributed to delivering government services better, innovation, and new business and employment opportunities.

SLIP is an integral part of the *Location Information Strategy for WA* which is driving change in the way location information is captured and delivered. To support the objectives of the strategy, in 2013 it was identified that a new improved way of managing and sharing location information was required. The SLIP Future Program is delivering a working, modern infrastructure to manage WA's shared location information. Building on the current capabilities of the original SLIP Classic, the SLIP Future Program will implement an improved SLIP enabler platform by providing a contemporary architecture and design that is more robust, functional and scalable to meet changing demands into the future.

Background

SLIP was originally developed as a technology platform offering single source delivery of Western Australian government agency location-based information. It has enabled multiple government agencies and a number of other organisations to share a wide range of information. Since its inception, customer expectations about the availability, presentation and ease of access to location-based information have changed significantly with the release of Google Maps and Google Earth.

The rapid evolution of mobile technologies, in particular the popularity of the iPhone released in 2007, further increased customer expectations about the availability of information via mobile platforms – expecting access anywhere, anytime.

As a result of these changes in technology and customer expectations, the demand for property and location-based information has grown. At the same time, the software and hardware platform on which the original SLIP enabler was constructed has limited government's ability to use new technologies. To meet changing needs by combining ease of use and mobility with contemporary and efficient systems infrastructure, Landgate and the Western Australian Land Information System (WALIS) established the SLIP Future Program.

SLIP Future will deliver a new SLIP enabler solution that caters for the growing needs of government and the broader business community by providing a single gateway to a wider range of the State's location Information on a more timely and flexible basis. In doing so, a modern architecture and design will provide a more robust, functional and scalable solution.

Through a series of projects over the last two years, a new SLIP enabler platform was developed and implemented using Google's cloud-based Google Maps Engine (GME). SLIP Classic was established using an open source platform as no off-the-shelf solution was available at the time. For SLIP Future, this change in approach reflects the widespread availability of commercial off-the-shelf software and platform-as-a-service offerings now available. Use of a cloud-based platform also improved the ability of SLIP to handle large fluctuations in demand over short periods, and to be scaled-up more easily over time. A range of new products were launched successfully in 2014 and significant progress was being made in transitioning users of SLIP Classic over to the new cloud-based platform.

In 2014, Google announced GME would be decommissioned in early 2016, having a critical impact on the SLIP Future Program. Landgate was faced with the challenge of sourcing an alternative platform for SLIP in the decommissioning timeframe. It was essential to source a solution that preserved the benefits of a cloud-based platform whilst enabling more direct data publishing by agencies responsible for the largest holdings of location-based data.

Current status

The market was, and still is, responding to the opportunity arising from the announcement from Google about GME (i.e. some vendors are considering changes to their offerings, or new products and services to address the needs of GME customers). In light of this, it was agreed to pursue an interim solution leveraging software and services already available to Landgate before GME is decommissioned. The decision was made to progress with a solution that makes steps toward a longer term strategic solution using a common cloud-based platform for Landgate's future spatial maintenance and delivery systems.

Since the development of SLIP Classic as a bespoke solution out of necessity, developers within the industry have worked to provide common off-the-shelf solutions. This will facilitate an easier transition from GME to an ESRI ArcGIS Server and Portal environment, hosted in Amazon Web Services. This is being handled within existing enterprise licensing agreements with relevant service providers and retains the benefits of a cloud-based platform, providing both SLIP Map services for non-expert users, and web services for developers and other expert users.

The transition from GME has also coincided with the launch of the Open Data Policy for WA, for which Landgate is the lead agency for implementation. To support the implementation of the policy, an open data platform (Search Catalogue) that allows the publication and sharing of a broader range of different data (not just location-based), will be required.

This represents an opportunity to enhance the capability of SLIP to accommodate a wider range of data into an expanded information sharing platform to support the policy. This broader platform, hosted by a third-party provider, is currently being implemented by Landgate in consultation with other agencies, the private sector and researchers. The new platform will be made available to the public through data.wa.gov.au before the end of 2015. It is based on the same system being used to support open data initiatives in other jurisdictions such as the Federal Government via data.gov.au.

