



## INNOVATIONS FOR SUCCESSFUL SOCIETIES

### EMBRACING DISRUPTION: TRANSFORMING WESTERN AUSTRALIA'S LAND AGENCY, 2007–2017

#### SYNOPSIS

In January 2007, Western Australia's land agency began a top-to-bottom overhaul of its structure, management, and service delivery. A booming property market, fueled by the state's extractive resources industry, had overwhelmed the public agency's aging technology, but budget constraints hindered its ability to upgrade the systems. To provide financial flexibility, the state government created a statutory authority called Landgate—a public institution with some private characteristics. Landgate could keep the revenue it generated from regulated services such as property registration and engage in for-profit commercial activities, which provided resources for investment in better services. But making the new model work was not easy. Landgate's management team had to win the trust of skeptical staff, reduce delay, and contend with a sharp drop in revenues only two years into its existence when the 2008 global financial crisis struck. To surmount the challenges, the agency created an innovation program, explored ways to commercialize its spatial data, restructured to speed up registration and cut costs, and after one failed attempt, developed an automated registration system. By 2017, Landgate had become financially stable, had drastically reduced processing times, and had won acclaim for its innovative products and management practices.

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#### INTRODUCTION

In June 2015, Western Australia's land agency, Landgate, accepted, examined, and registered a typical land transaction in 23 seconds—a process that could have taken up to six weeks a decade earlier. The launch of the agency's automated registration system represented the culmination of nearly 20 years of efforts to computerize land registration in the state of Western Australia—efforts that had

transformed not only the registration process but also the institution responsible for it.

Almost two decades earlier, managers at the state's land agency, then called the Department of Land Administration (DOLA), recognized that they had to upgrade aging information technology systems—especially those delivering the title register and survey plan system, recalled Bruce Roberts, who joined the agency in 1991 and

became Landgate's general manager for operations in 2011. DOLA was responsible for collecting and managing land information—from ownership to property values and cadastral maps—for a state that covered nearly a million square miles, or about a third of Australia. Most of the agency's work, however, was concentrated in the southwestern corner of Western Australia, in and around its capital, Perth, where the vast majority of the state's population lived and where the state's thriving mining industry was driving investment in real estate.

The vast amounts of information the department handled and the volume of transactions it conducted using a paper-based register demanded a more efficient system to store, process, and disseminate registry information. A modern, fully computerized title and cadastre system would facilitate faster registration, give easier access to land information, and improve data security. However, getting the funding required to build such a system was not feasible for the department, which had to compete for budget allocations with more-visible services such as public safety, schools, and health care, Roberts said. Furthermore, even if DOLA could get funding to build a new IT system, it would still have to pay for maintenance and upgrades.

The need for major technological changes, coupled with the budget uncertainties, motivated DOLA's leaders to explore institutional alternatives. "The question for us was how we could set up an entity that was effectively self-funding . . . so we weren't in a position of continually going back to government with our hand out," said Grahame Searle, who was the head of DOLA at the time and became Landgate's first chief executive.

In 2001, Searle and a small policy team at DOLA proposed transforming the department into a government trading enterprise—a for-profit company owned by the government. But others in government were skeptical of that model. "There was huge pushback," Searle said. Agencies from emergency services to local

councils were concerned about price increases for work such as customized maps that DOLA provided below cost. In addition, turning DOLA into a government trading enterprise would entail major changes in public servants' employment contracts and could lead to management choices that the government was not comfortable with. As a trading enterprise, "We could increase the prices, we could deliver a different service, we could reduce our staff, we could take it offshore . . . [and those things] were not an option with the government of the day," Roberts said.

Instead, the government and DOLA eventually agreed to create a statutory authority—a hybrid model with both public and private characteristics. The compromise provided the financial flexibility Searle and his team sought, but the government's greater oversight made the model more palatable to other officials. The state continued to regulate prices for core services such as registration and valuation, and the new authority would still provide discounted services for other government offices—paid for by a state budget allocation. But the new agency could also develop and sell commercial products and services, and it would be responsible for funding its own operations and investments by using fee-based revenue and commercial profits—enabling it to build any new IT systems it could afford.

At the time, Searle said, "we were swimming directly upstream" because the state government was trying to reduce the number of statutory authorities. The policy group put together a convincing business model, however. The key, Roberts said, was demonstrating that a statutory authority would be able to "feed itself"; that is, fee revenues would be sufficient to cover operations and invest in both digital systems and commercial projects. In addition, industry groups, struggling to keep up with a growing property market, supported digitalization, which would help them both complete transactions faster and lower costs.

With the backing of the minister responsible for Lands, the main hurdle lay in convincing

other government agencies. The commitment to keep providing cost recovery services helped, Roberts said, and DOLA's team explained that "with the ability to improve and modernize our systems, we should be able to deliver that to you better, faster, cheaper."

After several years of hammering out details and waiting for space on the crowded legislative calendar, Western Australia's parliament passed the Land Information Authority Act in November 2006. The legislation stipulated the new statutory authority's responsibilities, financial structure, and relationship to the government. Many of DOLA's managers would assume similar positions in the new agency, Landgate, when operations began on January 1, 2007.

## THE CHALLENGE

Searle, Roberts, and Landgate's other leaders confronted a range of challenges as they prepared to get the agency up and running. The overarching challenge was to generate enough revenue to update the agency's aging IT systems while maintaining high-quality services and low fees. The leadership had to maintain financial viability while investing in new technologies but also had to find ways to improve registration services, effectively use the agency's commercial powers, and persuade staff to buy into the new institutional model.

Success required careful financial management. "We account for our revenues and our costs as if we were a business," said Mike Bradford, who joined Landgate in 2006 after 22 years in the Australian army and later became CEO. To go beyond covering operating expenses and make major investments, the agency had to earn more than it spent. The divisions that registered transactions, assessed property values, and managed maps and other spatial data all depended on one another's work but had to coordinate and share information more effectively. Working together more closely would in turn prevent duplication of effort, and enable the agency to consolidate and reduce the costs of

support services like human resources and IT support.

The technological upgrades that motivated Landgate's creation represented a difficult leap forward for the agency. When DOLA first proposed a new model in 2001, Roberts said, the department was in the process of digitizing its paper titles and introducing Smart Register, a system that allowed examiners to review titles digitally instead of on paper and to use their computers to make and print changes to titles. But the examination process still relied on paper inputs and was labor-intensive.

Landgate's managers envisioned the development of cutting-edge systems that could handle every aspect of land transactions. At the front end, an electronic conveyancing system would enable the new agency to collect digital data from users who submitted transaction information online rather than handing paper forms across a counter. And at the back end, an automated registration system would enable Landgate to review transactions and update the title register—which in Western Australia's Torrens system served as the definitive record of ownership—without an employee ever looking at the documents. Developing such systems demanded creativity, effective collaboration with software developers, and a careful change-management strategy for staff accustomed to paper transactions. (See textbox 1)

The new authority faced immediate pressure to reduce turnaround times for registration. When Landgate opened its doors in 2007, Roberts said, "Western Australia had the biggest land boom the state had ever seen, and subsequently, we had a huge issue with our business processes." From 2001 to 2006, housing prices in Western Australia had shot up 118%, and property transaction volumes had increased by 35%.<sup>1</sup> With manual processes and limited staff, the registration of even a simple transaction took up to six weeks at the height of the boom, and the agency had a backlog that peaked at 26,000 documents.

