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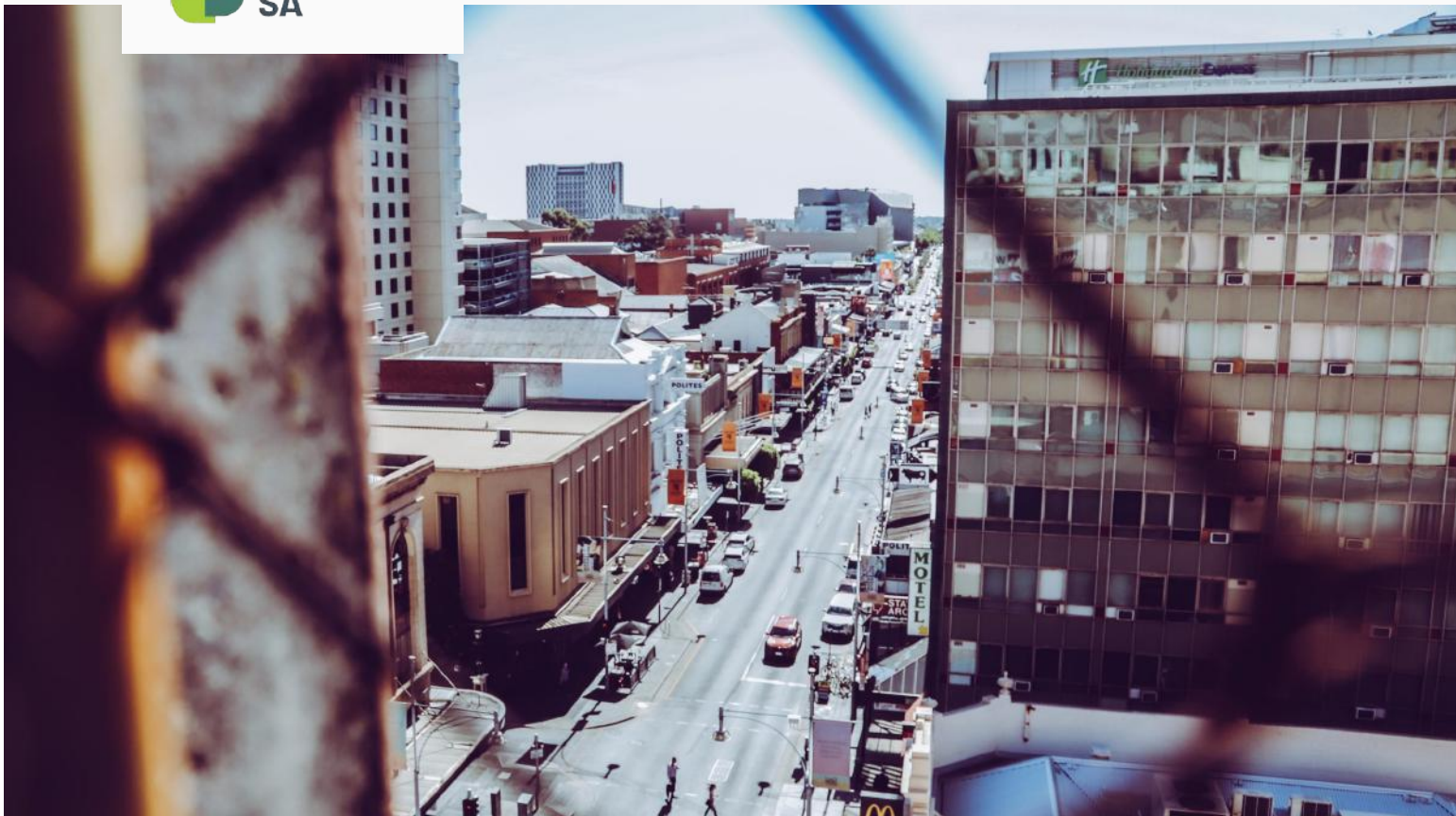# CUSTOMER STORIES

Land Services South Australia modernises its full tech stack in the shift to AWS, saving millions annually

LAND SERVICES SA

# BACKGROUND

Land Services SA (LSSA) was appointed in October 2017 as the exclusive service provider to the South Australian Government for a range of transactional land services and property valuation services previously delivered through the Lands Titles Office and State Valuation Office.

