DELIVERED MISSION AND LIFE-CRITICAL NETWORKS CONNECTING HOSPITALS IN REGIONAL AND REMOTE AUSTRALIA.

VERTEL DELIVERED MISSION-CRITICAL AND LIFE-CRITICAL NETWORKS CONNECTING OVER 100 SITES ACROSS THE STATE INCLUDING HOSPITALS, COMMUNITY HEALTH CENTRES (CHCs), AMBULANCE STATIONS AND HEALTH OFFICES.

One of the states' Department of Health oversees health services delivery via Health Districts and specialty health networks across the state.

Vertel delivered mission-critical and life-critical networks connecting over 100 sites across the state including Hospitals, Community Health Centres (CHCs), Ambulance Stations and Health offices. This helps enable smarter, healthier and safer Australian communities, providing significant economic benefit to the state.

THE CHALLENGE

In 2013, the state's Health department realised it needed to upgrade its existing data carriage services, to enable Health Districts and other state Health entities to improve their services to meet changing business requirements as populations grew and changed, and as medical health technology advanced. According to them, the rapid introduction of ICT continues to impact nearly every aspect of patient care, treatment and research.

TECHNOLOGY IS TRANSFORMING HOW WE LIVE AND WORK THROUGH IMPROVED CONNECTIVITY, INTELLIGENT SOFTWARE AND SMART MOBILE DEVICES. HEALTH AND MEDICINE ARE NO EXCEPTION.

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In particular, increased use of Electronic Medication Management (eMM), Electronic Medical Records (eMR) and medical imaging applications meant that reliable and redundant high bandwidth networking was essential. Security was also an issue.

“Technology is transforming how we live and work through improved connectivity, intelligent software, and smart, mobile devices. Health and medicine are no exception.” say the personnel at the Infrastructure Office of the Health department.

They decided to implement a Health Wide Area Network (HWAN) that would provide for the delivery of low-latency, real-time, multimedia-based applications and services across a converged and virtualised network that would cover the state. This WAN network would future proof the needs of the department as it rolled out its long term ICT strategy.

The network would need in-built redundancy to ensure the delivery of critical services across its network. This was the prime motivation for prioritising the project. Path and media diversity were critical, especially in regional or remote locations where existing infrastructure was limited to a single carrier. Many hospitals and community health sites in regional and remote locations did not have access to fibre or reliable copper services, let alone services provided by diverse carriers.

The WAN provides multiple classes of data network services to hospitals, ambulance services, imaging facilities and Community Health Centres across the state. The WAN interfaces with all Health sites, agencies and entities via means of health ‘service clouds’’.

OUR APPROACH

There was a clear business case for implementation. In order to access the best possible services for each site, the state’s Health department went to tender to create a panel of providers who could service sites within the Health Network. Vertel was selected as a result of its ability to deliver carrier-grade MEF certified services to regional and remote locations in state in a timely and cost-effective manner. Another important consideration was Vertel’s ability to deliver both access and carrier diverse links that provides true redundancy for the WAN network.

The business objective of the project was to implement carrier-grade WAN network that would enable the Health department to:

- Increase the performance reliability of frontline clinical and real time applications such patient records and medical imaging.
- Increase network resilience at large hospitals.
- Increase security for health applications and system access.
- Provide seamless integration and virtualisation of the whole-of-government data centres.
- Reduce costs through consolidation of common gateways into data centres.
- Support the rollout of state-wide conferencing and collaboration.

- Facilitate replacement of ageing technologies such as telephone systems.

Vertel was uniquely placed to assist the department, with these challenges due to three key capabilities:

- **Productivity:** Vertel's solution has the unique ability to provide diverse carrier-grade Ethernet services in regional and remote health locations. While many of these sites have a primary fibre connection, a diverse connection is critical in light of their remote locations for business continuity.
- **Financial Value-Add:** Vertel are able to capitalise on this infrastructure and provide a network that enables other state Government departments to leverage off the WAN network coverage.
- **Agility:** As a niche and nimble carrier, Vertel was able to offer rapid deployment of services that exceeded all of the Health department's technical and performance requirements.

