

University Creates Flawless BYOD Experience for Staff and Students



Cisco BYOD Smart Solution helps Brunel University provide network access for 17,000 users across 70 buildings

EXECUTIVE SUMMARY

Customer Name: Brunel University

Industry: Education

Location: Uxbridge, London

Number of Students: 15,000

Number of Employees: 2,000

www.brunel.ac.uk

Challenge

- Help ensure consistent BYOD experience for students, staff and visitors across Uxbridge campus, with secure and simple access for different user groups

Solution

- Cisco BYOD Smart Solution with Cisco ISE overlaid on existing network
- Solution integrates with customer front-end portal, enforcing security policies on all user groups

Results

- Helped ensure consistent, campuswide wireless experience for users across 70 buildings
- Expanded from 340 wireless access points to 1070, in place within 12 weeks, two weeks quicker than scheduled
- Improved network performance from 120 Mb/sec to 1 Gb/sec, with 5 Tb of wireless traffic per day (up from 140 Gb per day a year ago)

Challenge

Brunel University is a medium-sized university based in Uxbridge on the outskirts of London. Formed in 1966, it has grown steadily through the incorporation of additional colleges and further education providers, but retains an emphasis on engineering, science and technology. Today, it numbers around 15,000 students and 2,000 staff.

As part of a five-year strategic plan, the university's "Open Kingdom" project aims to create a consistent user experience across the Uxbridge campus, including the provision of wireless network access. This last issue became critical in the summer of 2012, when the Students Union body insisted on wireless access for all residential buildings before starting negotiations on 2013 rents.

"We'd traditionally viewed wired as good enough for everybody," says Simon Furber, network and data centre manager for Brunel University. "What became very clear was that wired wasn't good enough for our students. Wired wasn't their typical network experience. They expect the same experience on campus as they have at home. Students wanted to do their computing anywhere, anyhow, on the go, inside the campus, outside the campus. They didn't want to be a slave to the cable."

Furber and his team needed a solution in place before the January 2013 deadline. They needed it to cover 70 buildings across campus, most of them residential, and for the solution to provide a robust identity system. It would not discriminate between devices; students would be free to use smartphones, games consoles or tablets on the network, for work or play. However, the network needed to differentiate between staff, students, conference visitors and guests, granting the appropriate access to services. Ultimately, with thousands of users bringing their own devices onto the network, it needed to maintain the security of the university's systems.



“The Cisco BYOD Smart Solution puts us at the forefront of students’ expectations of what constitutes a modern university. What we’ve tried to do is to make that experience as seamless as possible, which should give us a clear and competitive advantage.”

Simon Furber, network and data centre manager, Brunel University

Solution

Furber already had a head start on the challenge, having worked on Brunel’s IT team since 1988 and seeing the network evolve in that time. “It is not realistic to rip and replace a network every five years. It’s always going to be an evolution. We wanted to work with a trusted supplier on planning and designing the best possible network, so we formed a strategic partnership with Cisco in 2000.”

“I have no worries getting so close to one supplier: You tend to find that products which are built together, work together. Working with Cisco means better interoperability, lower maintenance cost and clearer lines of responsibility.”

Furber says the relationship with Cisco is vital to long-term planning. “We have to have a plan in place. I want to be one step ahead of the network demands of the University; if we haven’t already anticipated future demands, we at least need to know how to find a solution. Our relationship with Cisco helps us scale our solutions and networks for things we haven’t even thought of yet, while taking advantage of new technologies.”

As part of the network evolution and with the campus due to host Olympic guests, work had already started on expanding the wireless coverage. High-density study areas, including the library and main lecture theatres, were included, with a total of 340 access points. Furber admits that before implementing the new Cisco® Bring Your Own Device (BYOD) Smart Solution, coverage was patchy, and access complicated: “we wanted wireless coverage, but we wanted to simplify the network: one network for staff and students, and another for guests and delegates.”

The Cisco BYOD Smart Solution centralises and automates policy enforcement, security and authentication, and network management. It works regardless of how end users connect, or with what kind of device. Better still, its validated design means the solution has already been stress-tested, making it faster to implement.

The Cisco Identity Services Engine (ISE) can detect blacklisted users, and provides Furber’s team with visibility of who is on the network at any point in time, along with the number and type of devices. Brunel acquired not only the Standard ISE licenses but also the Advanced, allowing it to be more granular with the level of control it could set on different access policies. Because the Cisco ISE can be overlaid on the existing network infrastructure, Brunel could act quickly and have the solution in place over the summer break.