The agency's managers expected that technological improvements would eventually

### Box 1. The Torrens System

Western Australia adopted the Torrens system (named after Sir Robert Torrens, an Australian politician in the mid nineteenth century) with the passage of the Transfer of Land Act in 1874. In a Torrens, or title registration, system, a certificate of title constitutes a strong and permanent record of property ownership. The person registered on the title has a definitive claim to the property, and the government guarantees the claim and provides the rightful owner with compensation if a title gets issued or transferred in error.

A Torrens system can simplify transactions because the title takes precedence over any other claims, and it guarantees the registered owner has the right to sell the property. In contrast, under a deeds system, transfers have to be thoroughly investigated to verify that the deeds in the registry show an unbroken chain of ownership that ensures that the owner in fact has the right to sell and there are no competing claims to the property. Because the Torrens title certificate serves as a definitive record of ownership, titles generally must be issued carefully so as to avoid dispossessing someone who has a legitimate claim to the property. Boundaries must be clearly demarcated, and it is important to resolve any disputes or overlapping claims at the time the title is issued.

In Western Australia, as in other Torrens systems, each title had two main parts: a map showing the location of the parcel and its boundaries and a text record of details about the owner and the property and any rights or restrictions associated with ownership, such as restrictive covenants or mortgages. Transferring a parcel required only the recording of the new owner's name in the text record. A division of the land or an alteration to its boundaries required an amendment to the map and the issuance of new documents or certificates.

increase efficiency, but the registration unit had to move faster to improve existing manual processes and speed up services. “We had a huge backlog; we had customer complaints. . . . It was hurting us at both the organizational and stakeholder levels,” Roberts said.

The property boom highlighted an underlying challenge for Landgate. Because the bulk of its revenues came from registration fees, the agency was vulnerable to the property market's fluctuations. For the statutory authority model to be financially sustainable, Landgate had to be prepared to cope with volatility. Although the immediate priority was to manage the surge in transactions, the agency had to be ready to scale down if the market slowed, which would require flexibility in the workforce and efficiencies in how that workforce delivered services. “We know we have these boom-and-bust cycles,” said Registrar of Titles Jean Villani. “So how in the public sector can we get a workforce we can ramp up and ramp down?”

Landgate also had to diversify its revenue streams both to help cover expenses in case of a downturn and to help finance investments. But finding ways to repack, market, and sell land data was completely new to the agency. Its managers had to establish a process to generate ideas, assess risks and returns, and decide what to pursue. Furthermore, Landgate's multiple roles and obligations sometimes complicated the decision making. The agency might pursue a project to make money, to benefit the public, or both; and “it's often hard to make a judgment around which opportunities we should be pursuing for which purpose and what a project should be measured against to be considered successful,” Bradford said.

All of those changes were likely to face opposition from staff members who were uncomfortable with the new model. Landgate's commercial functions were very different from the registry's traditional role, Searle said, so “for me one of the challenges was, how you run two

competing cultures within a [single] entity and value both?” In addition, longtime employees of the department had been working in the same ways for years, if not decades. Changing processes and technologies would take time, and to pave the way, the leadership team had to make staff feel “comfortable with and supportive of the change of corporate form,” Bradford said. As the agency evolved, helping staff members adapt would be an ongoing challenge.

### FRAMING A RESPONSE

The Land Information Authority Act spelled out Landgate’s powers and obligations. Its central responsibility was to collect, store, and provide access to the state’s land information—key aspects of which were property values, maps, and ownership data but which included everything from fire risk to conservation areas as well. The act stipulated that Landgate had to provide certain services designated by the minister responsible for Lands at cost (in practice, registration, valuation, and some spatial data provision). However, the legislation also required Landgate to generate a “fair commercial return”—a portion of the agency’s profits, agreed upon each year with the minister—for the state government.<sup>2</sup> The agency could engage in a wide range of business activities, such as providing consulting services, developing and marketing software or other intellectual property, or forming companies, partnerships, or joint ventures—provided it received approval from the minister and state treasurer for transactions valued at more than 5 million Australian dollars, or about US\$3.8 million at the time.<sup>3</sup>

Such broad authority to engage in business was unusual, but it served an important purpose. Searle said that to avoid a lengthy legislative amendment process, he and his colleagues wanted the legislation to “encompass everything that might happen in the future . . . so we tried quite consciously to keep open as many of the commercial pathways as possible.”

The Land Information Authority Act also set out Landgate’s structure and relationship to the

rest of government. A CEO managed Landgate’s operations and reported to a corporate board appointed by the minister responsible for land. “We were very strong about wanting a commercially focused board,” Searle said—as opposed to a representative board made up of stakeholder groups—and board members were typically experienced executives. The CEO and board regularly updated the minister on Landgate’s activities, and the minister approved the agency’s business plans and certain transactions; but in practice, the relationship was relatively hands-off. Officials typically had other priorities, Searle said, and as long as there were no major problems with service delivery, they were happy to let Landgate make its own decisions. “The only time government gets involved is if there’s something broken,” he said. “If it keeps working, who’s going to worry?”

### GETTING DOWN TO WORK

Landgate’s leaders had broad aims to upgrade IT systems and profit from the state’s land information, but they had to translate those aims into concrete plans for the agency’s first years. The agency’s first five-year strategic plan set objectives of making land information available online, supporting networked government, becoming financially self-sustaining and profitable for the state, and delivering excellent services to customers and the wider community.<sup>4</sup> When Landgate opened its doors in 2007, its leaders knew the steps they had to take, but they did not foresee all of the challenges they would encounter.

#### *Transitioning the team*

Once Western Australia’s cabinet approved the creation of a statutory authority, staff at the Department of Land Information (DOLA’s name from 2004 until its new incarnation as Landgate) had to be moved to new employment agreements. Becoming a statutory authority required some changes to employees’ contracts and compensation, and then communications manager Jodi Cant said, “People were

understandably concerned”—especially before they understood the details. Cant managed the communications aspects of the transition and eventually served in several general manager roles and as acting CEO.

Openness and communication were crucial to explain the changes and the reasons for the new model. “I’d talk to each individual work group about what was going on, where we were going,” Searle said. “I did it literally every eight weeks the entire time I was there.” Similarly, as Cant facilitated the transition, she said, “there was a lot of consultation . . . we were very open about what we were doing and why we were doing it.”

The contract changes were relatively minor, and Landgate remained bound by civil service human resources policies. “With a statutory authority, virtually nothing changed in terms of employment arrangements,” Roberts said—a key reason the government chose that model. Landgate’s management team offered to assist people who did not want to join the statutory authority to find new positions elsewhere in government, but Cant recalled that only two people took them up on it. In addition to approximately 850 civil servants who stayed on from the former department, Landgate hired almost 100 new staff—particularly skilled managers and people with private-sector experience—to build the agency’s commercial units.

For the most part, the initial transition went smoothly. “When people left work on Friday, they left the Department of Land Information, and on Monday, they came back to Landgate; we changed everything over the weekend,” Cant recalled. At first, Searle said, “The people in the core businesses [the nonprofit, regulated services] really didn’t have to change at all . . . In terms of their day-to-day work, we tried to keep it as much the same as we could.” Over time, however, the leadership team hoped to develop a very different institutional culture that focused more on innovation and efficiency.

Managers used training in other units’ functions to promote cross-sector collaboration.