Next steps

Whilst an effective interim solution for SLIP Future is implemented, Landgate continues to investigate a longer term solution with the aim of minimising the impact on customers. This will be done in conjunction with potential providers and other government agencies to ensure it adheres to the following underpinning principles of the *Location Information Strategy*:

- Location information is only collected once to avoid duplication and made readily available to support functions of government.

- Location information is consolidated and accessed in the most cost effective way through SLIP.

- All current and planned capture proposals of location information using government funds will be provided by public sector agencies to Landgate in order to identify and prioritise opportunities for strategic investment in the capture of this information.

- Benefits of government and industry research and development investment in location information and technology will be applied to create a competitive advantage for WA and to support the State's strategic needs – maximising the value of this investment for the State.

A decision on the most suitable long-term solution should be made by the end of 2015/16.

Conclusion

Despite the challenges that have arisen, customers throughout WA continue to derive significant benefit from SLIP. As of June 2015, SLIP was being used to share 4,000 datasets from some 40 organisations in WA. These numbers will continue to grow as a wider range of data is made available on a more robust and scalable cloud-based platform.

3. Case study – PEXA

Introduction

PEXA is Australia's online property exchange, owned by Property Exchange Australia (PEXA) Limited. PEXA is a secure platform that allows all participants in a property transaction to lodge and settle those transactions electronically, reducing processing time and delivering cost efficiencies. The PEXA platform is expected to deliver gross annual savings to the real property conveyancing industry of up to $250m.[7]

Historically a manual, paper-based process, the financing, conveyancing and registering of real property in Australia has been undergoing significant change. The concept of electronic conveyancing (e-conveyancing) is not new and had been on the national agenda for many years. In 2003 land registries of state governments across Australia agreed to collaborate to develop a national electronic conveyancing system and progress was limited. It was not until the COAG endorsed the initiative in 2009 along with state and private capital investment in 2010 that demonstrable progress was made.

Landgate, on behalf of the Western Australian Government, is now the second largest shareholder in PEXA Limited, holding 13.64% of shares (Macquarie Capital Investments holds 24.90%). Other financial stakeholders include the New South Wales, Victorian and Queensland Governments (with WA the total State shareholding is 37.75%), the four major banks (15.38% shareholding), and other commercial investors (21.97% shareholding).

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[7] *PEXA Digital Property Report: Economic Impact of e-Conveyancing (2010).* Report prepared by PWC, available at https://www.pexa.com.au/files/PEXA_PwC%20E-Conveyancing%20Report%20May15.pdf

Background

Australia's registration of real property ownership, mortgages and other interests is administered by government land registries in each state/territory under the Torrens Title system. Real property participants include property lawyers and conveyancers, financial institutions and land registries.

After the 2003 decision by the states to develop a national e-conveyancing system, the National Electronic Conveyancing Office (NECO) was established with the support of land registries and industry in 2005. In 2009, COAG endorsed the project, including it in a National Partnership Agreement between all states, territories and the Commonwealth Government. It became one of 27 initiatives required to deliver a Seamless National Economy under the guidance of COAG's Business Regulation and Competition Working Group, providing the mandate to drive e-conveyancing forward.

The initiative was accelerated in January 2010, when NECO ceased to operate and National e-Conveyancing Development Limited (NECDL) was incorporated by the States of New South Wales, Queensland and Victoria. NECDL was a public company limited by guarantee to create (but not operate) the NECS.

The formation of NECDL was a major milestone for e-conveyancing and a Board comprising a chair and six non-executive directors was formed.

The company was required to make all of the key provisioning decisions, progress essential national infrastructure to support the system, develop a detailed implementation plan with key stakeholders, oversee the readiness planning of participant groups and have everything in order for an operating company to take over in 2011[8]. Each of the three states contributed $1.67m to NECDL towards the creation of NECS. Landgate, on behalf of the Western Australian Government, subsequently became a shareholder.