In such a large project, logistics was always a challenge. Issues such as tower location, engineering design, and backhaul requirements were all effectively addressed by Vertel's design and delivery teams.

THE SOLUTION

Vertel delivered apparatus licensed microwave based redundant access links across the state. In some instances, microwave was also used for primary connections, where a fibre build would have had too long a lead time and or would have been too expensive. Vertel's Carrier Ethernet 2.0 services allowed the department to reach the remote locations in regional areas.

The services provided by Vertel are VLAN-based end-to-end, and aggregated to a centralised network to network interface (NNI) interconnect point with Health department's network in the state's Government's data centres in the City.

The first phase of the project was completed in July 2016, connecting multiple sites including Hospitals, Community Health Centres (CHCs), and Ambulance Stations and Health offices across eight regional areas.

The second phase of the project is currently being implemented, connecting more sites across two outer metro health districts with the prospect of providing further services to sites in six more regions.

THE DEPARTMENT'S STAFF NOW HAS ACCESS TO HIGH-CAPACITY NETWORK THAT ENABLES THEM TO BETTER SUPPORT THEIR CLINICAL INITIATIVES AND COLLABORATION AND UTILISE THE RANGE OF E-HEALTH TOOLS THAT ARE INCREASINGLY BENEFITTING HEALTHCARE PROFESSIONALS AROUND THE WORLD.

> "WE WERE IMPRESSED WITH VERTEL'S VISION, CAPABILITY AND EXPERIENCE IN THE HEALTHCARE SPACE. ITS ABILITY TO ROLL-OUT THE NETWORK QUICKLY WITH LIMITED DISRUPTION TO SERVICES WAS A KEY REQUIREMENT OF THIS PROJECT."

Infrastructure Office
The State Health Department

THE RESULTS

The Department's staff now has access to a high-capacity network that enables them to better support their clinical initiatives and collaboration and utilise the range of eHealth tools that are increasingly benefiting healthcare professional around the world.

A good example of the network's resilience and customer support was demonstrated recently when Vertel was able to quickly restore services in the Lismore region during severe flooding in early 2017. Vertel responded rapidly to ensure all eight hospitals in the Lismore region had minimal downtime when power outages and flooding impacted WAN services.

Whilst Vertel's services were not impacted by the power outage and flooding, they were limited to the lifespan of their battery backup. When this period was about to expire, Vertel chartered a helicopter to deliver a generator to Parrots Nest, a mountain about 10 km south of Lismore, where its regional microwave POP (Point-of-Presence) is based.

Vertel engaged local contractors to install a temporary helipad, and also arranged for the refuelling of the generator until mains power was restored. It was testimony to Vertel's ability to deliver mission and life critical networks.

The Health network is more than mission-critical, it is life-critical. Modern medicine depends on reliable communications, which are essential to the delivery of health services to the community, especially when natural disasters hit.

Unfortunately, it is just at the times when these services are most needed that they are most likely to be compromised, making diversity and redundancy as essential components of any modern telecommunications network. It is not just a question of an extra communications link; true network redundancy means multiple access technologies and diverse carriers.

ABOUT US

We are an Australian licensed telecommunications carrier specialising in the design, build and operation of next generation critical communications network infrastructure and associated services. We have over 40 years' of experience delivering critical network services to Government, Enterprise and Service Provider organisations. We specialise in delivering carrier grade and alternate telecommunications infrastructure in non-metro, regional and remote Australia.

We have offices across the country with a national network operations centre (NOC) in NSW that proactively monitors our networks 24/7/365.

Contact us on 1300 837 835 (1800 VERTEL) or info@vertel.com.au.
Visit us at www.vertel.com.au.

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