“There was a lot of work with individuals around the fact that we succeed or fail together, that if one bit of the organization failed, it wouldn’t be the [valuations office] or titles office that would be on the front page; it would be Landgate,” Searle said. However, he added, as they learned to work together and systems improved, the core services became far more efficient.

In addition, some of the agency’s early projects—such as creating a platform for spatial data across government or developing an online store where people could purchase maps or copies of titles—“gave some meaning to the sorts of things this organization would do,” Bradford said.

Frequent communication and consultation remained vital as Landgate went through additional changes. Villani said that when she joined the agency in 2008 as a senior leader in Registration Services, she tried to get employees to voice their own ways of improving processes. “I had workshop after workshop with the team—having fun but getting them to think differently about how we went about our work.”

The culture evolved gradually. Some employees had worked for decades under the previous system and had little interest in drastic changes late in their careers, and others were apprehensive about what the new model might mean for their own jobs. As Landgate placed greater emphasis on technology and on operating like a private business, many workers were uneasy. Villani said the management team persevered. “There’s enormous frustration in the public sector when you’re trying to do something different. . . . With any large-scale change, you always get people who are reluctant, but we were able to get most people on board and making the change,” she said.

#### *Speeding up registration*

An immediate priority involved finding a way to accelerate processes while the technology to automate functions was in development. The 35% increase in transaction volumes during the previous five years had stressed the budget. In the two years before Landgate’s establishment as a statutory authority, Roberts said, its predecessor

had spent A\$250,000 (about US\$187,500 at the time) each year on overtime for registration staff, “and we could not continue to pay overtime to people who were working in a system that wasn’t efficient and effective.”

To help address workforce constraints while maintaining flexibility, the leadership team looked for ways to bring in temporary staff to handle simple functions. The most common transactions—such as transfers, mortgages, and discharges of mortgages—represented most of the registry’s activity, and most of them were straightforward and required relatively little specialized knowledge.

In an effort to establish a workforce that could ramp up or down, Villani experimented with cross-training customer service officers to handle those transactions by using a three-month training program—compared with the nine months required to train a full title examiner (plus two years of working under supervision)—but when transaction volumes started increasing, she was unable to move staff from their regular work to help with examinations. Instead, Landgate used the same program to train external temporary workers, who were carefully screened for the skills and personality traits shared by the agency’s most-productive title examiners.

The group of new contractors, called the Independent Document Processing Unit, or IDPU, proved highly effective. “They punched out the documents. They were producing them at really high quality and very low error rates,” Villani said. Roberts said the management team and existing staff were very skeptical at first and audited every transaction processed, but “that dropped off as we gained confidence in the system—to the point where we had an almost fourfold increase in productivity.” IDPU workers each processed anywhere from 28 documents an hour—such as discharge of mortgages, transfers, and mortgages—up to 40, Roberts said, compared with just 6 to 8 per hour among Landgate’s title examiners.

At the same time, however, productivity fell among the full examiners, to just three or four

documents an hour. The examiners, Villani found, were struggling to work faster—and had agreed among themselves to move at a slower pace. “There’s this real reluctance to change, and this fantastic camaraderie,” she said. After reviewing the logs in the Smart Register system, which tracked what each examiner processed and when, Villani saw that her team had been using the simpler transactions being processed by the IDPU to improve their processing numbers. “I thought they were taking the next bundle off the shelf, but what they had been doing was sifting through and pulling out the documents that were simple,” she said. “If they had spent a couple of hours at the shops or doing something else during worktime and didn’t want to put that on their time sheet, they could pull out a whole heap of easy ones” and still meet the day’s targets.

To channel what she called the examiners’ “team spirit” into productivity, Villani decided to reorganize the unit. At the time, examiners were responsible for everything related to the cases they handled, which encompassed answering queries from clients, administrative tasks, and dealing with documents that had been held up due to problems like incomplete information in addition to examining and registering documents. After evaluating skill sets and identifying the most effective examiners, Villani created teams based on each person’s strengths. The people who were best at reviewing and registering documents focused on those tasks, she said, “and all the other tasks that had been distracting were done by people who had strengths in other areas.” Adjusting the division of labor and introducing competition among the teams boosted productivity among the examiners even though the IDPU had taken their easiest work.

### *Wrestling with technology*

In 2008, Landgate began an ambitious—and unsuccessful—overhaul of its IT operations to create an automated registration system to replace its manual examination and registration processes. The project, called iLand, also aimed to develop systems for managing valuation and spatial data

and to integrate all three functions. In addition, the overhaul included preparations for electronic conveyancing and reviews of procedures and legislation.

As Roberts put it, the project “failed spectacularly.” Bradford said, “We started with the right intentions and the wrong approach.”

Increasing cost estimates and delays bedeviled iLand. Part of the problem was the structure of the relationship between the IT contractor and the agency: it was difficult to align the incentives of a service provider being paid for its time and an agency that wanted a system delivered as quickly as possible. Furthermore, the traditional software development process that iLand used resulted in the project’s getting stuck at milestones that proved challenging to reach, rather than moving on and working on a different part of the system.

In addition to using information and communication technology development methods that added time and cost, Bradford said, “we probably didn’t engage the people inside the business effectively.” In Bradford’s view, iLand did not sufficiently involve the registration staff, who had expertise in the subject area and would be the system’s key users. When the technology failed to reflect their needs, they became “disenfranchised,” he said.

Managers added that iLand suffered from a limited vision. The project “was trying to develop a new system that would do what we were doing at that time,” Roberts said, rather than fundamentally reshaping registration processes as part of the business process changes required for electronic conveyancing. Villani added that the focus was misplaced: “We were looking at how we get digital data in,” she said, and paid too little attention to how documents would be processed.

In addition, Roberts said, the project’s management structure was ineffective. The project team “was not prepared to make key decisions and provide viable recommendations for change. . . . They kept feeding the day-to-day decisions that ought to be made in the project up to the senior executive.” The cumbersome

decision-making process compounded iLand’s other problems.

When the 2008 financial crisis hit Western Australia and slowed the property market, Landgate’s revenues fell and the agency was unwilling to put more money into iLand without confidence that the project could deliver. After spending A\$10.5 million (about US\$9 million) with few results, the executive team halted the project in March 2011.

#### *Fostering innovation*

“The future was so unknown, so uncertain, and we knew we had to be fast and do things differently,” said Bradford. In early 2008, Landgate launched an innovation program to generate ideas on everything from saving money to new products. “The organization always had elements of innovation associated with it,” Bradford said, “but when we got a board, they said this had to be more formal.”

Cant, communications manager at the time, volunteered to develop a program. After struggling to find examples of successful government innovation programs, she decided to design her own based on models used in business. In doing so, she relied on two principles: Everyone had to be able to participate, and everyone had to be allowed to fail.

The first building block of the innovation program was an online forum where any employee could post an idea on how to improve Landgate’s operations or its bottom line. Crucially, Cant said, it was unmoderated—a condition that required a tough debate with the executive team, which wanted managers to approve the ideas before they appeared on the forum.

To encourage participation, Cant persuaded Landgate’s management team to allow employees to use up to 5% of their time on innovation. “When they argued with me on that one, I quoted our IT policy,” she said. “Our IT policy at the time said you could use 5% of your time and IT resources to look after personal business . . . and



you're not going to give them 5% to innovate?" The executive team agreed.

