Rising to the High-bandwidth Demands of an Evolving Academia

University of Plymouth uses Cisco switching solutions to provide excellence and innovation in teaching.

EXECUTIVE SUMMARY

UNIVERSITY OF PLYMOUTH

- Higher education
- Plymouth, United Kingdom
- 30,000 students, 3000 staff

BUSINESS CHALLENGE

- Support high-bandwidth research needs on demand
- Enable reliable collaboration and communications anywhere
- Keep pace with teaching innovations

NETWORK SOLUTION

- Cisco switches from the core to the edge
- Integrated support for unified messaging and wireless LAN
- Converged solution that supports high-bandwidth data, voice and video demands

BUSINESS RESULTS

- Provides unified messaging and access to voicemail from anywhere
- Enables easier communications and a more reliable and robust network
- Provides ease of management and cost efficiencies through a single platform
- Enables innovative teaching tools, such as multicast lecturing and video conferencing
- Provides better protection against security threats
- Offers a more reliable, flexible and larger-capacity data center

Business Challenge

The University of Plymouth, located in southwest England, is one of the United Kingdom's most prominent universities, with a reputation for innovation across its teaching, research, and enterprise activities. In 2007, The Guardian newspaper selected Plymouth as the country's top modern university.

Prior to deploying its original Cisco® solution, the university's network had become "extremely unreliable," says acting head of networks and telephony Martin Godfrey, and support for that network had been very poor. Then, six years ago, the university deployed a resilient network based on Cisco Catalyst® 6500 Series switches that was easy to manage from a central location and one with which the IT staff was quite comfortable.

In recent years, says Godfrey, the university began encountering situations in which researchers were requiring increasingly more bandwidth, and it was difficult to predict exactly when and where they were going to need it. "We needed to provide our researchers with an infrastructure with which we

could, at any moment, very easily provide access anywhere on our network at 1 Gigabit for the individual user and 10 Gigabit back to the core."

Additionally, the university recognized that advances in networking technology could help them provide improved collaborative tools to their teachers and students and to reach more students more effectively.

Last year, the university decided to deploy a converged and reliable voice and data solution to accommodate the increasing bandwidth demands and to facilitate improved collaboration through enhanced communications, with tools such as unified messaging and campus-wide wireless.

A network redesign and upgrade was in order.

"We needed a network with which we could deliver all the normal things that we do, but would also allow us to react to the unexpected, whenever it turned up, and provide what our students, faculty, and staff needed, wherever they needed it. Cisco allows us to do that."
—Martin Godfrey, acting head of networks and telephony, University of Plymouth

Network Solution

The university chose to implement a Cisco solution that remained anchored by Cisco Catalyst 6500 Series switches at the core and that added Cisco Catalyst 3750-E and 3560-E Series switches, supporting unified messaging and wireless access, across its campus. The Cisco solution supports high-bandwidth data demands, voice, and video, and allows the university to gain significant cost efficiencies, simplified management, and a more flexible, highly secure network.

The introduction of enhanced Power-over-Ethernet (PoE) to the Cisco Catalyst 3750-E and 3560-E Series switches was a strong selling point for the university. Enhanced PoE provides up to 18.5 watts per port on both the Cisco Catalyst 3750-E and 3560-E Series, which enables sufficient single-port power to support the 802.11n Cisco Aironet 1250 Series Access Points and eliminates the need for a separate power injector, an additional Ethernet cable, or a power cord.

"Enhanced PoE is going to be of great benefit for us," says Godfrey, "and it just goes to prove that Cisco is looking forward to all the new requirements with 802, such as 802.11n and any requirements that that may bring with it."

Godfrey says that when the university decided to upgrade its network, it wanted to be certain that the solution would come with significant support from the networking vendor. "It's difficult for us to spare the time to do a lot of training on all the equipment and facilities," Godfrey says. "We wanted a vendor that could provide expertise and that would also make information readily available to us."

"Cisco has enabled us to do a lot of our own provisioning and configuration because there is such a wealth of information available. When we don't have the time to spend on the in-depth requirements and need assistance, Cisco has good, quality resellers that can provide us with all of the information that we need."

Business Results

The deployment of the Cisco solution has allowed the University of Plymouth to effectively and efficiently provide enhanced, high-bandwidth collaborative tools to its students, faculty, and staff.

In addition to enabling on-campus mobility, the solution facilitates video conferencing and multicasting of lectures, which not only allows the university to reach across the physical boundaries of the classroom but is also a greener solution, reducing transportation costs.

For example, the university is involved with the University of Exeter and local National Health Service trusts and hospitals in providing a medical and dental school with facilities throughout the southwest of England. Advanced multicasting is connecting these students with their instructors, allowing them to communicate in real time, just as if they were in the same classroom.

“We have instructors who deliver very high-quality teaching, but who are based in a number of different locations,” Godfrey says, “while the students are dotted all around the southwest of England at various hospitals.

“Cisco was an obvious choice to make that happen.”

The solution also enables the university’s IT staff to provide for everyday research needs while being prepared to accommodate any extremely high-bandwidth research needs on a moment’s notice. “We needed a network with which we could deliver all the normal things we do, but would also allow us to react to the unexpected, whenever it turned up, and provide what our students, faculty, and staff needed, wherever they needed it,” says Godfrey. “Cisco allows us to do that.”

“We already had the fiber infrastructure in place, and it means that, literally, in a matter of seconds we can remove the Twin Gig modules, put in a 10-Gig module, and we’ve completed a replacement link from 1 Gig up to 10 Gig.”

In sum, says Godfrey: “We can accommodate the unexpected.”

The Cisco solution not only addresses the university’s needs today, but also positions the university’s IT staff to address future needs. “Moving to Cisco has provided us with a very reliable system that doesn’t go wrong,” says Godfrey. “It also allows me to move forward and look at new innovations.”

For More Information

To find out more about the Cisco Catalyst Switches, visit http://www.cisco.com/go/catalyst

To find out more about Cisco education solutions, visit http://www.cisco.com/go/education

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