In April 2020, despite being in the midst of a global pandemic, the combined LSSA and Versent teams completed the most significant project of their cloud migration journey, shifting the South Australian Integrated Land Information System (SAILIS) and Electronic Plan Lodgement (EPL) applications to the AWS platform. These applications contain electronic land title records for South Australia.

Over the 18-month cloud transformation project, LSSA and Versent created a full DevOps CI/CD stack enabling deployments at any time of the day with zero downtime. With Versent's expertise, LSSA was able to shift from the data centre, adopt DevOps practices, and modernise their database and services platform.

## CUSTOMER CHALLENGES

LSSA inherited underlying technology that was nearing end-of-life that created limitations around service delivery and execution, in addition to being expensive to run. As LSSA did not have the inhouse cloud-native skills, they selected Versent as their technology and migration partner.

Strategic mandates of the migration are to:

- **Shrink TCO,** as LSSA were experiencing high operating system, computing and storage costs
- **Realise operational efficiencies** via cloud native technologies
- **Minimise risk** in the migration to AWS
- Increase agility and flexibility to effectively support future business initiatives and growth
- **Comply with legislative and security standards,** such as the South Australian Government Cyber Security Management Framework (SACSF)
- Have **robust disaster recovery** and business continuity capabilities for its core applications

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# THE SOLUTION

Versent was selected to design, build and operationalise LSSA's entire tech stack on AWS, based on our extensive public sector experience, including as a migration partner with the New South Wales Land Registry Services (that had similar business requirements to LSSA); and our status as AWS Premier Consulting Partner.

The migration encompassed the modernisation of the hosting infrastructure, network, security systems, controls and services to AWS, such as:

- Moving relational databases from Oracle EE to PostgreSQL, including for their core SAILIS application
- Transitioning away from Oracle JDK to Amazon Corretto Open JDK
- Decommissioning of Red Hat Enterprise Linux by moving to AWS Linux 2
- Migrating over 30 terabytes of data comprising of land titles, images and maps dating back to 1857 from an aging, bespoke solution to AWS S3

# Engagement process

Versent dedicated engineers and consultants to the migration project in a full-time capacity over ten months, closely collaborating and co-locating in Adelaide with the LSSA team. Processes and modern software development principles that were used with LSSA's team of 30 application developers included:

- Best Practice Implementation of AWS and other cloud native technologies
- DevOps CI/CD tools and processes
- The blue-green deployment technique to mitigate risk and enable zero downtime deployments
- An Agile way of working

Through a deep partnership and transparency, LSSA were assured that project milestones were being met, and if there were any hurdles, Versent would own and rectify them. The close working relationship between LSSA and Versent ensured that the final migration components – the SAILIS and EPL web applications – were transitioned from on-premise to AWS on-time, while the team were delivering everything remotely during the peak of COVID-19 restrictions.

"Rather than COVID-19 slowing down our engineering velocity, we were able to increase it," said **Seth van Buren, Principal Consultant for Versent**, who relocated to Adelaide for the engagement until state border closures necessitated remote working in the final weeks.

# ALL-IN AWS

Versent designed the Versent Cloud Foundation platform for LSSA within the AWS environment to support development through to production deployment for applications, both partially and fully automated.

The infrastructure provides the AWS Core Foundations that will serve and support a secure and reliable implementation of any Development, Test and Production workload refactored, rehosted or re-platformed. The AWS Core Foundations includes AWS Organisations, account set up, networking, cloud operations and application lifecycle management (ALM) tools required to build, migrate and support the platform.

