

Victoria University of Wellington School of Business and Government  
Chair in Digital Government

# LINZ Landonline

A successful digital government case study

Dr Elizabeth Eppel and Professor Miriam Lips  
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This case study was produced with the help of the staff of Toitū Te Whenua Land Information New Zealand (LINZ). It is one of a series of case studies on digital government projects in New Zealand.

See [Case studies | Chair in Digital Government | Victoria University of Wellington \(wgtn.ac.nz\)](#) for other cases in the series

## LINZ Landonline: A successful digital government case study

### Background

Toitū Te Whenua Land Information New Zealand (LINZ), is a government department under the direction of an elected minister of the Crown of New Zealand. LINZ is responsible for New Zealand's land and survey information and stewardship of the systems that record, protect and provide public access to that information, and record changes in ownership. Landonline is the name of LINZ's digital/online property transfer service used by surveyors and lawyers on behalf of businesses and individuals to record property transactions.

LINZ has commenced a five-year programme of work, to rebuild and modernise Landonline. The programme's aim is to migrate Landonline to next generation technology to improve the experience, availability, and reliability of Landonline for customers. The aim includes providing LINZ with the ability to more easily make changes to meet evolving customer needs. To that end, LINZ has decided to focus also on also building an enduring (in-house) capability, able to employ modern approaches such as agile and devops to software development, that will exist as long as Landonline is needed.

The focus of this case study is the first phase of the programme, which included detailed planning, building capability, proof of concepts and resources to begin the rebuild of the technology platform; and developed and began piloting new search and notice services. The new platform has begun to emerge with the new search and notices capabilities which is integrated with and works alongside the original Landonline system and will continue to do so until all phases of the rebuild are completed.

## Landonline

The transaction centre for property professionals and local councils to carry out land dealings efficiently and securely online.

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Data sources for the case study include document review and Interviews with key actors within LINZ during 2020. The research aim was to identify factors leading to the successful creation of the first phase of redevelopment of Landonline. The research focuses on the factors that assisted (or hindered) the success of the project and the lessons learned by the organisation in the process with

the intent that LINZ and other organizations might find them useful. Success in this context is delivering on business goals and producing benefits for the business and its customers.

### The Landonline story

In 2016, LINZ embarked on a rebuild of its original Landonline system that nearly 20 years previously had converted LINZ's paper-based land registry and transfer processes to digital online processing and storage. Online tools and capabilities had evolved considerably in the interim and a new platform for Landonline was needed to replace obsolescent technology.

The planning and preparation for this, consistent with NZ Treasury and good practice guidelines, began in much earlier with development of a business case which included options ranging from purchasing off the shelf services from a single provider to an inhouse development. LINZ's initial inclination, based on public sector policy, experiences and practices of the time, was for an external provider from whom they would purchase a product to meet their needs. This preparatory phase for the new Landonline lasted nearly five years. In this period the initial logic underwent significant investigation, testing and gradually shifted towards preference for an in-house build.

The result of this extensive preparatory phase and testing of options was development of a full Business Case for the new Landonline programme, to be built in-house, which was approved and funded by government ministers (LINZ, 2018) and a detailed business case prepared for what was initially called Tranche 1. In Tranche 1:

*'the legacy front-end Powerbuilder client and Citrix software will be removed, and new modern web front-end interfaces introduced. Landonline's existing business logic and database design will be retained and will be designed specifically for LINZ customer and staff needs.*

*Tranche 1 will also build a public web search capability that is available to public users, current registered users, and staff. The system architecture delivered by the programme will provide more flexibility, security and ability to scale for performance through a transition from the existing 2-tiered client-server architecture to a 3-tiered architecture in which the user interface (UI) presentation, business application processing, and data management functions are physically separated.*

*LINZ's key services will be moved into the public cloud as a strategic move supported by the Government's Cloud First Policy and the LINZ Information Systems Strategic Plan 2018. Tranche 1 to will be used by LINZ ensure it 'is well informed of the risks relating to cloud usage, its security obligations, alignment to with relevant legislation, and awareness of privacy issues.'*

*At the end of Tranche 1, the original Landonline will continue to function via Citrix, Powerbuilder and Datacom hosted infrastructure. LINZ staff, conveyancers, surveyors, and territorial authorities can continue to use Citrix to access and carry out functions as previously. External users can choose whether to use the new search function as the legacy search will remain available meanwhile.*

*Tranche 1 will provide LINZ with proofs of concept to confirm the planned approach for delivery of functionality under later tranches.* Landonline Tranche 1 Business Case

Ministerial approval allowed the development to get underway in 2019. Known within LINZ as STEP (Survey and Title Enhancement Programme), the programme to modernise Landonline is expected to take five years to complete and cost in the order of \$120 million with commensurate benefits (see Table 1). <https://www.linz.govt.nz/about-linz/what-were-doing/projects/rebuilding-landonline-0>

### *Journey to the Business Case Approval*

#### *Clarifying the Goal*

Building the new technology platform in-house initially was a hypothetical ‘counterfactual’ case. It was intended to test the assumptions of what was originally the preferred scenario of an out-sourced online service provider. As work proceeded with the best available external service provider, selected through a tendering process, and benefits and risks of that approach became better understood LINZ concluded that more benefits accrued and less risk would be taken if the existing Landonline system was rebuilt with an in-house approach, rather than changing platforms and outsourcing the system. STEP began life as the Advanced Survey and Title System (ASaTS) (LINZ.govt.nz, n.d) <https://www.linz.govt.nz/about-linz/what-were-doing/projects/rebuilding-landonline-0>. Several changes of name for the development seem indicative of the evolution of thinking within LINZ about what LINZ were trying to achieve as a business goal through the rebuild.

The Government Chief Digital Officer (GCDO) was supportive of LINZ’s move to an in-house build, perhaps reinforced by experiences in other areas of the New Zealand public sector such as education and the teacher payroll which had yielded poor results and large cost and time over runs in the attempt to tailor a generic service to the complicated demands of a government digital service (Jack & Wevers, 2013; Eppel, 2018).

The final iteration of the Landonline Business Case identified the business goal *of*:

Providing a reliable, available and secure platform to:

- improve the agility and efficiency of the survey and title land information services
- enable improved end-to-end processing across the wider property system
- improve the accessibility and quality of property rights information

Providing (business) continuity and making land information services more useful, accessible and responsive

Retaining New Zealanders’ confidence in property rights in a changing world.

