



## Royal Adelaide Hospital uses application integration engine to maximise staff efficiency and streamline medical workflows

Client: Government of South Australia and Celsus

Location: Adelaide, Australia

Industry: Healthcare

### Challenge

- Implement and operate integrated messaging and workflow application technology
- Gain the ability to seamlessly change or add new technology to the system
- Increase staff efficiency and improve patient care from that offered at previous facility

### Solution

- Build and maintain an advanced information and communication technology infrastructure
- Develop and operate an integration engine that integrates 13 different systems
- Operate a wireless locating system for coordinating hospital resources and assets

### Results

- Real-time communication between disparate systems, enabling enhanced service quality
- Maximised staff efficiency and improved medical equipment utilisation
- Improved patient outcomes and staff experiences
- Ability to easily add new technology to keep up with latest best practices and trends

One of the most technologically advanced healthcare facilities in Australia, Royal Adelaide Hospital opened in September 2017 with 800 beds supported by more than 6,000 staff members, with staff and patients transferring from the facility the new hospital had replaced. The hospital is the largest in South Australia and is operated as a public-private partnership by Celsus, in conjunction with the Government of South Australia. As part of a 30-year agreement for operations and maintenance services that continues to 2046, DXC Technology provides management and support services at the hospital.

As part of this agreement, DXC designed, built and now operates an integrated messaging and workflow application that lets medical staff and facilities management at Royal Adelaide Hospital collaborate and share data in real time. The system helps coordinate the timely provisioning of people and medical equipment, increasing operational efficiency, while improving patient care and staff experiences.

### The right assets at the right time

At modern hospitals, an information and communications technology (ICT) system serves as the communications backbone. This system must generate information from numerous sources and deliver it in a timely and efficient fashion. Integrated ICT solutions include support for improved workflows, optimised deployment of staff and equipment, wireless service, and integration to medical records for safe and efficient meal ordering and delivery.

DXC designed and built an integration engine that uses a hub-and-spoke model to integrate 13 ICT and building engineering services-based systems from 13 different vendors. The primary goal of the integration engine is to facilitate the seamless flow of information required to coordinate the process of getting the right people and the right equipment to the right place at the right time. By doing that, hospitals can reduce time lost in tracking down assets and equipment.

DXC designed the integration engine around a series of real-world use cases with an emphasis on maximising the efficiency of people and assets. For example, the system was designed so that before a trauma patient arrives, an operating room can be pre-booked and an elevator reserved for the trauma team to go directly to the desired location.

The integration engine capably handles interfaces and interactions among a wide range of hospital systems, including management of facilities, security and patients' meals. DXC designed and built the mapping and interfaces that allow the data to flow between the various systems to achieve intended end-user outcomes.

To build the integration engine, DXC developed system-to-system diagrams that provided a logical definition of how the systems would interact, then worked with each of the systems' APIs to develop specifications. Support provided by DXC includes application development and management services, as well as testing and quality assurance.



### Improving staff efficiency

DXC also provides support and maintenance for another key component of ICT, the wireless locating system (WLS), which allows managers to know where personnel, assets and equipment are at all times.

The team encountered a challenge about halfway through the construction phase when the technology underlying the WLS changed. Thanks to the integration engine, adapting to the change was simple where without it the change would have added considerable complexity and time.

The WLS provides many benefits, such as giving the Royal Adelaide the ability to use a combination of ultrasound and wireless technology to track assets and at-risk patients throughout the hospital. For example, the system is able to coordinate service requests, such as the delivery of a meals cart to a particular location; then it can identify the closest qualified resource to perform the activity and contact that resource via a mobile handset.

By building and supporting an integrated platform that enables real-time communications among systems, people and services, DXC has helped the Royal Adelaide increase service quality, patient and staff experiences and improve patient care above and beyond what was possible at the previous facility. The messaging infrastructure enhances staff efficiency and has significantly improved medical equipment utilisation.

Another significant benefit is the scalability of the integration engine, which makes it easy for the hospital to add new technology to keep up with the latest best practices and trends. When the hospital wants to introduce new clinical or facility management technology to the ICT, it can be accomplished through the integration engine, reducing the difficulty involved by making it possible to apply the necessary updates and changes to all systems in an efficient, streamlined manner. The ultimate outcome is improved patient and staff experiences as a result of greater operational efficiency.

**About DXC Technology**

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