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# ONGOING CLOUD OPTIMISATIONS

Post-migration, Versent Managed Services (VMS) have been contracted to operate and optimise the LSSA environment. VMS focus on: right-sizing (examined before go-live and on a continuous basis thereafter); infrastructure decommissions and other adjustments; before subsequently rolling out AWS savings plan and reserved instances (which can potentially reduce parts of the AWS bill by 72%).

Versent have built a service transition and optimisation framework that carries workloads from build into run safely through conducting a comprehensive production readiness review and optimisation analysis.

VMS operates in an extremely tight and collaborative way with LSSA on running their services and applications:

- The VMS team were engaged since project inception, and being a single build and run partner, orchestrated a smooth transition to operations
- Our Managed Services teams are clustered by "pods" servicing a small set of customers. All requests from customers are routed directly to their dedicated pod of CloudOps specialists, meaning issue resolution is expedited due to the Versent support team's innate knowledge of each customer.
- We are in it for the long-term, constantly searching for ways to optimise our customers' cloud environments. Versent and LSSA hold monthly governance forums to flag operational improvements and strategic opportunities.
- VMS integrates seamlessly with the LSSA application teams to support the software development lifecycle

Versent also provides to LSSA:

- Disaster Recovery and Business Continuity services
- Security services including Managed AWS WAF and AWS Shield

# BENEFITS & KEY OUTCOMES

LSSA are now able to:

- **Deploy patches, changes and upgrades with zero downtime** and impact to end-users (previously, downtime could be hours)
- **Scale infinitely**
- **Accelerate new services to market,** with DevOps agility
- **Significantly reduce TCO,** incl. significant cost reduction in underlying infrastructure costs; zero license cost in the transition of Red Hat Linux Enterprise fleet to Amazon Linux 2; retirement of potential risk associated with future licensing changes to Oracle JDK
- **Ensure high availability of end-user services,** due to the inherent reliability provided by AWS coupled with best practice architecture, e.g. AWS RDS has an availability SLA of 99.95%; AWS EC2 (auto scaling, application load balancers) and AWS S3 (host backups and data extracts) have an availability SLA of 99.99%
- **Improved efficiency and accuracy** through automation, which provides real-time performance dashboards and reporting of previously complex log extraction and manipulation

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> *"We have realised significant cost savings in the switch to cloud-based computing, storage and operations. Our core applications are now far more resilient and we are in much better position to respond to dynamic business requirements. Reducing TCO and improving resilience and agility were the key drivers behind the cloud transformation project, and we've achieved all of those objectives,"* stated **Michael Kinnane, Chief Information Officer, Land Services SA**

## KEY SUCCESS FACTORS OF THE PARTNERSHIP

The project success was hinged on the implicit and mutual trust fostered between LSSA and Versent. Our approach of being 'embedded' in the customer organisation meant we were effectively a single, unified team within LSSA.

The cultural fit happened to be perfect – LSSA and Versent team members have built great camaraderie and lasting friendships from their shared project experience.

> *"LSSA have been the ideal partner. We adopted a tight-knit way of working, built on explicit trust and constant verification. Their openness with their strategic ambitions, and day-to-day energy in consulting and 'co-everything' with us on their requirements, were fundamental to our joint success in the migration to AWS."* says **Seth van Buren, Principal Consultant, Versent,** who headed up the project from Day 1.

LSSA are now well-positioned to develop future state architecture patterns, such as:

- **Containerisation** – leveraging AWS Elastic Kubernetes Service (EKS) and the AWS serverless container platform AWS Fargate
- Building a zoned **data lake** – a framework for the governed ingestion of batch and real-time sources

> *"Throughout our transition to AWS, Versent have been with us every step. We confidently rely on Versent's deep cloud-native expertise to guide us on future step changes to flexibly adapt and grow in-line with operational and market opportunities."* **Michael Kinnane, Chief Information Officer, Land Services SA**

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