“We chose the Cisco ISE because it delivered against our key business objectives of a single, simplified and secure solution,” says Furber. “We knew the actual technology would work seamlessly with our existing infrastructure, so it was just an addition beyond where we already were. It was also very easy to implement.”



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Results

The result is a single portal capable of identifying different users. Currently, 5800 devices have accessed the network, and each can be monitored on a single dashboard. Cisco ISE matches staff and students against Brunel’s Active Directory, and determines policies accordingly. Conference visitors are identified via the delegate management system, and day guests can be granted “sponsored” access by a member of staff. In addition, Furber can quickly and easily change policies with no interruption to service.

“What we’ve done is seamlessly integrate the Cisco BYOD technology in the backend. We don’t need to send users to an external site, meaning they aren’t put off by unfamiliar interfaces,” says Furber. “The system has the intelligence to make decisions about the services that staff and students should receive.”

Cisco wireless has delivered a win/win solution for the university. Not only does it support significantly more network traffic than before, but it also delivers much faster transmission speeds. Previously, the wireless network dealt with 140 Gb per day, and that has now increased to 5 Tb. The former speed of 120 Mb per second has now increased to a maximum capability of 1 Gb per second.

Free-of-charge wireless coverage has now been established in 70 buildings, more than half of which are residential, with 1070 access points. Work was completed to budget in 12 weeks, 2 weeks ahead of schedule and 4 months ahead of the Students Union demands. Peak access is between 10 p.m. and midnight and from 1 to 3 p.m. during the day, with just a 30 percent drop off in traffic at weekends.

Furber says the evening and weekend access is proof that the change needed to be made to accommodate users’ preferences, but that the project is representative of a broader cultural change. “Traditionally, university networks have been at the forefront of delivering services that people weren’t able to enjoy at home. Now, the experience people have at home tends to be a far richer, far more mobile experience than universities offer. It means we need to respond to what people consider to be the norm, rather than what we consider to be the norm.”

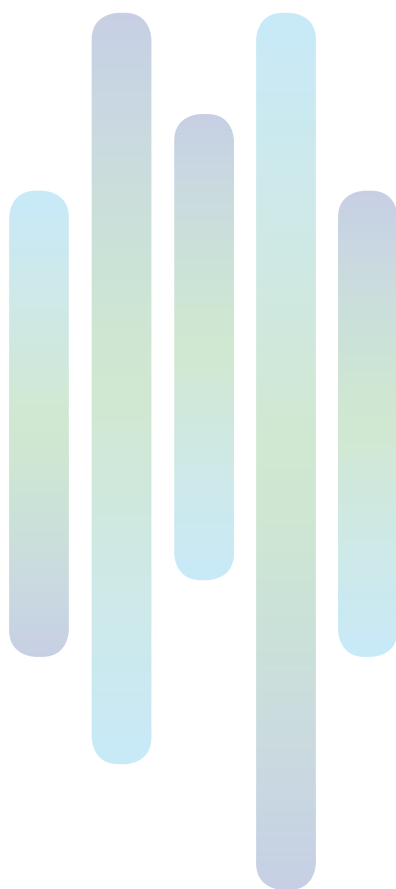
He says it makes no sense to lock students into one approach: “The more rigid we tend to be, the less interested students are. We have to create a flexible and open framework while working within financial reality.”

What this means is that students can use the network to load apps to their smartphones or connect to multiplayer online games on their games consoles. “I don’t think we should determine what the students find relevant to their study,” he says. “We should help them to customise that learning for themselves.”

Game playing and trivial apps are a side issue, he says. In a competitive education market, where students pay £9,000 a year in tuition fees, and with Brunel looking to open up its degree courses to as many as 50,000 remote learners, students demand a better teaching experience. Both remote and campus-based students will want to record and review lectures and join online discussions, and they want to do this from the device of their choice, and from anywhere.

“The Cisco BYOD Smart Solution puts us at the forefront of students’ expectations of what constitutes a modern university. What we’ve tried to do is to make that experience as seamless as possible, which should give us a clear and competitive advantage. It isn’t just about providing access, it’s about providing it with a relevant service context.”





Product List

- Cisco Wireless Services Module 2 (WiSM2)
- Cisco Aironet® 3600 Series Access Points
- Cisco Identity Services Engine with 12500 with Standard and Advanced Licenses'
- Cisco Secure Access Control System
- Cisco ASA 5585-X Adaptive Security Appliance
- Cisco SCE 2000 Series Service Control Engine
- Cisco ASA 5500 Series Adaptive Security Appliances

For more information

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