The Business case recognised that meeting these goals required LINZ to

- Modernise and de-risk its core IT system through an incremental rebuild
- Change the way it works to deliver better services to its customers and meet its regulatory responsibilities (Business Case)

The present value of the cost of the preferred in-house build scenario was estimated in the approval documents as \$120 million over the full rebuild (See Table 1)

**Table 1: Summary of benefits, costs and capital injection**

<b>Business continuity</b>	<b>Benefits</b>
Continuity of service	Maintained
<b>Non-monetary incremental benefits</b>	<b>Benefits</b>
Faster change cycle	Achieved
Ease of use and automation	Achieved
Public search of survey and title records	Delivered
Improving information	Delivered
Enabling innovation through the use of 3D cadastral data	Delivered
Mitigation of technology risks	Achieved
<b>Incremental monetary benefits to users</b>	<b>Benefits</b>
Reducing time per transaction	\$34.9-45.5m
Providing notice of sale information	\$39.3-45.4m
Providing mortgage registration information	\$42-48.4m
Web search service	\$2.0m
Reducing error rates	\$1.1-1.5m
<b>Total benefits (PV WOL)</b>	<b>\$119.4-\$142.9m</b>
<b>Whole of life costs (PV WOL)</b>	<b>\$98.5-\$120.4m</b>
<b>Repayable capital injection required (85<sup>th</sup> percentile)</b>	<b>\$95.4m</b>

(From Landonline Business Case 2018, p. 10)

The overall goal of providing continuity and making land information services more useful, accessible and responsiveness so that New Zealanders would continue to have confidence in property rights in a changing world was to be delivered by providing a reliable, available and secure platform to:

- improve the agility and efficiency of the survey and title land information services
- enable improved end-to-end processing across the wider property system
- improve the accessibility and quality of property rights information

#### *Involving Stakeholders*

Representatives of LINZ's professional customer base (lawyers, surveyors and Territorial Authorities) were involved in the development of the business case and supportive of the development. Overall, the investment was to enable LINZ to: provide continuity, enhance services and be well positioned to meet future needs. The business case further identified that this required: modernising and de-risking LINZ's core IT system through an incremental rebuild; changing the way Landonline works to deliver better services to its customers and meet its regulatory responsibilities.

#### *Delivery begins*

Tranche 1, which is the focus of this case study, involved beginning the build of the new technology platform, developing some new tools to introduce significant improvements to the way the public

and registered customers interacted with Landonline and providing some early benefits to customers<sup>1</sup>. Key components were:

- Registered web search capability which allows registered customers to move off Citrix (the technology allowing transacting parties to connect to Landonline), and readily source survey and title information from any device. A related public land record search service offering online public access to land records
- Automated notices of property sales for territorial authorities
- Automated notices to mortgagees when a mortgage is registered or discharged.

Eugenie Sage (Minister for Land Information), Kris Faafoi (Minister for Government Digital Services) and Grant Robertson (Minister of Finance) signed off on the Business Case for Tranche 1 in April 2019 and released money for work to begin. As delivery of the new platform and services progressed, quarterly reports were provided to ministers.

The business case acknowledged that the in-house development required new capabilities to be grown and tested as well as new approaches to IT product development. LINZ opted to move towards a customer-centric, agile development method. The business case recognised a large shift that would be required in the operating model and organisational culture within LINZ. Acquiring agile capability and building organizational capability to work that way, which was a break with the waterfall project approaches previously adopted in LINZ and beginning this culture change was a significant focus of Tranche 1 of STEP.

#### *Refining governance structures and practices to suit*

The challenges of overseeing this significant development using agile methods caused LINZ to rethink their governance arrangements. Initially the STEP Board consisted of five of LINZ's Deputy Chief Executives, the CFO and three independent members from outside of LINZ. By the end of the first year the governance board was the whole of the Executive Leadership Team plus the CFO to reflect the fundamental link between LINZ's strategic direction as an organization identified through their 2018 Performance Improvement Framework review (Bestwick & Levy, 2018), the capabilities being built within STEP and the implications for organization and business change. The SRO was also supported by a panel of independent advisors.

By February 2020, good progress on the first Tranche had been made. The new search function and the notices functions were initially piloted then progressively rolled out across LINZ's customers, with Registered Search going live during the March/April 2020 Covid-19 country-wide stay at home period. A consequence of adopting agile delivery methods was that a usable product – a Minimum Viable Product (MVP) — was progressively released to customers as soon as it was ready. This was then added to and improved through user feedback. By March 2020, there were 200 users of the online search function and the user friendliness of the product was noted in the absence of calls for assistance with its use.

#### *Aligning accountability, reporting and funding to agile processes*

During the Tranche 1 delivery it became apparent within LINZ that the idea of sequential Tranches requiring funding requests approximately every 12 months supported by a comprehensive single

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<sup>1</sup> It will be explained later that by the end of what was initially known as Tranche 1, LINZ opted for a continuous delivery rather than continuing with the stepped Tranche approach.

stage business case for tranches of fixed deliverables, as initially set out in the Programme Business Case, did not fit comfortably with agile delivery methods and practices.

LINZ, with the support of Treasury and GCDO gained Ministers' approval for a more progressive approach to accountability for delivery. The joint ministers responsible agreed LINZ needed flexibility to adapt and re-sequence the rebuild work to optimise delivery, as enabled by the Agile delivery approach. Instead of being bound by fixed deliverables and timeframes. Ministers agreed that LINZ could request tranches of funding to maintain programme activity over specified periods. This approval provided planning certainty and flexibility to adjust activity sequencing if necessary. To support this approach LINZ committed to providing the joint ministers with detailed progress reporting (including financial performance and benefits realisation). These reports are provided at the completion of each 12-week delivery cycle. The result was a funding, accountability and reporting approach better aligned with the more continuous delivery approach of Agile methods, as opposed to initial Tranche approach to the drawdown of funding more suited to waterfall projects. It has allowed LINZ to spread out the lumpiness of the work and build and maintain momentum in the build and capability rather than the stop-start of a waterfall approach when funding stops at the end of each section of work while approval for the next stage is sought.