When ideas appeared on the forum, anyone could comment on them or ask questions. Then a rotating group of volunteers known as the "i-team" reviewed the ideas that had been discussed on the forum, met with the people who had proposed them, and decided which ones to fund. Cant said she insisted on a rotation of Landgate employees through the i-team in order to position "champions" of innovation across the agency.

In addition, the varied backgrounds of i-team members brought different perspectives on the problems the agency faced and how innovation ideas might solve them. The ideas had to generate some form of return on investment, Innovation Manager Rebecca Prior said, but "that could mean revenue, customer satisfaction, brand awareness, or employee engagement . . . or the innovation project might prove or disprove a new process or tool we need to test."

The program had ample resources: an enthusiastic board approved A\$2 million (about US\$1.6 million at the time) per year initially. However, after five years, the innovation team recommended that the agency reduce the amount to A\$1 million (then US\$900,000) because they felt that innovation had become successfully embedded into day-to-day operations. The program focused on amounts below Landgate's threshold for a full business case, making it easy to get funding of up to A\$50,000 (US\$40,000). The innovation program supported ideas ranging from an internal wiki to a text message service to notify citizens about wildfires that were common in the state.

The innovation program evolved to meet Landgate's changing needs. "Initially, when the program was set up, it was mainly to look for other opportunities to earn commercial revenue and find new markets and new products," Prior said, but once the financial crisis shifted the agency's priorities from developing new spatial products to increasing efficiency, the program's focus moved to internal process improvements and employee satisfaction. Several years later, she

said, the innovation program changed again, emphasizing business efficiency, continuous improvement, and prototyping. "It's a great opportunity to test things on a small scale," such as the agency's cloud storage system, Prior said. In 2016, Prior and her team introduced "business challenges," which asked employees for solutions to specific challenges such as internal communication.

#### *Commercializing land information*

One of the key factors that motivated the establishment of Landgate's innovation program was a board-endorsed drive to develop ways to repackage and sell different types of land information. Although some products originated as innovation ideas from Landgate's employees, the business development unit also had a team of "commercial consultants" who networked with businesses involved in technology, land information, or the property market and who researched global trends to identify new opportunities.

If the business development unit thought an idea had potential, sometimes after initial testing funded by the innovation program, the team had to decide what Landgate should do to turn that idea into a reality. The most straightforward option, designing and developing a new product in-house, was the focus of the agency's commercial activities from 2008 until about 2011.

One of the most popular products Landgate designed and built was FireWatch, an application that used satellite imagery to map bushfires around Australia. It was a valuable service in the arid and fire-prone country, which experienced approximately 50,000 fires per year.<sup>5</sup> In addition to recent fires, FireWatch mapped lightning strike locations, the greenness of vegetation (representing its propensity to burn), and weather that could influence fires' paths.

In 2012, Landgate, the University of Western Australia, and the state Department of Fire and Emergency Services released Aurora, which built on FireWatch with predictions and simulations of fires' behaviors based on different weather

scenarios, firebreak patterns, and amounts of fuel (mostly dry vegetation) available.<sup>6</sup> Anyone could access a public version of the application, and more-sophisticated users could pay for subscriptions to an advanced version. Landgate also exported the technology—notably, to Indonesia through a project funded by AusAID.

Another example of Landgate’s creative use of its spatial data was Pastures from Space, which used satellite imagery and climate data to track pasture growth rates and the amount and quality of feed available in different sections of farms, helping users optimize grazing rotations, water and fertilizer use, and stocking rates.<sup>7</sup> (See textbox 2)

Landgate eventually shifted away from the development of spatial data products, however, especially after the 2008 financial crisis strained resources. The products were costly to develop in-house and had generated fairly low returns—especially after Google Maps introduced satellite imagery for free, which undercut a key product Landgate had expected to sell.

Instead, the agency began moving toward supporting business ideas developed externally and forming partnerships. But the shift added complexity. For Landgate to create a new company or participate in a joint venture, “we’ve got a lot of hoops to jump through—and rightfully so,” said Peter Markham, general manager of Landgate’s business development unit. If a commercial consultant produced a business plan that looked promising, then the general manager for business development, corporate executive team, CEO, board, minister, and state treasurer all had to sign off on the proposal, Markham said, “so those steps are quite involved—let alone all the work behind the scenes on the legal component, market analysis, and financial analysis.”

Markham said the process played an important role in keeping Landgate’s investments aligned with its strategy and values, even though the time-consuming process could be a challenge when working with private-sector partners; and Landgate had to factor in political and social risks in addition to financial ones. “You’re out looking for commercial opportunities . . . but you’re doing it with a social conscience,” he said.

In addition to the partnerships Landgate established—for instance, a joint venture to create a three-dimensional imagery company called Earthmine Australia—the agency developed ways to support businesses without investing. In April 2016, Landgate launched SPUR, a “location technology hub.” The hub focused on supporting start-ups that used location information in their businesses, although its services were available to others such as researchers and government officials as well. Start-ups could access Landgate’s data more cheaply with a special license, use a coworking space, get technological and data support from Landgate’s staff, participate in networking events, and apply for small grants from the agency. Companies that used maps or data from Landgate and received grants in SPUR’s first year included Instatruck, an on-demand service for hiring trucks, and Landguide, a website that consolidated and presented information on undeveloped land parcels in new developments to help consumers choose which parcels to buy.

During SPUR’s first year of operation, the hub’s primary focus was on the social benefit of creating new businesses in the state, but, Markham said, “Anytime we’re helping them get going, that’s also an opportunity for us to look at a potential investment.”

### Box 2. Coordination of Data Sharing in Western Australia

In 1981, decades before Landgate’s establishment or the widespread use of digital data, Western Australia established the Western Australia Land Information System, or WALIS, a mechanism whereby government agencies that held different types of spatial information could coordinate their work and share data. At first, “it wasn’t so much a system as a group of public-sector agencies that had land information getting together and recognizing the power of that data—what you could do if you combined the data to enable better decision making within government,” Roberts said. Creating a structure to communicate what information each agency had and its plans helped the government avoid duplication in data collection and enabled agencies to use new sources of information as they designed policies. Landgate’s predecessors had hosted the WALIS office, which served as a secretariat for the group; and Landgate continued to do so after becoming a statutory authority.

In 2004, the state government allocated A\$30 million (about US\$22 million at the time) for the development of the Shared Location Information Platform, or SLIP, which would host all of the data in one place; and Landgate completed the platform in 2007. Each agency could upload its own data onto SLIP and use it to access other data without going to the original agency for a copy. In addition to making data sharing quicker and easier, SLIP made sure that agencies used the most-up-to-date versions of one another’s data. The moment one agency updated a data set it had posted to SLIP, all of the other users would receive the new version. In 2008, Landgate opened access to SLIP to the public.

In addition to data sharing, WALIS played a key role in setting policy. The WALIS office coordinated the development of the state’s 2012 Location Information Strategy, which sought to incorporate spatial information into new areas of government decision making. The office also was responsible for administering the state’s open data policy. As of 2017, approximately 3,400 data sets were available through SLIP, most of them free and available publicly.

#### *Preventing fraud*

Although Landgate’s managers encountered few instances of fraud, two cases—in 2010 and 2011—made headlines across Western Australia. Scammers in Nigeria had contacted real estate agents purporting to be property owners while the real owners were overseas; they forged signatures on the transfer documents; and they then sold the homes.

“That shook up the industry a bit,” said Villani. And especially with the impending introduction of electronic conveyancing, which made it easy to do business without meeting face-to-face, it was important to ensure that property owners were in fact who they claimed to be.

