



# School Curriculum & Standards Authority Case Study

Digital Student Management system on Azure  
supporting 465,000 students

Insight 



School Curriculum  
and Standards  
Authority

# Digital Student Management system on Azure now supports 465,000 students across Western Australia

## The Bell Had Rung for the Legacy System

The School Curriculum and Standards Authority (SCSA) has a goal of achieving world-class standards for education in the vast state of Western Australia. Under the Authority Act 1997, SCSA is required to maintain a student record system. The legacy system of 15 years, managed student information for grades 11 and 12, for approximately 60,000 students. With an expanded scope to include student information for all students from Kindergarten to grade 12, approximately 465,000 students, and an associated uplift in teachers from 5,000 to 40,000, SCSA needed a new solution.



**School Curriculum and Standards Authority**

**The School Curriculum and Standards Authority** - is responsible for curriculum, policy advice and guidelines for all Western Australian schools from K-12.

“We worked really hard to get that system into a positive and stable place where it carried out all the functions we needed. However, it was 15 years old, the system was only designed to manage grades 11 and 12, and we knew that the legacy system wasn’t capable of meeting the needs of the schools with records growing from 60,000 to 465,000. Under the new directive, we urgently needed a new solution.”

**Russell Dyer**, Executive Director - Examinations, Certification and Testing, SCSA

## Teaching an old system, new tricks

Along with the Western Australia (WA) Department of Education and Microsoft, Insight developed and implemented a Student Record Management System (SRMS) for SCSA to support data input from teachers, students and school administration staff. The system collates data to deliver performance reviews, grades, awards, certification, statistical analysis and reporting.

## Demands on the system escalated quickly

“At the end of the year, we run 63 examinations involving 2,000 markers, involving approximately 50,000 students (Grades 11 and 12). The exam marking period is about 4-5 weeks after exams. Once the marking is done, there is a lot of data crunching to come out with final marks for each student.

Add to this, the collecting of grades for the extra 400,000 students, from approximately 1,100 schools, over their 11 years of schooling.


This all needed to happen at the same time. We needed a student records management system that could handle not only our busiest time of the year, but our busiest time ever, in an efficient and secure manner.”

**Russell Dyer**,  
Executive Director - Examinations, Certification and Testing, SCSA

## Top marks to SCSA with the new solution

The single, secure and scalable system brings new efficiencies and is adaptable to future change through a modernised application core that is supplemented by new modules built on Azure based services and married together under a cohesive and consistent user experience.

- Insight was aligned with the Authority's need to be efficient and streamlined in collaborating with Authority subject matter experts – Insight's team were intimately familiar with the Authority, its business processes and systems through previous engagements.
- Re-use of existing functionality and protection of financial investment – the solution re-uses the Authority's existing investments in SIRS and SIRSEA – extending the proven capabilities with a modern platform, services and features to address full requirements.
- Providing a more sustainable cost model for the Authority, and alignment with WA Government ICT strategy – the establishment of a cloud-centric solution for hosting the SRMS and its associated components with consumption-based pricing for resources used, and the ability to adopt further cloud-based services for the benefit of the entire organisation.
- A proven approach that empowers the Authority to have greater visibility and control project costs and scope – Insight's capped-price and agile delivery model ensured that project costs were kept under control while providing the Authority with a mechanism to prioritise the features that were delivered within the project budget.
- A prudent approach to data management, resulting in the saving of effort and costs – Insight's proposal did not require data migration activities to be performed since the SRMS leverages the existing databases and data contained in SIRS and SIRSEA.



The Authority had two legacy systems, SIRS and SIRSEA, to manage their obligations under the Act for academic years 11 and 12. Rather than remove these systems entirely, Insight's new solution was built on top of the existing databases, whilst bringing new security capabilities and cloud services from the Azure platform, for future growth.