#### *Enhancing and adapting business processes and capabilities*

As a result of the changes agreed to by ministers, work was able to continue into what was previously identified as Tranche 2 while some aspects of Tranche 1 were being completed because funding was no longer restricted to Tranches and the squads had capacity. At this point in the programme LINZ has formed six multidisciplinary squads of typically 10-15 people. Using the SAFe Agile framework, the programme is planned into Programme Increments of 12 weeks, which are executed in 6 sprints of 2 weeks each. Capability within the squads includes devops and agile practices. The squads have also significantly enhanced their capability to work with users, through the addition of user experience, change and customer engagement people to the squads to assist customer uptake.

LINZ have learned internally as well as building agile capability and delivering on Tranche 1 service enhancements, on time and within budget during 2019/20. The success was not without its challenges along the way, for example, the Board deciding to put the Programme into red (which lasted approximately 4 months), to ensure appropriate management support was given to help overcome some emerging issues. One challenge initially was the pace of development going more quickly than change management and planning processes. As the programme emerged out of red, LINZ moved to make the most from the STEP programme. LINZ now see themselves as embarked on a programme of organizational and service transformation assisted by the digital enhancements they aim to achieve through the Landonline rebuild.

There are significant challenges ahead in the work still to be done but organizational capacity, competence and confidence to tackle these has been significantly enhanced through organizational learning new capacities acquired during the Tranche 1 phase. The changes made to the governance processes and the funding and accountability processes have allowed the creation of a roadmap to guide multiple teams to contribute to the next pieces of work. These are reviewed and prioritized quarterly before being turned over to the development sprints of the agile squads. Enhanced processes for user involvement in design and prioritisation are ensuring that what gets built will be used and gradually enhanced through user feedback.



## Success Factors

In this section we use our data sources to illustrate the main contributors to the successful completion of the first phase of this project and the lessons learned by LINZ along the way. Many of these success factors are interlinked but here we have highlighted eleven individually and used the words of our informants to lend richness to the way in which these contributed to success. We have chosen not to number them because that might be interpreted as some being more important. We do not think that is the case.

### Business strategy driven

LINZ had three main drivers for initiating the Landonline rebuild. They were the technical obsolescence of their exiting platform; deteriorating customer experience arising from the technical obsolescence and higher user expectations based on experience of other online platforms elsewhere; and the strategic direction for LINZ's leadership of their policy and operation domain over trusted land information, established by the organization's 2018 Performance Improvement Framework (PIF) Review. The latter was significant in influencing how LINZ approached the rebuild. The organization's response to the PIF review noted:

*Twenty years ago when (the original) Landonline was built it was quite revolutionary because it was one of the first digital projects and it entailed quite a lot of change for the organization; regional offices were closed and things that had been manual were turned digital. It was quite innovative at the time, but then like a lot of systems, it was then largely left. It has been maintained but has never really kept pace with technology. ... LINZ found themselves about 5 years ago having a legacy system that was 15 years old and, with the way that technology had moved, it had quite a few risks and exposures in it.* Deputy Chief Executive Business Transformation.

Recognition of the need to replace out of date and risky technology coincided with a refreshed organizational view of LINZ's future strategic direction arising from the PIF Review with its future focussed, four-year time horizon.

*The 2018 PIF Review has come at an important time ... as we work to advance our ambitious programme to re-position ourselves in an environment that has changed considerably over the last decade. ... we have some major projects to deliver. These include: ... the development of the next generation of our digital/online property transfer service, Landonline; improvements to the quality of location information across New Zealand by 2025. With strong leadership and refreshed priorities we're now well-prepared to deliver these projects and also to take on future challenges.* (Bestwick & Levy, 2018, p. 4)

When the Business Case to replace the original Landonline was being developed there were wider all of government considerations influencing the approach originally taken by LINZ. These needed to be balanced against the benefits and risks for the organization. Time and deep consideration of the benefits and risks occurred at the strategic leadership level of LINZ.

*[When LINZ] originally went to government to replace [Landonline] they were pushed back because [Treasury] said you shouldn't be building this in house because there will be a system somewhere around the world that is better that you can buy or consume as a service. Don't build it in house because government isn't really very good at this stuff. So time was spent looking for such a system. A potential provider was identified in Canada. On the face of it, the product could have been quite useful. The Canadian organisation was trying to develop their system as a service product, but in reality they only had one other customer. Therefore it would have been more of a joint venture than purchasing it as a fit-for-purpose service. This was not something that made sense for a New Zealand government entity. The other thing that was more important was all the discussions internally about the compromises that LINZ would need to make to move to that system, because in reality, our old system was better in terms of its data model, in terms of its breadth and in terms of its complexity.* Deputy Chief Executive Business Transformation.

Shifting the approach to an inhouse development was a difficult decision. It was not taken lightly and ultimately was owned at the strategic leadership level of the organization. It was also supported by changing all-of-government views about the risks involved in digital projects.

*I was looking for a much more convincing argument, not because I fundamentally disagreed with the counterfactual case but I wanted there to be a clearer evidence base so that if someone looked back at the decision down the track it would be apparent that the decision was sound and backed by the right facts. We had to do a bit more work on some elements, but we ultimately did recommend the counterfactual case. There was a shift in political appetite around this time also for what might be done using offshore vendors versus a customised build using in-house capability.* Deputy Chief Executive Property Rights

LINZ were reluctant to overpromise by naming the Landonline rebuild as transformative at the outset, although some thought it could be.

*LINZ put a counterfactual position up and said if we put a team together to build our capability and combine that with our existing knowledge, we will get a better outcome. That was a good thing to do, but more importantly, in the business case, we said to government that we want to change the way we work. We want to build an internal team. We want to use Agile processes and build a capability to not only create the system now but to build a capability to continue to improve it into the future so that we don't have to come back in another 20 years for another \$100,000,000 and do it all over again.* Deputy Chief Executive Business Transformation.

By the time the delivery of Tranche 1 was coming to fruition in early 2020 the organisation had come to accept the transformational potential of the Landonline rebuild as an organization-wide challenge.

