Tangible Return on Investment from Virtual Infrastructure

Customer Case Study

Loughborough University measures UCS financial benefits and deploys Cisco VXI Smart Solution to extract even greater value

EXECUTIVE SUMMARY

Customer Name: Loughborough University

Industry: Higher Education

Location: United Kingdom

Number of Employees: 3000 staff, 16,000 students, and 1500 business community tenants

Challenge
- Confirm IT project benefits with detailed total cost of ownership analysis
- Leverage investment to provide flexible and secure workspace for fixed and mobile devices

Solution
- Cisco Virtualization Experience Infrastructure (VXI) Smart Solution with Cisco Virtualization Experience Client 2211
- Cisco UCS servers, VMware virtualization, and NetApp storage

Results
- TCO halved over five years, providing 227 percent return on investment
- VXI benefits include eightfold improvement in desktop provisioning speeds, headcount saving of two FTE, less risk of data loss, and improved user experience

Challenge

Loughborough University is the premier U.K. institution for sport, and home to more than 40 research bodies and centers spread across 18 academic departments. To improve its competitive edge, the university has invested in transforming its campus network and data center infrastructure. The end goal was to create an agile, collaborative environment where researchers could access the resources they need, virtually and on demand, to keep them ahead of the rest of the world.

The university has conducted an in-depth total cost of ownership (TCO) analysis to learn to what extent expected project benefits have been realized. In addition, it is executing the next stage of its cloud strategy by deploying the Cisco® Virtual Experience Infrastructure (VXI) Smart Solution to 400 users. That move extracts more value from the university's original investment in Cisco UCS servers, VMware virtualization, and NetApp storage.

Solution

Wide-ranging in scope, the technology refresh at Loughborough University included a FlexPod architecture with Cisco Unified Computing Solution™ (UCS™) B-Series Blade Servers, VMware virtualization, NetApp storage, and Cisco Nexus® switching. Other aspects include:

- Cisco Borderless Network utilizing a world-first Cisco Catalyst® Supervisor Engine 2T implementation with Power over Ethernet throughout, providing anytime, anywhere, anyplace connectivity across the campus

- Cisco Unified Wireless Network, delivering high-speed 802.11n performance using 1500 Cisco Aironet® 1142 Wireless Access Points and 150 Cisco Aironet 3500 Series Wireless Access Points with Cisco Clean Air® functionality

- Cisco AnyConnect® for secure VPN connectivity

- Cisco Unified Workspace Licensing, a flexible package covering Cisco Unified Communications and various collaboration options on a per-user basis

CISCO™

> "When we compared the legacy server and network with one based on Cisco UCS, TCO effectively halves over a five-year investment lifecycle."

Dr. Phil Richards
Director of IT
Loughborough University

> "Under the legacy setup, we would have needed around 59 servers in year one, rising to 152 servers in year five, compared to eight and 54 servers with the UCS environment. And fewer servers mean less carbon footprint."

Dr. Phil Richards
Director of IT
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Building on this foundation, the Cisco VXI Smart Solution helps ensure an exceptionally secure and scalable infrastructure for hosting and helping enable virtual desktops and applications, going beyond virtual desktops (VDI) to deliver the new virtual workspace.

"This year, for the first time, our wireless traffic has overtaken wired traffic," says Dr. Phil Richards, director of IT at Loughborough University. "We chose Cisco VXI because it incorporates bring-your-own-device and collaboration applications, as opposed to a traditional VDI approach that focuses solely on the desktop."

Loughborough University is deploying the 400 VXI seats across two different user groups: 200 researchers and professors who rely on their own devices, mainly iPads; and 200 users with generic needs who use the Cisco Virtualization Experience (VXC) Client 2211. The latter is referred to as a zero client. It is capable of supporting two monitors, a USB keyboard, and a mouse (along with four USB ports, audio microphone, and speaker) all energized with Power over Ethernet.

In the Loughborough case, the validated design is based on VMware View 5.0, but equally VXI can operate with other Cisco partner technologies.

Results

The TCO analysis has shown total savings of US$878,789 consisting of 40 percent in current account spending and 60 percent in capital expenditure. "When we compared the legacy server and network with one based on Cisco UCS," says Richards, "TCO effectively halves over a five-year investment lifecycle." Other financial headlines revealed by the study include a 225 percent return on investment and a 22 percent internal rate of return.

Hardware savings account for most of the financial benefits, followed by power and cooling. There are also savings in software licensing, hardware warranty, software maintenance and support, and server administration. In addition, the cost per virtual machine reduced from over $550 to around $250 over the same period. The increased density provided by Cisco UCS means that the university can scale up to deal with growth in video and big data, for example, at significantly lower cost.

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The university regards it as too soon to establish whether the Cisco VXI deployment tells a similar story, although early results are said to be very encouraging. Using Cisco VXI all 400 users can be provisioned using one golden image. Before, it took around half-a-day to onboard a new joiner. Now, that process can be completed in just half-an-hour. "We can do more with less," says Richards. "That time saving equates to a headcount saving of two, releasing more engineering resource to focus on test and development and other higher value work."

The risk of data loss has also been reduced. Using bring-your-own-device and a secure VPN connection, researchers can manipulate and store confidential information in the cloud. And the changeover has been a smooth experience. "Overall the general consensus is that Cisco VXI appears no different to a PC, except we no longer have to wait for all the security updates to be installed," says Janet Hague, executive officer for Loughborough University.

Next Steps

So, what is next for these IT pioneers? "We're already trialing a number of Cisco zero clients with voice functionality built-in," says Clive Woodhouse, head of corporate desktop and relationship management at Loughborough University. "Video delivered over VXI is very interesting, and we're also looking at integrating Cisco Jabber as well." Clearly, innovation never stands still.

For More Information

To learn more about the solutions featured within this case study, please go to:
www.cisco.com/go/vxi

To see an earlier version of this case study, please go here

Product List

Data Center Solutions
- Cisco Virtualization Experience Infrastructure Smart Solution
  - Cisco UCS B-Series Blade Servers

VDI Client
- Cisco Virtualization Experience Client 2211

Routing and Switching
- Cisco Catalyst 6500 Series Switches with Cisco Catalyst Supervisor Engine 2T
- Cisco Catalyst 3750-E Series Switches
- Cisco Catalyst 2960 Series Switches
- Cisco Nexus 1000V Series Switches
- Cisco Nexus 1010 Series Appliance

Security and VPN
- Cisco ASA 5585-X firewalls
- Cisco AnyConnect Remote Access Solution
- Cisco AnyConnect Secure Mobility Solution

Applications
- VMware View 5.0 and vSphere Hypervisor

Storage
- NetApp MetroCluster comprising FAS3170 and FAS2040

Unified Communications
- Cisco Unified Communications Manager
- Cisco Unified Personal Communicator
- Cisco Unity® Connection
- Cisco Unified Workspace Licensing

Wireless
- Cisco Wireless Services Module 2 (WiSM2) controllers
- Cisco Aironet 1142 Wireless Access Points
- Cisco Aironet 3500 Series Access Points