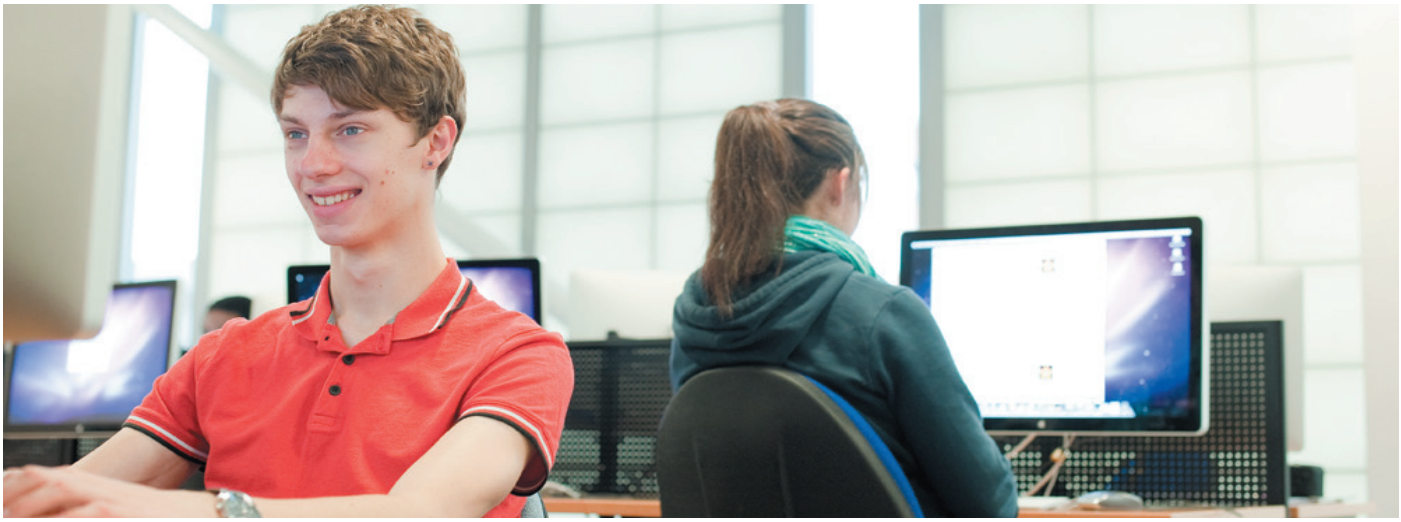
Delivering Better, Greener Education Services

Customer Case Study



MMU becomes first UK university to deploy UCS, transforming IT services efficiency and environmental impact.

EXECUTIVE SUMMARY

Customer Name: Manchester Metropolitan University

Industry: Higher Education

Location: United Kingdom

Company size: 4500 staff and 30,000 students

Challenge

- Deliver improved and more cost-effective IT services
- Accelerate toward cloud and virtualization, while protecting existing storage investment

Solution

- Cisco Data Center Business Advantage vision, architecture, and technologies
- Cisco Unified Computing System

Results

- Consolidation of 20 rooms and 300 servers, providing infrastructure, space, power, and cooling savings
- Provisioning times reduced by a factor of eight
- 10 percent reduction in energy costs now, with full project payback expected in year one

Challenge

Under the Browne Review[1], universities in England are coming to terms with funding reforms on a truly massive scale. These wide-ranging changes propose a shift in England's higher education system, away from one centrally funded by the government to one that is mainly financed privately by students from their future earnings. The move is expected to present universities with a new set of balance sheet challenges.

Manchester Metropolitan University (MMU) knows this better than most. MMU's central campus is situated close to Manchester's city center. There are currently six further campuses: four in other parts of the city and two in Cheshire (36 miles from Manchester). With 30,000 students, and over 1000 courses covering 70 subjects, it is one of the most popular and largest universities in the United Kingdom. In 2012, the institution will have to self-fund the majority of courses, while absorbing 80 percent budget cuts on core educational programs, such as science, mathematics, and engineering.

"Achieving savings was always important to universities; now it's absolutely vital. It means we have to be even smarter in how we spend our money and deliver services," says Phil Range, director of learning and research information services for Manchester Metropolitan University.

Fortunately, MMU is in good shape to successfully navigate these challenges, having decided several years ago to develop its Institutional Strategic Plan and Vision for 2020, the aim of which is to transform MMU into the United Kingdom's leading university for world-class professionals.

Aligned with this vision, the university is undertaking a major investment program, building a business school and student hub (All Saints South, Manchester); a modernized art and design building (Crewe); and a new campus (Birley Fields, Manchester). The end goal will be a 30 percent improvement in space utilization and a rationalization from seven campuses down to three. These centers of academic excellence will feature the very latest innovations in carbon-reducing technologies and IT best practice.

1. Also known as the Independent Review of Higher Education Funding and Student Finance

"We funded the implementation of Cisco UCS with an energy efficiency grant from Salix Finance and The Higher Education Funding Council for England. So far, we've seen a 10 percent reduction in power usage, and we expect the solution to pay for itself within 12 months."

Phil Range
Director of Learning and Research Information Services
Manchester Metropolitan University

Solution

MMU's IT team is both a key enabler and grateful beneficiary of this transformation, which began in 2009, when Cisco was selected to undertake a complete network refresh. "As well as allowing us to deliver IP Telephony and video everywhere, Cisco's proposal also offered the best solution in terms of an intelligent Green infrastructure," says Sean Harradine, ICT Infrastructure Manager for Manchester Metropolitan University.