Landgate decided to introduce mandatory identity checks for lawyers and conveyancers. Doing so proved contentious, however. The key industry representatives—the Law Society and the Institute of Conveyancers—were wary of the

potential liability that could come with assuming responsibility for verification of identity. The language of the statement they had to sign created another sticking point: it required that they attest in writing that the person had the authority to transact, which in their view added another layer of complexity.

“Verification of identity by itself isn’t enough,” Villani said. “It’s not just who I am but also whether this is my property and I have the authority to sell it.” To prevent fraud, lawyers and conveyancers had to be certain not only that their clients were who they said they were but also that the properties being sold in fact belonged to them and they had no restrictions—for instance, due to mental incompetence—on their ability to transact.

“That raised a whole host of liability issues, because saying someone has the authority to deal with a title is a very different thing from saying someone is the person they purport to be,” said

Gary Thomas, who headed the Law Society's Property Law committee. "There was no argument that you would be negligent if there were indications there was a problem and you ignored them," he said, but lawyers had not necessarily been obligated to investigate and verify every client's credentials, and they were concerned about being required to issue written statements in a prescribed form that could be used to sue them if a fraudster managed to get through.

"It was a very painful, extremely frustrating process," Villani said, but after months of discussions, the Western Australian conveyancers accepted Landgate's verification-of-identity standard.

### *Introducing electronic conveyancing*

Electronic conveyancing—the digital preparation and signature signing of transaction documents between buyers and sellers and delivery of those documents for registration—was a long-standing goal of registrars in Western Australia and other states and territories. In addition to speeding up the entire process and eliminating the need to exchange paper documents, an online system could limit transactions to authorized users and monitor their activity as a safeguard against fraud. In addition, providing land registries with digital data instead of paper forms would prevent data entry errors and facilitate automated registration.

The state of Victoria had been developing an electronic conveyancing platform, but other Australian states had shown little interest in using the system. "We started talking as a group of registrars, led by the Victorian jurisdiction, around the need for a national e-conveyancing system . . . but we were never able to reach agreement," Roberts said.

By 2008, it appeared that each state might develop its own approach, but the banks, which were critical stakeholders, objected. Banks regularly submitted mortgage information to the state land agencies, and many operated on a national scale. "[They] said that 'there's no way that we are going to participate in this initiative,'

because the expense of having to configure their systems to connect to seven different [e-conveyancing platforms] . . . was not worth doing," Roberts recalled. The banks wanted a unified approach.

In an attempt to find a solution, the registrars established a national office to promote e-conveyancing and work with interest groups around the country to design a system. The new office quickly encountered similar disputes. "It really got scuttled on myopic issues around the need to change forms and processes and things like that," Roberts said. And behind those disagreements, "there were state rivalries that just transcended the concept of a reform program."

The head of the office and the state of New South Wales sought help from a higher authority: the Council of Australian Governments, an intergovernmental body made up of the federal prime minister and the leader of each state or territory's government. Nationwide digital services already represented a priority at the Council, and in 2008, its members issued an intergovernmental agreement instructing the registrars to work together on a national system for e-conveyancing. At that point, Roberts said, "the registrars didn't have a choice, and neither did the people above them."

In 2010, four state governments—including Western Australia—and the country's four major banks jointly formed a private company, eventually called PEXA, or Property Exchange Australia, to design the e-conveyancing system. Meanwhile, a committee of registrars, initially chaired by Roberts, drafted enabling legislation for the individual states and evaluated business processes to prepare for digital input. The committee also established operating rules and requirements to govern the implementation of e-conveyancing.

In October 2013, the first PEXA transaction took place in New South Wales. Western Australia followed in June 2014 and offered a full range of transactions—mortgages, discharges of mortgage, transfers, caveats, and withdrawals of caveat—a year later. The platform allowed

lawyers or conveyancers to prepare transaction documents in an electronic workspace, share the documents with the other party's representative, digitally sign the documents, transfer the funds, and submit the documents to Landgate—all of it without leaving their offices.

Uptake was slow, however, because e-conveyancing was a major adjustment for many lawyers and settlement agents. Katelyn Sinclair, a member of the Australian Institute of Conveyancers' (Western Australia Division) governing council, cited the need for training as one significant reason. She said glitches in the system made learning it especially challenging. In addition, the industry was working to update indemnity and cyber insurance as well as standard contract terms to reflect the requirements of e-conveyancing, and until those issues were resolved, some people were reluctant to use the system.

Facing slow adoption of a technology that the agency viewed as important and necessary—especially to generate the digital data required for automated registration—Villani and some of her colleagues decided to take steps to make e-conveyancing mandatory. “E-conveyancing was going to be the future,” Villani said. “It’s a more secure and efficient way to transact.” In October 2016, she began collecting stakeholder feedback on a plan to require all eligible documents to be submitted electronically.

The move drew criticism from some conveyancers and lawyers, who said their industries needed more time to adjust. “We in no way oppose e-conveyancing, but being forced to use it as our only system is what we’re not satisfied with,” Sinclair said. She also raised issues of potential conflicts of interest based on Landgate’s investment in PEXA through the Western Australia state government. Villani said she had received legal advice that the move was permissible. She also noted that the requirement was not to use a single company and that increasing the use of e-conveyancing could help promote competition by creating a market large enough to support another operator.

## OVERCOMING OBSTACLES

In late 2008, the global financial system melted down, and Western Australia’s booming property market crashed, raising an unanticipated challenge for Landgate’s managers. Registry transactions fell to 310,000 in 2008–09 compared with 362,000 the previous year—a 14% drop—which resulted in a loss of A\$2 million (about US\$1.5 million) for Landgate’s financial year.<sup>8</sup>

But the more serious problem was that instead of recovering, the market remained in a protracted slump for the next several years, with a downturn in Western Australia’s mining industry compounding the effects of the financial crisis. By 2011–12, transactions were down by 37% from the height of the boom, reaching 15-year lows.

“The global financial crisis was a bit of a defining moment for the organization,” Bradford said. The crisis forced Landgate to make difficult decisions about its structure and investments.

As it became clear that Landgate’s revenue was unlikely to bounce back quickly, the agency first raised prices and then cut spending. “We had to put up the fees, because we had a fixed cost base and at that stage we were not capable of absorbing that loss,” Roberts said. The pricing changes took effect in mid 2010, most significantly raising the base fee to submit documents by 23% to A\$135 (US\$122).<sup>9</sup> The new structure also adjusted how the fee revenue could be used. The changes redefined the land administration system to encompass both information in the title registry and other location-based information on factors that might affect land rights. Although those factors—for instance, the presence of certain vegetation or contamination—were not recorded on certificates of title, they supplied vital supplementary information, and the agency was therefore allowed to use registration fees to support location information functions.

In addition, in March 2011, the agency cut spending significantly by scrapping the iLand project. Although raising fees and ending spending on iLand helped stabilize Landgate’s

balance sheet, the agency had to make sweeping changes to become financially sustainable in the newly challenging environment. In late 2013, the agency launched a program called Transform, which focused on more-effective delivery of services to customers, systems and process reform, and downsizing of the agency's workforce by nearly a third during the succeeding three years.