*We also want to work with industry to co create what works for the sector, which wasn't necessarily done before. It is not just being seen as a technology refresh or rebuild. It is also being seen as a genuine business transformation of LINZ, wrapped around or enabled by a technology rebuild and DCE has been made responsible for that. The expectation is that we will start delivering on the role LINZ plays in wider expectations of government and the property system we steward for New Zealand.* Director Engagement

As the development has progressed, business owners internally have become more intimately involved in the planning, designing and prioritisation of the Landonline rebuild based on user feedback. What gets done is prioritised based on feedback and consequently and business owners are better placed to consider the implications for interfacing business as usual.

*There is a Business Owner for all of Survey ... He is now spending a lot of time with the survey-focused squads. He attends their stand-up meetings and he is across their journey boards and feeds into all their story boards. He is embedding himself in the squads and his focus is always on the business on behalf of our operational teams and our customers and what this means.* Product Manager Landonline

### Collaboration, Codesign and User/customer centricity

The Business Case and the ongoing development were informed by engagement with Landonline users.

*We did a survey of all our user groups, solicitors and surveyors in particular, in 2014 to gain their perspectives, needs, and their pain points in what was then going on in their particular worlds. Then we formed an engagement team, with ... a consulting solicitor and a consulting surveyor from private practice. We had learned the need to do that from the original build of Landonline. We brought them into the programme team then we formed up a group of about 12 solicitors and 12 cadastral surveyors from around the country. We have now been working with them for number of years. ... We get them together every three months and show them what we have built over the last three months and get their feedback on that. And then we share with them what we are planning for the next three months and their priorities on that. We are trying to make sure that we are very customer-centric in what we build and release.* Director Engagement

Becoming more user/customer centric has involved organizational learning about how to do this and the new capabilities the organization needs to do it well.

When we didn't have enough end-user focused capability in the team in the beginning, it became very clear. As soon as you put that capability in then the pace at which things start moving, the confidence of the team and delivery improve markedly. Human-centred design rather than user-centred. Chief Digital Officer

*They are much happier when they see things. ... A good example is the cadastral survey plans ... It is currently about 70% digital and we said, 'can we make it 100%?' We described it and there was some reluctance from surveyors ... We built a prototype that was fully digital. And you just pull it up on a laptop and you can whizz around it any which way you like. We put that in front of surveyors and our customers they said yes we get it; we understand it and its exactly what we want and we can let go of some of those other things. Director Engagement*

There is also internal collaboration between business owners and digital to produce what the organization needs to do its job.

*...talking with the executive and business arms, I am not going to tell them what we are building; they have to find a way of telling me what they want built. Then I will try and find the best way of delivering that as soon as possible. Product Manager Landonline*

Feedback from customers as the product is rolled out both allowed the product to be improved but also provided heart and encouragement to the developers that they are on the right track and building a product that is valued by customers.

*We get positive feedback from happy users. ... We have even had videos with a customer sending us a video about how much they like what we have built. That is greatly encouraging and being able to report that to the executive or even the Minister to show that you are on the right track and that you are talking to your customers, your customers are enjoying using what you are building and you are delivering value from the customer's perspective. We have been really working hard to bake that into what we are doing. Product Manager Landonline*

### Organizational openness to new ways of working

The decision to rebuild Landonline in-house necessitated some rethinking of how LINZ organizes itself internally to do things and who is responsible for what. They developed an internal collaboration between business owners and the digital team as strategy for ensuring that what gets built is owned and other business processes get adapted appropriately. How they did this was informed by the Scaled Agile Framework (SAFe) they decided to adopt as a proven model.

*Inside that framework there are three key roles to help run the thing. One is the Release Train Engineer who is charged with how we do things; they are responsible for the framework and the product teams in the organization and Scrum masters tree up to them. We also have a Product Manager who worries about what we are building, the features, what it's for and what it needs to do. The Product Owners and the BAs and customer experience people roll up to them. Then the System Architect is the technical lead, so I worry about how we are doing it. The developers, test automation, architecture, security, dev ops all that sort of stuff. Chief Architect and System Architect*

*... We have this slight matrix model operating... One of the things we decided as we set up the capability to deliver the programme was that we didn't want it to be this thing out on the side of the organization, we wanted it to be core, so we gave everyone a home manager and a functional manager* Chief Architect and System Architect

The organization also needed to be open to reviewing its existing business practices and new ways of being more consistently customer centric across the organization, not just in the Landonline rebuild.

*We realized through the PIF and our desire to be more customer-centric that we needed to get closer to our customers and engage with them better and that needed to be consistent across the whole of LINZ. So I [now] run the customer engagement group for the whole of LINZ.* Deputy Chief Executive Business Transformation

As the Landonline rebuild proceeds and becomes operational, it throws new light on business as usual and organizationally entrenched ways of working. Sometimes these might be things that matter to the integrity of how the system as a whole works, and therefore warranting serious consideration of how system integrity will be retained. More often they are practices buried in (often long) history. A new technology application becomes an opportunity to consider whether they are still needed and the most efficacious.

*LINZ has been doing what it does for a long time and the survey and titles domains are nearly as old as New Zealand. The recording of land purchases and ownership, and transfer of titles goes way back and the way it is done is entrenched, legally and procedurally. Sometimes LINZ hasn't thought about the ways some things are done for quite a while. Like we launched a new search portal: You go to the website, you log in, you search for a title, you download it, job done. But it triggered so many policy reviews: 'Should we be doing this?' 'And who actually owns that business process?' – type discussions.* Chief Digital Officer

Consideration of such questions can extend into how the organization is organised to do its business and clarifying who has decision making authority over what. While the need to consider these things might be raised in the governance of the project, the organization needs also to follow through operationally to adapt as required.

*We didn't have that concept of a service owner. Who owns a service and decides the rules of the game, who are the customers?, how do we know? Do we do it through channel A or channel B and where is the service heading? Within LINZ we have a regulatory arm and an operational arm but it wasn't clear who then owns the system in practice. The regulatory people work with the legal parameters of the system while the operational people are responsible for the business processes. So if we create a new interface for Solicitors to come in and change titles, who we work with internally, as the system owner, is unclear. As an organisation we are already undergoing some changes to respond to that kind of dilemma. We have recently appointed some Business Owner roles. You have a*

*Product owner who works with users to design and build, and we now have Business Owners who are responsible for the Business change acceptance. But I am not sure that its the Business Owners who are responsible for making a decision that the organization will now stop doing A and will start doing B. That kind of decision would likely need to go to the executive team. To support organizational transformation occurring the first time we need to make one of those kinds of decisions, we will first need to design a process for doing so.* Chief Digital Officer

### Agile Delivery Method

LINZ made a decision to adopt an Agile approach to its inhouse build of Landonline because they considered it fitted with the customer-centric focus they wanted to adopt.