In April 2010, COAG agreed with the Working Group's recommendation that NECDL be adopted by all States and Territories as the new legal entity for a national e-conveyancing system and noted that the states and territories had formed a sub-group chaired by Victoria to agree governance arrangements for NECDL and oversee development of nationally uniform business processes and necessary legislative changes.

Implementation of the NECS commenced in 2013, with staged releases across the states. As the legislative framework was established in each jurisdiction, staged releases delivered a broader range of functionality. The NECS platform became operational in WA in June 2014 and fully functional by May 2015. This was a significant achievement for PEXA, with the implementation of full functionality of e-conveyancing across the four major states making it possible for land document transactions online. The roll-out in the remaining states is expected to be completed in two years.

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[8] NECS, 2011, at http://www.necs.gov.au/NECDL-Formation/default.aspx

The PEXA platform provides tangible time and cost efficiencies to the conveyancing industry by reducing the time spent preparing documents, removing the need to physically attend settlement and using technology to reduce the prevalence of errors and failures in land transactions. For practitioners, this means the ability to provide savings to their customers through a direct reduction in costs due to the increased efficiency of their service provision.

Investment history

Landgate's enabling legislation, the *Land Information Authority Act 2006*, defines the Authority's responsibilities in relation to representing the State in the activities of any entity that has land information functions. Coupled with Landgate's statutory objective to generate a fair commercial return for the State on its investments, it was considered appropriate that the Authority represent the State as a member of NECDL. This was supported by the Minister for Lands and the Treasurer in October 2010, and payment of $1.67m was made by the State to NECDL.

In 2011, NECDL was converted to a company limited by shares. Western Australian Cabinet approved investment of $5.25m by Landgate. Along with the four states, the remaining investors were the four banks (National, Westpac, ANZ and Commonwealth), Macquarie Capital Investments and HORDE (company management).

In subsequent capital raisings between 2012 and 2015, private sector investment increased in both shareholdings and the number of investors.

In March 2014, NECDL changed its name to Property Exchange Australia (PEXA) Limited.

Current situation

WA's current shareholding is considered a sound investment totalling 13.64%.

- The value of WA's shares based on the July 2015 offer (of $3.15) has increased on cost by $14.4m to $43.2m.

- The success of PEXA provides a solid platform for Landgate to move forward on its own business improvement and rationalisation objectives. These include harmonising the PEXA system, legislation and processes with Landgate's new land registration system to optimise efficiencies and savings by moving transactions to the cloud and reducing ICT operating and asset investment costs.

An effective model

There are more than 1 million property transactions per year in scope for e-conveyancing through PEXA. It is the only system that is currently being implemented to access all land registries across Australia and interface with banks and practitioners.

Equity participation of the banks anchors the success of PEXA and e-conveyancing as the participating banks are involved in over 80% of conveyancing transactions in Australia.

National e-conveyancing, delivered through PEXA, has raised awareness of the value of registry businesses owned by government.

Conclusion

The PEXA model has demonstrated that a commercial approach and private capital investment is effective in driving the discipline necessary to deliver a complex ICT capability. For conveyancing activities, it has standardised legislation and processes across numerous jurisdictions and registries, and applied modern technologies to achieve improved service, security, integrity and efficiency of Australia's land conveyancing and registering system.

PEXA has opened the door to other potential micro-economic reform in the financing, conveyancing and registering of real property in Australia to improve productivity, capital efficiency and competitiveness of the property market. It has been a catalyst for continued progress toward an entirely paperless mortgage origination and property conveyancing process as part of the evolution toward an integrated electronic marketplace for the exchange of real property. This will facilitate significant commercial and social opportunities for participating jurisdictions and provide savings to government and consumers.

Financial settlement is completed through a secure process involving the transfer of funds from source accounts via the Reserve Bank of Australia to destination accounts. PEXA delivers benefits to all participants: improved efficiency; customer service; flexibility; certainty; safety; security; and transparency[9].

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[9] PEXA Exchange Australia LTD 2014, at
https://www.pexa.com.au/