Led by members of the executive team who had recently joined Landgate from the private sector, managers looked for operational inefficiencies and ways to consolidate jobs. Their review resulted in new roles for approximately 20% of employees after managers identified the skills and functions they needed from their teams. Landgate had offered voluntary severance before, but this time, the program, although still voluntary, "focused much more on skills and capabilities," said Alison Hodge, who joined Landgate as general manager for strategy in 2013 and ran the Transform program. "It was really about working in different ways, so people had to choose whether they wanted to be part of that or not."

Although the effort raised objections from employees, the longevity of the workforce helped. At the time, Hodge said, the average employee had been at Landgate for 17 years, since well before its transition to a statutory authority. As a result, many employees were close to retirement and willing to take the severance payouts that were offered. "The demographics worked for us as an organization," she said. "There has been some pain, but it's been a little less painful than it might otherwise have been."

Those who remained faced more-demanding expectations, and the Transform program involved a more decisive cultural shift than Landgate's establishment as a statutory authority. Previously, Bradford said, "we kind of had tribes of cultural views inside the organization," with some taking a traditional view of their roles as civil servants and others focusing on innovation and working as in private business. The initial transition "had been done in a more gentle way,"

he said; but with the Transform program, "we were a bit more forthright in our approach—by necessity."

As part of the Transform program, Landgate's executive team also decided to try again to automate its registration processes. This time the team took a very different approach. Roberts acknowledged that there was some reluctance to revisit the idea. He and other managers had been burned by iLand, and each felt some responsibility for its failure. "But after that self-examination, the prevailing mood was that we needed a modern, efficient, and effective system," he said. Landgate's systems were out-of-date; e-conveyancing required a system that could handle digital input; and after an up-front investment, automation would substantially reduce operating costs.

After struggling to custom-build a system, Landgate's managers hoped to purchase an off-the-shelf solution. However, Bradford said, there were no purely off-the-shelf options; and the few systems Landgate might be able to customize were not what the agency was looking for. "There was nothing cloud based, nothing delivered as a service, nothing fully automated . . . so we reluctantly decided to build our own system," he recalled.

After their search revealed that most jurisdictions that used Torrens systems had highly customized, aging IT systems, Landgate's managers decided that if they wanted to buy a new registration system, other jurisdictions might, too—and Landgate could be the one to sell it to them. "We said, if we're going to build something, it's going to meet our needs, but it's got to be positioned to meet the needs of others," Bradford said.

The market opportunity helped restructure Landgate's relationship with its IT provider, the Australian branch of Ajilon, a global IT and staffing service under the umbrella of the Switzerland-based Adecco Group. "To get the right incentive framework, we could be upfront with Ajilon and say, 'If you build something for us, then you get an in-principle agreement to

participate in the commercialization,” Bradford said. “That creates a strong alignment of interests.” With an eye on potential future business, it was in Ajilon’s own interests to keep costs low and develop a product as quickly as possible.

To avoid iLand’s problems of slow decision making and constant escalation of minutiae to the executive level, Landgate also changed its internal approach to managing the project. The agency established a project team—this time with larger roles for experts from the registration unit—and authorized the team to make and implement day-to-day decisions. When significant questions came up, the project team could get answers from another group that included the project manager, Villani, and Roberts.

Roberts said the new approach worked well. “It didn’t go to endless committee meetings,” he said. “The project governance meant we were making the decisions that were being asked of us, on the fly.”

In addition, instead of focusing on the big milestones and distinct phases used in traditional IT development—points where iLand had gotten stuck—Landgate and Ajilon chose small pieces of the overall goal and made incremental changes, with rapid cycles of testing and adaptation. As a result, Bradford said, “the project was able to focus on the things that would deliver the biggest business benefits first.” He added that quicker and more-visible results increased employees’ willingness to accept the changes and participate in them.

The team also shifted its emphasis based on lessons from iLand’s failure. The first attempt had not done enough to overhaul procedures, so this time, Villani said, “we did the process redesign first and then were looking at building the systems to support it.” In addition, with PEXA in the process of rolling out its e-conveyancing platform, the project team no longer had to dwell on a way to get digital data into the system. Instead, Villani said, “we could shift our focus to the back end and automating what would come in. . . . We wanted a hands-free process.”

The project team developed a set of business rules that replaced manual examination for the most common transactions. For instance, in the case of a transfer, the system verified that the seller was in fact the property owner listed on the register, that there were no restrictions on the title that prevented the sale from going through, and that both parties had provided all of the information called for by the laws and regulations governing land sales.

In creating the rules, Landgate had to keep other potential users in mind. The design team had to “make sure we didn’t build into the system things that were peculiar to Western Australia for no good reason . . . and that forced us to question our own business processes,” Bradford said. Landgate’s decision making took into account the shared data standards that states had developed in preparation for e-conveyancing. “[That] gave us some confidence that if we built it following the PEXA data standards, it would be configurable for other jurisdictions,” Bradford said.

Landgate launched its redesigned cloud-based system, called the New Land Registry (NLR), in June 2015, with the full range of transactions rolled out by December. Because most transactions were being submitted on paper at the time, the agency built a simple data-entry portal and hired temporary clerks to input the information as an interim measure until e-conveyancing was in widespread use. Because the NLR’s business rules would reject incomplete applications, counter staff—who continued to receive training in basic examining even after the creation of the Independent Document Processing Unit—checked the documents clients dropped off for acceptability.

Automation further reduced the already falling staff numbers in the registration unit to just 15 people—from 75 in 2008. The staff members who remained handled complex transactions and maintained the agency’s policy and legal knowledge on registration. By 2017, the overall number of staff at Landgate had fallen from more than 950 to about 600.

## ASSESSING RESULTS

In the decade following Landgate's 2007 establishment, an emphasis on learning and adaptation enabled the agency to improve services, generate profits, and receive accolades for innovation—despite a challenging market and some early stumbles.

With the launch of the NLR in 2015, after suffering a major setback with iLand, Landgate had completed the mission that drove its formation: the development of an automated registration system. As proponents had anticipated nearly two decades earlier, automation sped up the registration process, prepared the agency to adjust to boom-and-bust cycles, and saved money. Registration times fell dramatically after the introduction of the digital NLR system: to 1.5 days from 7 to 10 for transactions submitted on paper and to just 23 seconds for transactions lodged electronically.<sup>10</sup> Lower salary costs resulting from automation saved Landgate A\$15 million (about US\$11.3 million) in the NLR's first year in use, and the agency anticipated total savings of A\$52 million (US\$39 million) over five years.<sup>11</sup>

In December 2015, Landgate created a spin-off company called Advara to market the NLR to other jurisdictions, with Ajilon serving as the company's IT service provider. As of 2017, Landgate owned 78% of Advara, with the remaining 22% owned by Adecco, Ajilon's parent company; and the company had a five-year, A\$140-million (US\$105-million) contract to provide IT services for Landgate.<sup>12</sup> In April 2017, Advara was poised to take advantage of its first major commercial opportunity: the privatization of New South Wales's land registry. Advara advised the winning bidder.<sup>13</sup>

The statutory-authority model proved financially stable and generated revenue for the state government—another of the key goals in Landgate's initial strategy. Landgate's profits fluctuated widely depending on transaction volumes, from a low of A\$900,000 (about the same in US dollars) in 2011 to a peak of A\$40.6 million (about US\$37.4 million) in 2014, but

except in 2008–09, Landgate was still profitable in every financial year. Each year, the agency and minister responsible for land negotiated a share of those profits to be returned to the state government as a dividend.