*The benefit of going the Agile way is that you put a lot more emphasis on the business and what the business and its customers want. ... Agile is more about when you have a problem, bringing technologists and business people together to jointly solve it. It's about getting software in front of customers as quickly as you can and learning from mistakes while you are developing.* Deputy Chief Executive Business Transformation

Agile offered a way of managing the unknowns and the risks involved in rebuilding Landonline while supporting business as usual. Adopting an agile delivery method enabled an incremental approach to building fit-for-purpose in-house capacity and using customer/user insights to inform the development. The incremental approach applied to both the organizational capacity and know-how, and the deliberately modest size and complexity of the initial development tasks.

*[Tranche 1] was ... about us adapting this new way of working and recruiting the new capabilities we needed to do it. Getting the squads in place and the organisation learning how to work in this new way. A fair amount of effort has gone into that start up challenge and showing that we could do it. We chose a couple of functions around the periphery of the main Landonline system. Notices and Search were two customer-facing functionalities that people had been asking for.* Director Engagement

Agile also enabled benefits to be delivered progressively along the way, rather than waiting some years for a fully re-developed system to be launched to realise those benefits. It also enables an enduring capability for responding to LINZ's changing environment.

*What we are doing with agile is to break the work down into a 3-monthly cadence, then its further broken down into 6 sprints of 2 weeks. Through that we try to maintain our currency. ... one of the approaches is to have a minimal responsible product ... set ourselves the challenge to release that [to users] and then we enhance the product after that. Then if the environment changes, or something else changes, we can be much more reactive. We have only allowed ourselves that much planning ahead and that rapid adoption of what we are doing. You are always reprioritising what is in the backlog to maintain its currency ... it's been a massive change from promising stakeholders that we are going to*

*do something for them, to actually delivering some products out the door.* Director Engagement

*I hadn't really appreciated what a difference it was making to work in this agile way. You sort of have to shift your head to why you are doing it and leave all your preconceptions of what you do and don't like and embrace the fact that .. planning the work in those 90 day increments, two week sprints, and having talented developers, you can test what you are actually developing all along the way, and allow time before you give it to all of your customers. You actually place huge value on the customer experience. It is so different from waterfall which is happening all in a box with a technology team and pops out the other end and you only then to find that it is not fit for purpose.* Deputy Chief Executive Property Rights

*One of the weaknesses of the current Landonline system is that any change is a big bang. All our customers and solicitors get the change at once and there is no opportunity to fine tune before going live. ... One of the advantages of the agile development and step release programme is that we don't do big bangs. We try to do small pilots to get feedback as part of the agile methodology. Then we design and build the software so that we can gradually switch on more and more users and more and more customer groups or stakeholder segments. So that has been built into the new system and that is what we are doing. For example, our new Notices service is being piloted in Tauranga and in a few weeks we will switch on Wellington. Eventually we will get to Auckland and Notices development back is pretty well broken at that point and so on until the roll out is national. Then it is more a matter of maintenance and support for that product.* Project Manager Landonline

Multidisciplinary development squads have been recruited to provide the capability to build quickly and well to meet user needs and work with end users on adoption.

The development team gradually expanded to include User Experience (UX) people, change and customer engagement people who brought the skills of making the product look good and work well for the user. The User Experience people are thinking about the experience of people using the tool and the marketing people are thinking about the experience of people inside and outside the organization going through change as a consequence of using the new product. Chief Digital Officer

The Agile approach has also allowed LINZ to pause parts of the development when needed to build social licence within the organization.

*we could pause [a] particular milestone.... We didn't stop altogether. We just put our efforts into another train while we idled that one to work through the issues.* Chief Digital Officer

Agile ways of working and new technical capabilities also assisted LINZ to continue delivery under the extraordinary circumstances of the 2020 Covid-19 stay at home period.

*We lost only a little bit (of progress). Most of our team are set up with laptops and we have pretty good connection back into the LINZ environment. People were able to take gear from the office, set up at home and get set up and working pretty quickly. The other thing was would our customers continue to be able to integrate with us. That continued to happen: the lawyers and the surveyors were able to set up at home, and carried on the BAU work.* Director Engagement

### Fit for Purpose Governance and Accountability

The initial governance process for ASaTS and STEP involved only a subset of LINZ's senior executive team and some external digital governance experts who operated as a governance board. This arrangement risked overlap and conflicting responsibilities and accountabilities with the organization's Executive leadership team. Gradual wider organizational realization of Landonline's transformational potential prompted a rethink about its governance. The original governance process was reformed to take account of Landonline's affect the organization as a whole.

*The original governance boards had three independents but not all of the Exec team and the Chief Executive of LINZ wasn't sitting on the governance Board.... In the first phase of the project we were very successful in attracting people to come and work with us on the project, learning agile, building squads, getting them working and getting them working with external customers, but we got a bit disconnected from the internal business. That was partly because STEP was this new thing happening out here [on the margins of the organization] as opposed to this is about changing the way we work as a whole organization. ... STEP would have successfully replaced Landonline if we had carried on that way, but it wouldn't have achieved the transformation of the services we provide to industry and the way we work as an organization.* Deputy Chief Executive Business Transformation

*Our executive team have come much closer to the programme When we were building the Business case there was less need for all of them to be close. Now that we have the approval and there is realization that we must do it for strategic outcomes, the Programme Board has changed. The Board is now all of our Executive Leadership team: one of the DCEs chairs; the CE is always there, and they take a very high interest in the governance of the programme.* Director Engagement

External and independent, informed views are sought and welcomed.

*The external members of the [original] governance Board that we had were quite good at challenging us. It's important so that we don't, as the expression goes, 'just keep drinking our own cool-aid'. We do need that external check.* Deputy Chief Executive Property Rights



The benefits endowed by the independents on the Governance Board remained under the new governance arrangements through continuance of the independent quality assurance processes and an external advisory group to the Executive Leadership Team and the Programme SRO.

