CASE STUDY

ARUBA WI-FI + AIRWAVE CREATE CITY-WIDE NETWORK ACCESS AT ONE OF THE WORLD’S LEADING UNIVERSITIES

The University of Cambridge is one of the world’s oldest academic institutions. The unique structure of Cambridge, 31 colleges and more than 150 departments, poses unique challenges. For Jon Holgate, head of the University Information Systems’ network division, the aim is to build a wireless network to cover the entire city: “Most universities will have a campus. At Cambridge, the city is the campus. We want to make the wireless experience as seamless as possible as users move across the city.”

THE CITY IS THE CAMPUS

Founded in 1209, the modern Cambridge has 18,000 students, and is seen as one of the world’s foremost research universities. As research often requires collaboration Holgate must ensure visitors enjoy the same wireless service as Cambridge students and staff. Implementing an effective wireless network is further complicated by the physical make-up of the University. The University operates out of more than 1,000 buildings; there is a mix of Grade 1 listed, medieval buildings, with three-foot walls, and steel-structured new builds. “We also need to cover parks and outdoors spaces, lecture halls that can go from empty to 300 people in minutes, and 1950s hospitals made of concrete,” says Holgate. “Nothing is straightforward.”

8PB carried on the wireless network

The University of Cambridge has implemented Aruba solutions to deliver city-wide wireless, stretching from the biomedical campus to the south of the city to the new science park development in the northwest. “We require a solution that is rock solid, reliable and consistent,” says Holgate. “Aruba does everything we expect of it.”

REQUIREMENTS

• Establish city-wide, high-density wireless
• Ensure singular management view of 7,000 access points
• Simple and scalable guest access
• Platform on which to develop new IoT and wireless applications

SOLUTION

• 802.11ac Indoor & Outdoor APs
• Mobility Controllers
• Aruba Remote Access Points
• Aruba AirWave for network management

BENEFITS

• Creates overarching wireless strategy for entire city
• Provides singular view of entire access point estate, simplifying management
• Enables the delivery of value services to many University departments, colleges and partners
• Ensures seamless uninterrupted connectivity and mobility around the City

The Aruba solution has proved to be easy, reliable and intuitive. With our manpower resources, we would not have been able to achieve what we’ve achieved without a solution like Aruba.

JON HOLGATE
HEAD OF NETWORK, UNIVERSITY INFORMATION SYSTEMS, UNIVERSITY OF CAMBRIDGE

The Aruba wireless network now accounts for 25% of the University’s annual internet traffic, up from 4% in 2012. “Last year wireless accounted for 8PB of data traffic,” says Holgate. “Many organisations might have 25% of their internet traffic on wireless, but most organisations aren’t acting as node for the Large Hadron Collider at CERN. We carry very large amounts of data on our network.”
TAKing Wireless To Where It’s Needed
To help cover the city, and to take wireless where it is needed most, University Information Systems (UIS) has even handed Remote Access Points (RAP) to users. “The Students Union decided they needed RAPs in pubs and coffee shops. And why not? If that’s where wireless services are being consumed then it is entirely appropriate. It is naive to think UIS always knows best.”

Convince not coerce
The University of Cambridge is comprised of a federation of the 31 colleges, each with their own IT strategy and budget. As the name suggests, UIS supplies university-wide IT services; however, it must collaborate with, and not coerce, the colleges. Until 2012, each college had its own wireless strategy, creating a disjointed experience.

“As of today, 21 of the 31 colleges are now taking our wireless services, and every one of the University departments,” says Holgate. “To convince the colleges to switch the service has to be cost-effective and compelling. The Aruba solution is resilient and allows us to add a service layer.”

Holgate’s team have become skilled in surveying buildings, and creating bespoke designs. Installation often requires specialist carpenters, painted access points, and discrete wiring. “We have to work around a whole range of requirements,” he says. “We’ve become very good at managing complicated installations – and that’s generated positive word of mouth.

Driving added value from wireless
Long term, he continues, the wireless roll-out may reach 7,000 APs – but a count of access points is only half the story: “The focus has to be on value. Counting APs is very one dimensional, we want more depth.”

Plans include up to 40 access points in parks and public spaces, a platform on which to test IoT applications, and using Aruba Meridian to create wayfinding applications for the city museums. Holgate says the aim is for every visitor to or resident of Cambridge to enjoy easy, seamless access to the wireless network. Indeed, much of the early momentum for the wireless roll-out came from Cambridge hosting a stage of the 2014 Tour de France: UIS wanted to make sure the tens of thousands of visitors to the city had decent wireless coverage.

He says the network continues to accommodate huge numbers of visitors. Like other universities, Cambridge provides roaming access to visiting students, researchers and academics. Last year 30,000 visitors successfully accessed the Aruba wireless network.

“Cambridge is a world class centre of research, and research requires collaboration,” says Holgate. “These figures tell me we’re making it easier for visitors to connect and collaborate. That can only benefit our reputation.”

Easy, reliable and intuitive
The scale and speed of the wireless overhaul was an enormous challenge, Holgate continues: “I’m not convinced we could have done this with anyone else. The Aruba solution has proved to be easy, reliable and intuitive.

“We have direct communications with Aruba, on account and technical issues, and we meet regularly. With our manpower resources, we would not have been able to achieve what we’ve achieved without a solution like Aruba.”