Landgate also succeeded in delivering high-quality service for its customers and the broader community. In the agency's 2015–16 customer satisfaction survey, 80% of respondents rated Landgate's service as "excellent."<sup>14</sup> Members of key user groups such as lawyers and conveyancers praised Landgate's efficiency—although certain moves such as identity checks and mandatory e-conveyancing created some tensions.

Sinclair of the Australian Institute of Conveyancers (Western Australia Division) said, "Because they have elements of private enterprise, they want to make things more efficient; and generally, if it's going to be more efficient for Landgate, it's going to translate into being more efficient for us." However, sometimes the drive for efficiency overrode the "human element," she added.

Another key customer, the state government, also appeared satisfied with Landgate's performance. Although several states in Australia raised the prospect of privatizing their land registries, as of early 2017 Western Australia had not made any moves to do so.

Although Landgate was overly optimistic about the revenue that spatial data products could generate, the agency developed award-winning products and facilitated easy access to thousands of data sets. The agency used the spatial information that it and other government agencies held in creative ways, thereby enabling users to monitor everything from bushfires to pasture growth, to flood risk.

FireWatch and Aurora—the agency's two bushfire-monitoring systems—and Indofire, a version adapted for Indonesia, won many awards, including the Western Australian Information Technology and Telecommunications Alliance awards and the national iAwards.<sup>15</sup>

The Shared Location Information Platform received regional recognition, winning the



Spatially Enabling Government award at the Asia Pacific Spatial Innovation Conference in 2008 and the top prize at the 2008 Western Australia Premier's Awards for Excellence in Public Sector Management, among others.<sup>16</sup> Government agencies throughout Australia used Landgate's innovation program as a model, and in 2016, the *Australian Financial Review* newspaper named Landgate the 22nd-most-innovative company in Australia.<sup>17</sup>

"We're the only agency we've seen in the world where spatial and valuation and registry data plus other government data come together in one place as it does here," Cant said.

## REFLECTIONS

From its establishment as a statutory authority in 2007 to 2017, Landgate embraced change and learning, and the agency's emphasis on adaptation enabled it to weather challenges and build on successes.

Experimentation was a key aspect of Landgate's culture. It was crucial to make people feel "encouraged and welcomed to push boundaries," CEO Mike Bradford said, whether through the agency's official innovation program or in its day-to-day work. The agency encouraged employees to pursue new ideas—and allowed them to devote up to 5% of their workday to innovation. If an approach failed to deliver or had unanticipated, undesired consequences, managers throughout the agency applied the lessons to their next attempt. "We say, if you fail, fail early, and learn from it next time," said SPUR general manager Peter Markham, "although we can't just invest in a bunch of failed ventures and go around high-fiving ourselves for learning lessons; we need to ensure we're making a return for our shareholders: the community of Western Australia."

The prime example of Landgate's adaptability was the New Land Registry (NLR) system, which succeeded only after an earlier attempt, iLand, had gone down in flames. After the iLand project's collapse, the agency overhauled every aspect of its software development process. "I

think the failures leading up to [the NLR] are what put us in position to make this one successful," Registrar of Titles Jean Villani said. "Bringing through those lessons learned is why we've been able to achieve it." With automation, as with other initiatives, the agency's leadership team—many of whom had been at Landgate since its beginnings but some of whom joined the executive team later on, with fresh perspectives supplemented with private-sector experience—struck a careful balance between remaining steadfast in pursuit of its goals and reevaluating when something was not delivering.

The statutory-authority model adopted in Western Australia had both advantages and drawbacks. Despite operating increasingly like a private company, Landgate still had to adhere to public-sector policies on human resources and financial management—for instance, not investing some of its cash reserves because doing so would add to the state's already high net debt. The policies were understandable, said General Manager for Strategy Alison Hodge, "but your ability to grow a strong balance sheet and deliver a good financial return to the state is constrained."

On the other hand, Acting CEO Jodi Cant said, being a statutory authority meant Landgate faced financial pressures for efficiency but could think beyond the bottom line. "Not everything needs to be commercial," she said, "but we look at everything we do with a commercial lens."

Despite certain limitations, the broad commercial powers accorded to Landgate in its enabling legislation gave it far more flexibility and space to innovate than a government department had, Bradford said. "I don't think the people who created the statutory authority ever anticipated exactly what we're doing, but they knew it could enable something like this," he said. "We're lucky that people had the foresight to enable us to act in the way we act."

Landgate's statutory-authority model was structurally similar to several other land agencies around the world, such as British Columbia's Land Titles and Survey Authority. However, its

commercial powers—and how it chose to use them—set Landgate apart. Landgate’s management team placed significant emphasis on profit-making initiatives, whether marketing spatial data products, investing in start-ups, or designing a registration system it could sell to other jurisdictions.

Landgate also offered ideas and technical assistance to developing countries—from Indonesia and Vietnam to Sri Lanka—but its approach was unlikely to work in every setting. Sweeping changes like new institutional structures and IT systems required careful consideration, said General Manager for Operations Bruce Roberts. For instance, he said, he and other consultants had helped the government of Sri Lanka develop a more efficient paper-based registration system instead of computerizing right away—in part because the country’s registry lacked reliable electricity. “It’s about making recommendations that are relevant and timely,” Roberts said, and that meant taking into account countries’ cultures and resources rather than adopting a one-size-fits-all model.

Still, several of the initiatives Landgate put in place could easily be implemented elsewhere, managers said. Although the innovation program’s funding helped, Cant said, “it was never about the money” but, rather, about creating a structure that “gives people the power to make change.” Similarly, the agency’s innovation hub, SPUR, could easily translate to lower-resource settings, Markham said: “A big part of what we do is networking—helping people talk to the right people and cutting red tape. . . . That works everywhere.”

Landgate’s automated processing, customized digital maps, and start-up hub were far cries from the world of paper titles and lines at the counter that several of its team members had started out in—and they represented a proactive response to a changing environment. Especially as electronic conveyancing and talk of privatization emerged on the scene, the executive team recognized change was coming, Roberts said, “and Mike Bradford, our chief executive, identified early on

that either we had to do it ourselves or it would be done to us.” As a result, Cant said, “We’ve chosen to disrupt ourselves.”

## APPENDIX: RECOGNIZING ABORIGINAL LAND RIGHTS

Australia’s system of property rights was based on the assumption that once the British Crown asserted sovereignty over the country, all land belonged to the government—leading to the dispossession of Aboriginal peoples. A 1992 decision by Australia’s highest court, *Mabo v. Queensland*, “decided that assumption was false,” said Nicholas Duff, a lawyer who worked for Aboriginal groups claiming Native Title. *Mabo* held that although there had been a change in sovereignty—a change that some Aboriginal peoples contested—“that doesn’t mean that the traditional Aboriginal owners of the land aren’t still so, unless that land or interests in that land have been granted to other people,” he said. However, after the *Mabo* decision, how to formally recognize Aboriginal communities’ tenure rights and decide what they meant in practice were open questions.

The Native Title Act 1993 set forth a process for recognizing indigenous peoples’ land rights under the Australian legal system. First, an Aboriginal community that wanted to pursue a claim worked with lawyers and anthropologists from a “representative body”—a federally funded nonprofit that supported Native Title claims for a given area—to determine the boundaries of that community’s traditional lands. The community also had to decide internally who belonged to the group and had rights to the land. Then the representative body’s team filed court documents and worked with the Aboriginal community to collect evidence—from historical documentation to stories and songs—supporting the community’s connection to the land. The claim either went to a civil trial or, more often, got settled out of court.