*The first is an independent IQA process that reports to the Exec team; the second is that over and above that, but less regularly, we use the Gateway Review process to provide an assessment of the progress of the programme. As well, an external advisory group of four people will oversight the development and give me advice.* Deputy Chief Executive Business Transformation

*Independent QA ... is giving us assurance that we are delivering on the goals we have set for ourselves or do we need to recalibrate.* Deputy Chief Executive Property Rights

LINZ also embraced the potential of the Gateway review process to provide independent advice and critique of their thinking and capacity to achieve their endpoint goal of replacing Landonline and achieving against the transformational challenges set out in their PIF review.

*When we went into that Gateway review a few months ago we said the questions we want you to answer are, 'is our thinking right and are we doing the right things so that we will up to scale and moving fast'.* Deputy Chief Executive Business Transformation

As well as changing governance processes to fit with agile delivery methods, the organization needed to convince Treasury and Ministers of the need for different arrangements for accountability reporting and funding drawdowns to match the more continuous deliver of an agile project.

*The SRO and others have done a lot of work with the Treasury and joint Ministers to allow us to get our funding in a more agile manner. As long as we can show we have been successful in the delivery to date and have a near term plan for the next steps in the development, then we can keep drawing down the sums as they are needed. ... The saving grace was the original business case that said we think it will be about five years; we think it will cost about \$120 million; this is what we want to achieve and why. Having that whole programme approval up front is far better than just having single stage business cases and then not knowing where your next money is coming from. It means that you can't hire people; you can't offer your people permanence; all your contractors end on the same date.* Product Manager Landonline

*We went to our Minister originally and then the other two that make up our governing Ministers and said this approach doesn't work from an Agile point of view because we now have parts of the programme in Tranche one completed and we are ready to get on with the next piece of work but we are stalled for want of funding, while there are other parts of the work where we need a little more time and money to finish the work, but overall we are about where we said*

*we would be at the end of tranche one if you balance it up. I said if they accept that they have already nominally allocated \$128 million for this Landonline rebuild, then we shouldn't be doing new business cases for each tranche, nor should they be accepting that they only find out how this project is going every 18 months. So we are now working in cadences of three months and we give the ministers a more in-depth report at the end of each three month period ... and when we need to draw down more money against the total allocated to the project, which will be about every 18 months. We have just been to them to draw down money at the end of our first 18 months work and as part of our Tranche 1 reporting. That was about a six-page memo, including a report of what has been achieved, our financial position and the money we needed to draw down for the next 18 months work.* Deputy Chief Executive Business Transformation

### Communication

Making efforts and taking time to ensure all stakeholders are onboard is recognised within LINZ's executive team as something that you almost can't do too much of.

*... we realised we were too far in front of the people we need to have on board. We were ready to push stuff (a Minimum Viable Product - MVP) out the door and we were having parts of the organisation reacting quite viscerally to that. We had to start talking to Unions and stuff like that because we hadn't been communicating. Or rather the communication we had been doing hadn't been landing enough or wasn't good enough to be picked up and understood.* Chief Digital Officer.

### Facilitative leadership

More collaborative and agile ways of working have also demanded a different kind of leadership within LINZ which they describe as facilitative. It included senior executives finding ways to allow people working in development teams to take risks and make decisions within certain boundaries (guardrails) without having to first get permission from higher up the chain. The potential for a mistake or what was retrospectively seen as a poor decision was limited by the parameters of the guardrails and the ongoing stocktake and review processes of the agile methods used. This was a fundamental change in organizational mindset/approach.

*There are two things the organization has had to learn (and the learning has not yet finished) is the empowerment to go and make decisions. In government you get quite a few people nervous that they might get told off ... so there is often a lot of conservatism. Allowing people working on a problem to see an answer to a problem and just going for it isn't always comfortable. Allowing them that freedom but having some 'guardrails', we are calling it at the moment... Minimising the blast radius while also saying go and do this thing. Minimising the downside risk - If it blows up it is only going to be 2 weeks or maybe six weeks work or ten customers or whatever. We are trying to find a way of doing that in a way that everyone can buy into.* Chief Architect and System Architect

*One of the things the Home Manager does is give a person another perspective on the things they are doing and what they are trying to achieve. They come from that team with a licence to operate. So the security guy comes into the development squad from the IT security team, with the trust of the IT security manager and he is able to do things, and say things and decide things, And the security manager knows that he is not going to go feral and approve things he is not going to be comfortable with, but at the same time we get rapid decision making and tight integration back into the security space. That model works well with a variety of those disciplines.* Chief Architect and System Architect

### Change management and fit-for-purpose internal capability and processes

Change management is a focus within the squads building Landonline and also an internal organizational focus. That is the organization has realized that it is not the technology alone that is changing but the organization is also changed by the technology and must be prepared to adapt and operate differently if full benefits are to be realized.

*We didn't want the transformation to become the new LINZ versus the old LINZ. It was more about LINZ moving forward as a whole. So what we have done is in the business transformation group I have a change enablement team who just work on the STEP stuff which is the most important thing but they run this community of practice on how you manage change for the rest of the organization.* Deputy Chief Executive Business Transformation

A longer term, capability-building view is taken in thinking about the capacity needed internally to build and maintain Landonline.

*We are very cognisant that we are not here just to replace Landonline, we are here to create a capability that is going to serve us for the next 20 years.* Deputy Chief Executive Business Transformation

Internal capability and people who understand the business and the size and dimensions of the technical and business change challenge should be treasured and used well.

*We have a few really good people who think this way. We have learned a lot along the way. Thinking that a plan will work because it looks good isn't enough. But it is a multi-disciplinary team, multiskilled who work in the culture of a team recognising the diverse strengths of each individual in the team which had a culture of 'we' not 'I'.* Chief Digital Officer

Having the necessary internal capability seems obvious but recognising when you don't have it and strategizing to change that is perhaps even more important.