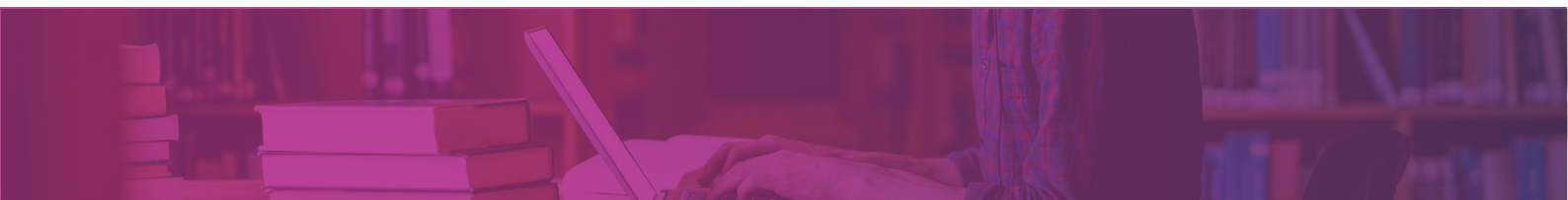
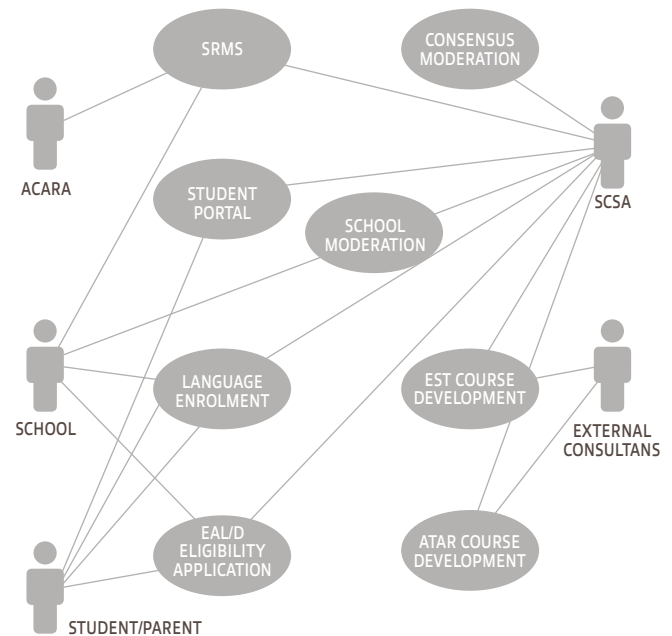
## Dashboards for Authority staff enables standards

“We’re responsible for the maintenance and establishment of standards of education. Yet, we didn’t have a real idea about what was being taught in schools and how assessments and standards were being applied.

With the data now generated and the dashboard providing the visibility into the metrics we need; we are able to make some judgements about how each school is interpreting the standard and act accordingly.

This technology is allowing us to really have an impact on all 1,100 schools in Western Australia, which is something that has never been done before.”

**Russell Dyer**, Executive Director - Examinations, Certification and Testing, SCSA



## Student portals create empowerment and engagement

SCSA had always had a student portal but students did not find it interactive and hence did not actively participate in it. The only information it supplied were exam timetables, and exam results at the end of the year.

The new and improved student portal still allows students to see their exam timetables and results, but also digitises a number of processes such as permission forms, allowing students greater access to extracurricular activities in a more efficient and traceable way. The portal is now a two-way channel where students can receive and input information pertinent to their student life.

The portal also allows students to access an electronic version of their Western Australian School Certificate of Education (WACE) and the statement of student achievement, reducing SCSA’s carbon footprint as they no longer have to print off 25,000 WACE certificates and statements annually. The portal also provides a point of validity for future employers or higher education institutions.

“When Insight came on board, we indicated that we are driven by a school year and very tight schedules. Having a relatively small staff here who have singular foci, we indicated that Insight would have to not only work closely with us, but also work within our timeframe. By introducing us to the Agile methodology, and flexible scale of Microsoft Azure Platform, Insight was able to accommodate the urgency of the project, our tight timetable, and somehow managed to get more done than we even thought possible!”

**Murray Jackson**, Manager Information Systems, SCSA

# How Insight leveraged Microsoft technology to ace the 'test' at SCSA

- To fully leverage the Microsoft Azure platform, all parts of the solution traverse a DevOps process via **Microsoft Azure DevOps**. Azure DevOps dashboards provided SCSA with at-a-glance visibility of Continuous Integration and Deployment (CI/CD) health.
- The redesigned applications are hosted via Microsoft's **Azure Container Services (AKS)** which utilises **Kubernetes** to orchestrate pod lifecycle. The choice of Kubernetes has allowed SCSA to horizontally scale applications within seconds; define and segregate configuration, secrets and workloads into environments (namespaces); provide API routing via Ingress controllers; have simple and near-instant rollback of application deployments; integrate with on-premises infrastructure through virtual network integration and Express Route.
- SCSA presents legacy workloads in **Azure IaaS** and AKS traffic to the Internet via **Application Gateway**. Application Gateway provides TLS termination and Web Application Firewall (WAF) supporting Open Web Application Security Project (OWASP) rule sets.
- SQL Managed Instances** has been selected as the migration platform for SCSA's on-premises database.
- SharePoint Online** and **Nintex** have been utilised to create workflows for managing documents and document permissions through SCSA's review and approval process. Coupled with **Office 365** tools such as Word and Excel, SCSA is able to collaboratively author content and invite external collaborators into the content creation process.
- Azure Data Factory (ADF)** has been used to monitor changes in legacy applications and ensure these are relayed to new applications backed by **Azure SQL Database**. ADF has also been leveraged to coordinate data migrations between on-premises and cloud databases.
- Power BI Premium** provides SCSA with the ability to render key analytics via interactive dashboards as well as within Single Page Applications via embedded capacities. This enables provisioning of analytics to users that sit outside of the SCSA organisation and that do not have Power BI licensing.



