



Connected College Gives Online Learning a Boost in Hertford

Europe's fastest education network takes revenue and collaboration into the cloud



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EXECUTIVE SUMMARY
<p>CUSTOMER NAME</p> <ul style="list-style-type: none"> Hertford Regional College
<p>LOCATION</p> <ul style="list-style-type: none"> Hertfordshire, England
<p>INDUSTRY</p> <ul style="list-style-type: none"> Local Government – Education
<p>COMPANY SIZE</p> <ul style="list-style-type: none"> 900 employees and 12,000 students
<p>BUSINESS CHALLENGE</p> <ul style="list-style-type: none"> Provide improved access to multimedia learning resources Introduce an institution-wide wireless network infrastructure Build a compact, energy-efficient IT infrastructure and simplify maintenance
<p>NETWORK SOLUTION</p> <ul style="list-style-type: none"> Cisco foundation networking technologies Cisco Unified Communications Cisco wireless networking
<p>BUSINESS VALUE</p> <ul style="list-style-type: none"> Improves access to critical online teaching resources Encourages greater interaction between students and staff Enables provision of cloud services to other colleges of higher education to deliver a new revenue stream Reduced the operating cost of its IT estate by 60% through virtualisation



CUSTOMER PROFILE

Hertford Regional College is one of the largest higher and further education colleges in Hertfordshire. Associated with the University of Hertfordshire, the College has more than 12,000 students and 900 staff across two campuses and two vocational centres. It offers a diverse portfolio of academic and vocational courses, and many of its tutors are practitioners in their fields of expertise.

ORGANISATIONAL CHALLENGE

The College recently completed a £65 million redevelopment project to transform itself into a state-of-the-art learning institution. In designing new buildings for its campuses in Ware and Broxbourne, the IT Services team specified a world-class technology infrastructure that would enhance learning and give the College a competitive edge.

IT Director, Peter Dutton, and Network Services Manager, Dr Daniel Hidlebaugh, envisioned two new data centres that would provide the highest quality resources for tutors and would encourage student learning by providing access to engaging digital multimedia information.

By investing in a scalable network architecture, they also saw potential to generate additional income for the College by selling technology cloud services to other educational institutions.

They planned to replace the College's outdated server and storage equipment with virtualised, energy-saving blade servers to consolidate physical infrastructure and reduce operating costs. Supporting this would be a Wireless Local Area Network (WLAN) with innovative mobility features spanning both campuses.

The WLAN had to control use of access points by separate student, staff and guest user networks and have centralised security management. It also needed to have a high-availability design backed with substantial bandwidth to run the new server infrastructure at optimum speed and delivery.

Dr Hidlebaugh says, “We are a forward-thinking college and very focused on leading edge technology. Before the redevelopment, we had 130 servers running various applications and critical systems such as Microsoft Exchange email servers and our virtual learning environment.

“The servers were reaching the end of their useful lives, the average utilisation rate being just five per cent. We knew that if we could virtualise these servers, we could significantly improve system performance and reduce costs at the same time. But to do that, we needed a fast, secure, carrier-class network.”

NETWORK SOLUTION

The College started work on the redevelopment project in March 2007. Upgrading its technology infrastructure began with building the network backbone. Cisco 6513 carrier-class routers support 40 gigabit per second over fibre optic cabling, while Cisco 3750 Series routers run 10 gigabit per second over fibre to classrooms and studios.



Once building construction was completed in November 2009, the College deployed Cisco foundation networking technologies to create a Wide Area Network between the Ware and Broxbourne campuses over fibre and Local Area Networks within each location. The College then implemented a Cisco Unified Communications system and support for wireless connectivity across both sites.

An innovative fixed mobile conversion system that combines Cisco IP telephony and wireless LAN technology is tied to staff mobile phones using GSM gateway hardware and software. Wireless IP telephony runs on Power over Ethernet switches coupled with unified messaging. The network also provides wireless data coverage in areas of the College where there are no fixed connections. Cisco Office Extend is used to provide staff with remote access to the network from home.

Dr Hidlebaugh says, “We now have the fastest-in-class network of any college in Europe and data centres that are 60 per cent more efficient than before. Our technology infrastructure moves us three or four classes ahead of any other educational institution. Before the redevelopment, it was like we had a black and white TV with set-top aerial; now we’ve got full HD with 1000 channels.”

The Cisco network infrastructure and Cisco Unified Communications system at Hertford Regional College was provided by BTiNet, a Cisco Gold Certified Partner. Convergix, a Cisco advanced wireless LAN specialist, provided integration and technical support for the fixed mobile conversion.

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Dr Daniel Hidlebaugh, Network Services Director, Hertford Regional College

BUSINESS BENEFITS

Hertford Regional College's high-speed network infrastructure supports its innovative technology applications and specialist student facilities such as the 18-seat air cabin simulator at Broxbourne used for Air Passenger Services training. 10 gigabit per second speeds allow students to view high quality streaming video as part of their learning. They have fast access to their own workspace and can share information and discuss work with lecturers and other students.

Wireless network connectivity gives staff more work flexibility wherever they are on campus. Also, with Cisco's Unified Communications system, tutors are much easier to contact. Unified messaging means that any message, whether voice or email, can be accessed from Cisco's dual mode phones, a desktop computer or laptop.

By combining this with wireless network capability, staff also have the use of wireless phones to remain contactable. Some staff can also use their mobile phones to access unified messaging and this feature will be available to all tutors by 2011. The College will then roll out the facility to students.

In addition to the educational benefits, the Cisco network helps the College manage campus security by carrying footage from CCTV cameras located around the site. It also uses the network to control door access. Cisco's real-time network monitoring capability allows the IT team to check who is accessing the wireless network at any time and any place on the campus.

"Cisco's networking technology is the cornerstone of our IT infrastructure. Virtualising our servers saves us around £320,000 a year in equipment and electricity costs, and reduces the college's carbon footprint by 860 tonnes per year," says Dr Hidlebaugh. "But it all relies on a network that can deliver exceptional performance every time without fail and Cisco hasn't let us down yet."

The College is now working with Cisco to implement RFID tagging through the wireless network to enable students to use their laptops wherever they want without risking loss of college assets. It is also considering investing in additional blade servers to leverage the network bandwidth and provide private cloud services that can be sold to other schools and colleges in the area.



PRODUCT LIST

Voice and IP Communications

- Cisco Unified Communications Manager
- Cisco Unity
- Cisco Office Extend

Routing and Switching

- Cisco Catalyst 6500 and 3750 routers
- Cisco Wireless Control System
- Cisco Wireless Service Module
- Cisco Access Control
- Cisco Lightweight Access Points

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Dr Daniel Hidlebaugh, Network Services Director, Hertford Regional College



Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

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