*When we started to do this ... there were one or two pockets in parts of the organization doing things but organizationally we didn't have capability. So we*

*had to start from scratch and that is both a blessing and a curse. The blessing was that we didn't have any existing practices we had to try and change. We didn't have any strong enterprise teams certain that thought their way was the right way or a tech staff that were somewhere between good and not good. The curse was that we had to go and find people and back ourselves to find the right ones.*  
Director Engagement

*If you look at the makeup of squads now, versus what we thought two years ago, there is definitely a richer set of people working in there. For instance, in the original design we didn't have a UX (user experience) designer in the squads. It turned out pretty quickly that UX was something that LINZ did not have much expertise in. If you are going to do agile and you are going to build modern systems, then you need UX right from the start of the process. So we now have two permanent UX designers working across the squads and helping with the design of their screens. They are driving things like wire frame tests with focus groups from the general public or from the Law Society. So Right from the start they have helped us with the show of work and the show of screens, where buttons are placed and all that sort of stuff that we now have complete control over.* Product Manager Landonline.

It also requires the time, patience and resources to get the right people with the capabilities you know you need and the organization treats this as a sound investment in longer term capability building.

*... to bring the development programme in house required us to build a spine of internal capability that would last us for the next 10-15 years. ... I am charged ... to build that capability and practice not just for the immediate project. It takes time. ... We are a government department. We prefer permanent rather than contractors. We like to try and find them ourselves rather than using recruitment agencies. I have just had an advertisement out there for 19 development positions as we scale. We had 425 applicants. Someone has to read 425 CVs and be able to justify the decision we make on each one of those 425 applications. Then we have to take enough through on our long list to have a first round from which we will probably take about half through to the next stage. In the final interview we might reject about three quarters. It's like panning for gold. From the 425 will we fill all 19 roles?* Chief Architect and System Architect

New governance and accountability processes have also required new internal processes for getting sign off on each cadence of work and prioritization.

We didn't have enough experts (users) on early enough, or enough diversity in the squads. It was only when we brought in a Release Train Engineer that we began to get on top of that, along with some senior agile developers and agile business analysts; who were able to say, you need to be doing this. And for

everyone else to listen as well. Now that we have some runs on the board, they get listened to earlier. *Product Manager Landonline*

### Transparency and feeling your way forward: Learning from your past and as you go

Part of communicating about the project means being as clear as possible about what you are trying to do and why, with all stakeholders, and taking them with you. Risks and stumbling blocks need to be faced honestly and dealt with appropriately.

*We definitely had crisis points. ... a bit of a stalemate: we weren't empowered to move forward [internally]. We had to convince people (in house) that we were doing things the right way, while customers/users out there were ready to go. They were ready to go but others didn't know that – there wasn't enough togetherness on the journey even though we thought they were. We thought we had been communicating and then all of a sudden there was a big roadblock in the way, and everything was a problem.* Chief Digital Officer

Related to that is recognising when you need some new capabilities and adding them.

*Early on we realised that we needed change management as a function in our squads. So now each squad has their own embedded change person in there who thinks about customer co-ordination, business surveys, gets on the phone to users of the platform and helps drive the design work with the UX people. We learnt that during the star up phase. We hadn't predicted that we would need those people in the squads. We had thought that we would just use the shared engagement people within LINZ but that turned out not to work. They couldn't get close enough to the users needed by each squad.* Product Manager Landonline.

### Taking risks with eyes open

There are many unknowns at the outset of a new digital development. The process of doing a thorough Business case forces some discipline into an organization's planning. It identifies risks including capability gaps as well as acknowledgement of unknowns. LINZ senior leadership group committed considerable time and resources to this part of the process in which they actively confronted their unknowns and eventually, with the best knowledge they had at the time, reassessed their risks and changed their intended solution.

*We did a big go-to-market to find a vendor who could deliver us a new platform to replace the current Landonline system. ... We managed to find ourselves a large overseas vendor and were doing our best to make things work with them. ... It was a big Vendor and it was all specs and design requirements. We got to the stage where we were ready to sign a contract to build and we wanted to put this decision into some context so we wrote a counterfactual position: what would happen if we didn't have this vendor? What would be the fallback plan? ... [It] was let's just hire some people and get on with it. The Agile thing was gaining steam;*

*the Governments Chief Digital Officer's people were beginning to talk about it more stridently. We thought, ok let's write that scenario up and we did. .... It eventually got to the point when it looked like more of a neck and neck race and the Board had a very difficult time. They carefully thought about it and then decided to go that way. We said goodbye to our big overseas vendor and started building the capacity to do it in house.* Chief Architect and System Architect

There is willingness to take some calculated risks, try new things and do things differently

*We have done some things that LINZ hasn't really done before. We have gone out to a whole bunch of users and sat in their offices. We have taken a bunch of programmers out to meet customers to talk through what the programmer has just written for them because they are going to be using it as part of the pilot. The customers and the squads really like that. ....o we have been really working hard to bake that into what we are doing.* Product Manager Landonline

LINZ have also been wary about not trying to run before they learned how to walk in their digital capability building and adoption of Agile methods

*We had a good Executive discussion about how far we wanted to go with Agile. Where we landed was, we don't want to say that from Monday everything we do is Agile because that would detract from what we are trying to get done [through STEP] and would be too much to try and do at once and would actually slow the organization down.* Deputy Chief Executive Business Transformation

### Focussing on results and benefits

During the digital development, the governance group and those doing the build are very focused: they know what success needs to look like; challenges and risks are addressed as they emerge; and successes are acknowledged.

*It's been a massive change from promising stakeholders that we are going to do something for them to actually delivering. .... Our clients need to be able to electronically interact with LINZ on a continuous basis. And because we are a land registry, there can only ever be one point of truth. There can be only one title for a piece of land to create certainty of ownership. You can't get that stuff wrong.*

*We have proved that we can apply the methodology; and we have got some working software out the door. ...The new products we have developed so far don't interfere with the way surveyors and lawyers are working whereas in the next couple of products will. If a lawyer is doing a transfer of property, we can't stop that process, the plane has to keep flying as we rebuild so to speak. So we have to be able to maintain the currency of the lawyers and surveyors being able to do what they need to.* Director Engagement

*We get positive feedback from happy users. We have even had videos with a customer sending us a video about how much they like what we have built. That is greatly encouraging and being able to report that to the executive or even the Minister to show that you are on the right track and that you are talking to your customers, your customers are enjoying using what you are building and you are delivering value from the customer's perspective. And so we have been really working hard to bake that into what we are doing.* Product Manager Landonline

Benefits and results are not just now but have eye on the future and avoidance of future technical debt.