Based on a Cisco® Borderless Networks design, the new converged, campuswide IP network supports mobility (via 600 Cisco Aironet® 1100 Series access points) and unified communications (currently Cisco IP Telephony and Digital Media Manager), providing faculty, staff, and students with a single platform from which they can instantly access information and learning tools, anytime, anywhere. MMU also elected to have Cisco EnergyWise capabilities added to Cisco Catalyst® 6500 and 3560 Series Switches, giving it the capability in the future to monitor, report, and reduce energy consumption across the entire campus network.

Having laid the foundations for migration to its 2020 vision, MMU focused next on improving the management and delivery of IT services. "We wanted the flexibility to match any approach (cloud, outsourcing, and internal hosting) to any application, in a way that would deliver the best value for money to the university," says Range.

Execution of this strategy is well under way. In 2010, MMU replaced an antiquated student email system with Microsoft Live@edu, a ubiquitous cloud-based service. In January 2011 it migrated all staff from Novell Groupwise to Microsoft Exchange 2010. Also in 2011, the university's Virtual Learning Center will take a different route when it migrates to Moodle. The free and open-source e-learning software platform will be hosted at the University of London Computer Center, in order to take advantage of their local skills and expertise.

Moving to a more agile applications delivery model was also dependent upon the university transforming its own data center capabilities. "Before, we had around 20 servers rooms and 300 physical servers running dedicated services," says Harradine. "In storage terms, that's about 35 terabytes of data. Although server utilization was only in the 10-15 percent range, we were constantly buying new hardware. This caused server sprawl and duplication of workloads. There were no real standardized processes and long lead times to provision new services,"

MMU has eliminated these problems by becoming the first university in the United Kingdom to implement the Cisco Unified Computing System™ (UCS), a next-generation data center platform based on Intel Xeon processors specifically built to accelerate the virtualization process.

"With a small IT team, we were really interested in ease of management and scalability," says Range. "When we compared Cisco UCS with the solution proposed by our server vendor, there was a clear winner. We really appreciated the Cisco engineer's willingness to invest time, not just explaining the benefits of UCS, but also how the system would integrate with our NetApp storage and VMware hypervisor solutions."

The solution incorporates the very latest innovation in Intel microchip technology. "The UCS system is highly scalable and ultra reliable," says Harradine. "The blade server is powered by up to four Intel Xeon 7500 Sequence processors, so it can handle compute-intensive, enterprise-critical applications with ease."

"Time-to-service has been cut by a factor of 8. We no longer have to wait for hardware to turn up and spend weeks installing, configuring, and testing it. One person can now pre-provision a number of VMs over the course of a day."

Sean Harradine
ICT Infrastructure Manager
Manchester Metropolitan University

UCS uses templates to simplify the creation of service profiles, helping ensure consistent policies for a given service or application. Should MMU's IT team need to move workloads from server to server, or to take a server offline for service or upgrade, these templates can be used in conjunction with virtualization clusters to bring new resources online easily and quickly.

Results

UCS is a key element of Data Center Business Advantage, an architectural framework for data center evolution that uses a three-phase methodology: *consolidate*, *virtualize*, and *automate*. For MMU, the end result is tighter integration of servers, networks, and storage systems, which in turn has helped to deliver new improvements in performance and cost efficiency.

All of the University's campuses will be served by this new centralized, multitenancy data center approach. UCS has already been used to good effect, migrating 4500 Microsoft Exchange 2010 users, the first VMware on Cisco UCS deployment of its kind globally.

Over the next 12 months, the university's 20 storage rooms will become 4, as 300 servers reduce down to 15 physical hosts and 150 virtual machines (V/Ms). This consolidation could provide as much as a 40 percent saving on infrastructure, space, and cooling overall.

But it is the way that UCS has automated and simplified operations that has really impressed MMU. "Time-to-service has been cut by a factor of 8," says Harradine. "We no longer have to wait for hardware to turn up and spend weeks installing, configuring, and testing it. One person can now pre-provision a number of V/Ms over the course of a day."

Aside from Microsoft Exchange, the university has about 30 services (databases and file and print services) running on the UCS platform. It has also completed a smooth migration to the new centralized and virtualized NetApp storage environment.

In line with its philosophy for smart investment, MMU has been able to achieve all of this without even risking any of its own money. "We funded the implementation of Cisco UCS with an energy efficiency grant from Salix Finance and The Higher Education Funding Council for England," says Range. "So far, we've seen a 10 percent reduction in power usage, and we expect the solution to pay for itself within 12 months."

Next Steps

UCS will support the university's proposed move to Microsoft Sharepoint, enabling staff and students to benefit from centralized office services and a collaboration space for documents, information, and ideas. Other projects under consideration include using UCS to trial Virtual Desktop Integration. "It's still early days, and we need to fully scope the opportunity. However, the possibility of putting compute processing and memory on UCS blades rather than upgrading hundreds of desktop PCs could make a very attractive business case," says Range.

Product List

Data Center

- Cisco Unified Computing System using Intel Xeon processors

Routing and Switching

- Cisco Catalyst 3560 and 6500 Series Switches

Security and VPN

- Cisco ASA 5500 Series Adaptive Security Appliances

Voice and IP Communications

- Cisco Unified Communications Manager

Video

- Cisco Digital Media Manager

Wireless

- Cisco Aironet 1100 Series Access Points

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