"We have lots of peaks and valleys that need to be managed. Azure allows us to do a lot more management of the demand on our usage and storage."

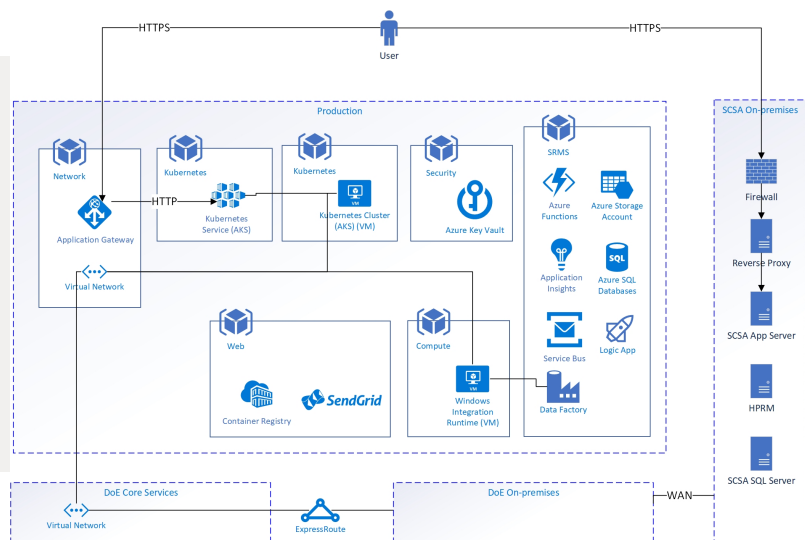
**Murray Jackson,**  
Manager Information Systems, SCSA

### The solution leverages the Microsoft Cloud Technology Stack:

- Azure DevOps
- Azure Container Services
- ExpressRoute
- Application Insights
- Application Gateway
- SQL Managed Instances
- Azure Data Factory
- Azure SQL Database
- Azure Key Vault
- Azure Blob Storage
- Azure Function Apps
- Azure Event Grid
- Teams and SharePoint Online
- Power BI

## Solution Architecture

The SRMS solution is integrated between SCSA's on-premises network, Department of Education's Azure Cloud and SCSA's Azure Cloud. User access to protected resources are managed through Application Gateway.



## What's next for SCSA

"Our team, being small, is still capable of servicing huge numbers of people and that's why I think we can take this further than just Western Australia. As we progress with this and we take on more international schools, we could be looking at 70,000 records coming in each year, and we've built the system to allow for that kind of expansion. Now we're no longer restricted by geography. Students are going to expect to do everything online and they'll be able to do it on the move."

### Russell Dyer

Executive Director - Examinations, Certification and Testing, SCSA

## How Insight is championing innovative education solutions

For the last 2 years, Insight APAC has been making waves in the Education sector, developing innovative solutions and vertical IP to deliver digital transformation outcomes for our education clients.

Insight has helped a number of education institutions achieve a fully integrated Microsoft platform that harnesses the power of advanced analytics, cognitive services, and intelligent agents so students and educators have better in-the-moment data and insights to deliver tailored and enhanced learning outcomes. This includes government organisations like SCSA, Higher Education, and the K-12 sector.

Microsoft  
Partner  


2019 Partner of the Year Finalist  
Education Award

Insight was named global finalist for the 2019 Microsoft Education Partner of the Year award.

Insight has a strong track record of successfully delivering projects with similar outcomes to those sought by the Authority.

We have a long history of providing technology and consulting services to WA Government agencies in education: the Department of Education, Department of Education Services, Department of Training and Workforce Development, the School Curriculum and Standards Authority.