*That is a capability that can operate and enhance the system to meet needs in a way that we have not done in the last 20 years. We build a system 20years ago. We put a maintenance budget against it without significant enhancements. We essentially built it over five years and then just left it. This time we want to have the capability to continue to enhance and develop the system, so we don't end up in the same situation again. That is the goal.* Chief Digital Officer

### Lessons for Practice

The researchers asked each of the people interviewed what they had learned in the process of delivering the new digital government services involved in Tranche 1 of the Landonline rebuild, that was important and contributed to its success. These thoughts are collated here as LINZ's participant lens on the Landonline Tranche 1 success factors we have identified above.

- 1) Get your governance right – *we didn't have this right at the beginning.*  
*Moving the governance to be our executive team: getting that total buy-in and getting them actively involved has created a level of alignment and drive that is critical. ... STEP is now an integral part of the business and what we are doing, and all of the Exec team feel that they own the outcome. When we had a Gateway review done a couple of months ago, one of the highlights they noted was the alignment among the Chief Executive and the Executive team Deputy Chief Executive Business Transformation.*
  
- 2) Grow or find the capabilities you need to deliver with the right range of domain knowledge and specialist skills.

*developing the ability to move the programme in house and developing the capability by bringing in new people to supplement the domain knowledge. The combination of people in the building who have domain knowledge and understand what is involved in land registration, coupled with the resources we have brought in, whether they be developers, change managers, test engineers, scrum masters: That combination of people to produce the outcome we seek has been working even better than expected. That is a pretty neat learning and something that we can build on.* Director Engagement

*If you want to be empowered, and we do, then you have to work hard to get the right people in your teams (both breadth of skills and quality).* Product Manager  
Landonline

- 3) Get everyone on board and take all your stakeholders with you. That includes people inside the organization itself

*The sign on and buy-in process from all of the partners is a lot more important than we realised. ... We took a programme business case and then wrote a Tranche one single stage business case for tranche one; we shopped it around and people said yes, probably without really understanding the impact of saying yes. Then we went off and tried to deliver what we said we would do, and we found that not everyone we needed was ready. So lesson one is take your stakeholders along with you and don't assume because your documents say so that everyone is on the same page.* Chief Architect and System Architect

*Take the organization along with you. .... Make sure that the organization and all the other parts of LINZ that you rely on for your permissions to release are fully on board: whether it be legal, financial, regulators. That has been quite a learning: to make sure that we are fully integrated with the rest of the organization and not just a project island.* Director Engagement

*LINZ learned the hard way the consequences of not taking everyone on the journey. When it becomes real that you have to deliver, people react differently to that change from 'we gonna', to 'here it is', now you have to do [whatever change is required].* Chief Digital Officer

- 4) Learning how to engage with customers well and support change management takes energy and time

*Some of the early activity was a bit more about information sharing than participatory or codesign approaches.... It is not just consulting. There are many techniques you can use, and you need to go broad and include what are the roles for the executive team in that. [Initially] it was just a small team going out to the many just at one level. ... Now have the right senior roles in place to boost both the customer piece and the change piece. Those bits were initially underdone. I think you have to stand those bits up properly at the get go. [Initially] building the widgets got ahead of setting the engagement and change management] programme up properly.* Deputy Chief Executive Property Rights

- 5) Empower others

*... that notion of servant leadership is more powerful than you can possibly anticipate.*



*You tell me what you need and I will go sort those things out; otherwise I trust you to get on and do it. You see things flourish in front of you because people want to do good things. And they do, if they have the right conditions created for them. Creating that space and watching it grow was awesome.* Chief Digital Officer

- 6) The creative power of bringing in new skills and perspectives to supplement existing domain knowledge and expertise in the organization

*The combination of people in the building who have domain knowledge and understand what is involved in land registration, coupled with the resources we have brought in, whether they be developers, change managers, test engineers, scrum masters: That combination of people to produce the outcome we seek has been working even better than expected. That is a pretty neat learning and something that we can build on.* Director Engagement

- 7) It all takes time (and longer than you might hope for)

*It takes time to build teams. It's one thing to write that by Q1 you will have recruited 20 people and by Q4 you will have 40 in these teams and they will be up and working away and another to actually get there. It takes time to and a lot of effort to recruit the right people.* Chief Digital Officer

- 8) A well written programme business case to act as a vision and a communication reference point combined with the flexibility to adapt to changing demands.

*Agile doesn't meant that you don't have a plan; but it does mean that you have to be prepared to make changes based on the feedback you are getting from customers. Anybody can write a plan because all a plan is, is the best guess of the collective at that point in time.* Deputy Chief Executive Business Transformation.

*It is very hard to see the future which is one of the reasons we prefer to use agile rather than multi-gated waterfall. In the business case we had to assure ministers (and their advisers) of what we were going to achieve to justify the money they were going to release to us. We had a relatively modest scope for that tranche. We said we are going to build a search product; we will build a website and people can log in; we will build some public APIs so people can do system to system interactions and that meets all of government open digital economy sort of stuff. We will do these Notices things and insert ourselves to solicitors' and territorial authority processes around change we didn't deliver that scope. Not because we were not able to but because people's feedback told us that we shouldn't. For instance we didn't deliver public search APIs because when we talked to all our likely consumers of such an API, they all said well we are not really set up to use one. We just want a much nicer and easier to use UI (user*

*interface) for our people to use. So we spent more time on that. So even at the small level of scope, delivering what people want to use requires some flexibility.*

*Under the old way of planning and delivering you would have been constantly justifying our change in scope. One of the reasons for moving away from the tranche approach is that we can look at the things to be done to get to where we need to be at the end of the project but we can do them in the order that makes the most sense to the users. And that is OK because we are not committing to 12-18month blocks externally.* Chief Architect and System Architect

- 9) Remember not just what you learn along the way but how far you have come and the benefits realized from those efforts.

*It's really good to remember along with everything we have learnt, what we have put out there is really nice. The feedback from end users is overwhelmingly positive. Everything we do is based around outside people using the product and liking it; it's easy to use and I understand what is needed to do something. No call through the contact centre asking for help – all these cool indicators that we have a good result.* Chief Architect and System Architect

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