Once the evidence established that the group was indeed the traditional owner of the land, the next step was to determine the group’s rights

based on how it had used the land in the past. “First is the anthropological and historical [evidence], and then we try to translate that and plug it into a Western system of land rights or law,” said Simon Moore, a legal and policy advisor in Western Australia’s Native Title Unit. But state governments and Aboriginal communities might translate the evidence into different rights. Aboriginal groups typically preferred that a Native Title determination recognize broad categories of rights, such as the right to exclusive access or the right to use the land’s resources, whereas state governments sometimes focused on ensuring that the rights in the determination reflected traditional laws and customs for which the applicants had provided evidence.

In addition, “Just because it’s written down in your native title determination doesn’t mean you

necessarily get to exercise [those rights],” Duff said. The government still had the power to grant others rights to the land, such as a homeowner or a mining company, and while those rights remained in force, they prevailed over Native Title rights. When rights overlapped, the Aboriginal community was sometimes able to negotiate an arrangement directly with the third party—for instance, with regard to access to the land. In other cases, the government was liable to pay compensation to the community, but generally only in situations when the state would have compensated any other landowner—and going back only to 1975, when a federal law prohibited racial discrimination. In Western Australia, the state and Aboriginal groups had completed 65 Native Title determinations as of April 2017, covering more than 1.2 million square miles.<sup>18</sup>

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## References

- <sup>1</sup> Department of Treasury and Finance, *Housing Stress in Western Australia*, March 2007; [https://www.treasury.wa.gov.au/uploadedFiles/housing\\_stress\\_in\\_wa.pdf](https://www.treasury.wa.gov.au/uploadedFiles/housing_stress_in_wa.pdf).
- <sup>2</sup> Land Information Authority Act 2006, Section 9.3, Section 8b (Western Australia); [https://www.slp.wa.gov.au/pco/prod/FileStore.nsf/Documents/MRDDocument:4954P/\\$FILE/LandInfoAuthAct2006\\_00-00-02.pdf?OpenElement](https://www.slp.wa.gov.au/pco/prod/FileStore.nsf/Documents/MRDDocument:4954P/$FILE/LandInfoAuthAct2006_00-00-02.pdf?OpenElement).
- <sup>3</sup> Land Information Authority Act 2006, Section 12, Section 13.3 (Western Australia); [https://www.slp.wa.gov.au/pco/prod/FileStore.nsf/Documents/MRDDocument:4954P/\\$FILE/LandInfoAuthAct2006\\_00-00-02.pdf?OpenElement](https://www.slp.wa.gov.au/pco/prod/FileStore.nsf/Documents/MRDDocument:4954P/$FILE/LandInfoAuthAct2006_00-00-02.pdf?OpenElement).
- <sup>4</sup> Landgate, *Statement of Corporate Intent 2008/09*, accessed May 18, 2017; [https://www0.landgate.wa.gov.au/docvault.nsf/web/AU\\_CI/\\$file/POL\\_LG\\_Statement-Corporate-Intent\\_2008-09\\_200804.pdf](https://www0.landgate.wa.gov.au/docvault.nsf/web/AU_CI/$file/POL_LG_Statement-Corporate-Intent_2008-09_200804.pdf).
- <sup>5</sup> Joseph Sapienza, “Australia Scorched by 50,000 Bushfires a Year: Report,” *WA Today*, November 26, 2009; <http://www.watoday.com.au/wa-news/australia-scorched-by-50000-bushfires-a-year-report-20091126-jtfs.html>.
- <sup>6</sup> Mike Steber, “Aurora: Enhancing the Capabilities of Landgate’s FireWatch with Fire Spread Simulation,” 2012; [http://www.bushfirecrc.com/sites/default/files/managed/resource/aurora\\_-\\_mike\\_steber\\_-\\_afac.pdf](http://www.bushfirecrc.com/sites/default/files/managed/resource/aurora_-_mike_steber_-_afac.pdf).
- <sup>7</sup> Landgate, “Pastures from Space Product Information,” accessed May 18, 2017; [https://www0.landgate.wa.gov.au/docvault.nsf/web-new/PS\\_IM\\_Satellite/\\$FILE/Pastures\\_From\\_Space.pdf](https://www0.landgate.wa.gov.au/docvault.nsf/web-new/PS_IM_Satellite/$FILE/Pastures_From_Space.pdf).
- <sup>8</sup> Landgate, *Annual Report 2008/2009*, accessed May 18, 2017; [http://www.parliament.wa.gov.au/publications/tables/papers.nsf/displaypaper/3811339a0a3fba4470508134c825763a0019c516/\\$file/landgate+ar+2008-9.pdf](http://www.parliament.wa.gov.au/publications/tables/papers.nsf/displaypaper/3811339a0a3fba4470508134c825763a0019c516/$file/landgate+ar+2008-9.pdf).
- <sup>9</sup> Landgate, “Registration Services Customer Information Bulletin No. 199,” June 30, 2010; [https://www0.landgate.wa.gov.au/docvault.nsf/web/PS\\_CIB/\\$file/CIB199.pdf](https://www0.landgate.wa.gov.au/docvault.nsf/web/PS_CIB/$file/CIB199.pdf).
- <sup>10</sup> Marie Sansom, “We Digitally Disrupted Ourselves: Land Registry,” *Government News*, November 18, 2016; <http://www.governmentnews.com.au/2016/11/digitally-disrupted-land-registry/>.
- <sup>11</sup> Paris Cowan, “How Tech Saved WA’s Land Registry from Privatisation,” *iNews*, November 18, 2016; <https://www.itnews.com.au/news/how-was-land-registry-used-tech-to-save-itself-from-privatisation-441668>.
- <sup>12</sup> Nick Evans, “Landgate Awards IT Contract to Its Own Subsidiary,” *The West Australian*, January 3, 2017; <https://thewest.com.au/business/contracting/landgate-awards-it-contract-to-its-own-subsidiary-ng-b88345377z>.

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<sup>13</sup> Esther Han, “NSW Land Titles Registry Leased for \$2.6 Billion to Hastings Funds Management, First State Super,” *Sydney Morning Herald*, April 13, 2017; <http://www.smh.com.au/nsw/nsw-land-titles-registry-leased-for-26-billion-to-hastings-funds-management-first-state-super-20170412-gvjcfw.html>.

<sup>14</sup> Landgate, *Annual Report 2015/16*, accessed May 18, 2017;

[https://www0.landgate.wa.gov.au/\\_data/assets/pdf\\_file/0007/16279/Landgate-Annual-Report-2015-16.pdf](https://www0.landgate.wa.gov.au/_data/assets/pdf_file/0007/16279/Landgate-Annual-Report-2015-16.pdf).

<sup>15</sup> Landgate, “Awards,” accessed May 18, 2017; <https://www0.landgate.wa.gov.au/about-us/publications-and-awards/awards>.

<sup>16</sup> Landgate, “Awards.”

<sup>17</sup> “50 Most Innovative Companies 2016,” *Australian Financial Review*, August 18, 2016;

<http://www.afr.com/leadership/brw-lists/most-innovative-companies/50-most-innovative-companies-2016-20160815-gqsicc>.

<sup>18</sup> Land, Approvals and Native Title Unit, “Native Title Determinations,” accessed May 18, 2017;

<https://www.dpc.wa.gov.au/lantu/Determinations/Pages/Default.aspx>.

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