Airport transforms terminal services and generates new business with single network

"We can now offer services across the airport campus and provide our airlines, tenants and passengers with new opportunities, cost efficiencies and simpler operations."

– Mark Funston, Manager, Information Systems, Melbourne Airport

Since its privatisation in 1997, Melbourne Airport has grown from just under 14 million passenger arrival and departure movements annually, to more than 27 million. Its three terminals currently manage more than 500 aircraft movements every day. More than 12,500 staff work at the airport including police, immigration officials, airline staff, retailers, baggage handlers, engineers and support personnel.

Critical business issue

Melbourne Airport's IT department plays a critical role in keeping aircraft and passengers moving. It manages more than 200 flight information displays, which help regulate the flow of passengers through the terminals. It also maintains the CCTV cameras that help keep facilities secure and airport managers aware of what's happening on the terminal floors. In addition, the IT department is a large-scale network services provider and ensures all airport tenants – including airlines, government agencies and retailers – get the information and communication services they need.

To supply these critical services, the airport relied on an ad-hoc mix of analogue and digital networks that connected about 2,000 separate devices. In 2007, the airport announced a A$330 million project to expand its international terminal, which meant the airport's ICT capacity had to expand as well.

"Our existing bandwidth was insufficient to manage extra CCTV cameras and flight display screens," says Mark Funston, Manager, Information Systems, Melbourne Airport. "We already had bundles of cables over five centimetres thick running several kilometres around the airport, because new cabling, switches and routers had to be installed – often by third parties – every time we connected a service for a new tenant."

The airport also wanted to improve information services. Its 200 flight information screens could only broadcast scrolling flight information. Staff wanted to make better use of these screens, so that information could be varied, as well as targeted to particular points in the airport.

In addition, the airport sought to improve services to tenants that moved frequently around the airport, but often had to wait for third-party contractors to come onsite to connect their phones and private networks.

Solution

To discover better ways of delivering top-quality information services to passengers and tenants, Melbourne Airport engaged Cisco partner, The Frame Group (Frame), to conduct a strategic review of its ICT assets and its tenants' ICT requirements.

The strategic review noted that although the airport was obliged to provide many of the physical requirements for ICT services, including access, most of the revenue for these services went to third-party service providers and did not create efficiencies of scale for the airport users themselves.

Realising its potential to become a direct network services provider, Melbourne Airport was keen to explore different funding models to assess return on investment from various network designs, according to the services they could provide, and the technical support each would require.

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The review concluded that a multi protocol layer switching (MPLS) network – also called a carrier-grade network – would prove more cost-effective over the medium term than a simple network upgrade. Most importantly, it would enable the airport to match dramatically increased passenger and tenant demands as the airport expanded.

"The carrier-grade network was going to be more expensive to implement, but less expensive to maintain in future, and would provide more value for our tenants," says Funston. "We could more easily manage our services to tenants if they were delivered over a carrier-grade network."

Starting at the international terminal extension in 2009 and expanding into other terminals during 2010, Frame deployed an MPLS network. Physically, this comprised Cisco switches and routers and fibre optic cabling – which connected each tenant and airport operating space to a single digital network – as well as new digital flight information screens.

Frame also deployed network management technologies, including Cisco Call Manager 7, which allows new connections to be established instantaneously between any two points on the network.

The capabilities Cisco brought to Melbourne Airport

Besides creating a network that can adapt to future demand, the new network delivered a number of critical new capabilities.

1. Greater control over the public information system

By converting all flight information screens to a digital format, staff can directly control what appears on each screen. For example, they can broadcast restrictions on what can be carried on international flights, or give specific directions in case of an emergency.

2. Cost-effective delivery of all ICT services

All airport and tenant phones and networked devices are connected to a single IP network. This means that a retail outlet, airline or agency that requires a new communications service – such as high-definition video, VPN connectivity to a corporate network or virtual LAN (VLAN) – can have that service deployed on the spot by the airport's IT staff.

3. More advanced airport systems

A more powerful, adaptable network means airlines can deploy more intelligent systems at flight gates. A service called Gatelink allows airliners to automatically download essential flight information such as the manifest, flight details, engine data and cargo information, as they taxi to their arrival gates. This helps speed up aircraft turnaround time, which can be especially tight for large intercontinental airliners.

The benefits to Melbourne Airport

The new network has put airport staff firmly in control of the IT environment, which means they can ensure airlines and tenants get the IT services they need in a manner consistent with the airport's strategic objectives.

"The new network is fast, reliable and easy to manage," says Funston.

PRODUCTS AND SERVICES
Cisco Unified Communications
Layer 3 carrier-grade multiprotocol label switching network
Cisco Call Manager 7

Improved services to tenants

Melbourne Airport's network can now support more than ten times as many devices, allowing for rapid deployment of new flight display screens, PCs, tablet computers and VoIP phones. The network is also more reliable because multiple diverse pathways make it less susceptible to outages.

This increased service can be maintained by a limited number of staff, which means that the airport should be able to adapt quickly as tenant ICT needs evolve over the coming decade. For example, the airport can now stream news channels or entertainment into airport lounges; all the airline needs to do is install a decoder.

Better value

Service consolidation means the airport can provide cost-efficient connections to all airlines and tenants. With bundled voice, data and video services, Melbourne Airport can help reduce overall costs for its customers and simplify communication between the various onsite communities. As a result, this network will improve the long-term economic prospects of Melbourne Airport.

Increased security

With the new intelligent network, intrusion detection systems, monitoring tools and MPLS capabilities, network data security has been dramatically increased, and payment card industry (PCI) standards compliance is now a reality for airport tenants.

Brighter future

Better services will result in more efficient aircraft turnaround, more efficient parking and faster passenger processing. All of these improvements translate into a more enjoyable customer experience, which will make the airport more successful and competitive, and will ensure that it continues to grow.

For more information

For more information on Cisco intelligent network technologies visit www.cisco.com/web/ANZ/products/index.html or contact your Cisco Account Manager or Authorised Cisco Partner.

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