

Customer Success Story

The Client

Leeds Metropolitan University is one of the largest universities in the country with over 50,000 students enrolled on undergraduate, postgraduate, professional and part-time courses. In addition, the 3,000 staff is distributed over 10 sites and three major campuses, including the Civic Quarter site, Headingley Campus and Harrogate College.



The Requirement

Within the production and post-production environment time is money and Sohonet is committed to providing an outstanding high-bandwidth service. It promises to manage a secure and reliable network with zero contention (meaning that transfer times and speeds are consistent at all times), without resorting to the excessive overhead of sustaining massive unused bandwidths. As a result Sohonet was seeking a partner to provide network connectivity to meet these requirements.

The student-centred Great North Uni strives to provide a distinctive student experience and continue to strengthen its solid reputation as a premier place for learning, always leading from the front. This ethos drives the Information and Communications Technology (ICT) development, as the University recognises that state of the art infrastructure is vital to its core activities.

Furthermore, student numbers have more than doubled in the last ten years and the University has expanded through considerable estate development, transforming its Civic Quarter campus with additions such as Cloth Hall Court and Old Broadcasting House. This has resulted in a requirement to extend the University's Local Area Network (LAN) to new remote sites across the city.

Becoming a world-class regional university

With computing becoming an increasingly integral part of running an educational institution, the ICT network is now core to sustaining the business. It delivers all mission critical academic, staff and support applications including the managed / virtual learning environment, student portal and student enrolment. Voice services are now carried over the network and there is more emphasis on using video as an information delivery mechanism. Fast and reliable access to services and information is paramount across all aspects of University life - resulting in pressures to ensure optimum resilience and increase overall bandwidth availability.

“Continued provision and development of high-speed network infrastructure is essential to support academic and research applications, facilitate prompt communication and provide access to services across the campus.”

Campus network protocol – setting the standard

The Leeds Metropolitan University network uses Internet Protocol as its principal communication protocol, in line with JISC and the UK Education and Research Network Association (UKERNA) strategy for SuperJANET. This is delivered over Gigabit Ethernet using fibre optic technology and Nortel Ethernet Switching Products providing a reliable, resilient and high-bandwidth pervasive network between all buildings and campuses.

Migration to Gigabit Ethernet and Layer 3 switching technology has taken place over the last three to four years as the University has moved away from an Asynchronous Transfer Mode (ATM) based network. The usual market drivers led to this decision, as the University had a strong attraction for the benefits and cost effectiveness of the new infrastructure, which met all requirements for a high bandwidth campus network needing to support multiple applications, such as voice, video and data.

The network also includes high capacity external access to national and international facilities via the Yorkshire and Humberside Metropolitan Area Network (YHMAN) to connect to SuperJANET5 managed by UKERNA. It currently provides gigabit connectivity with resilience and the service provided by YHMAN, as well as being very reliable, is also scaleable for possible future bandwidth requirements.

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The move to optimum resilience and bandwidth availability

The University's ongoing pursuit to provide a richer and more efficient learning experience across the internet means that network diversity and resilience is paramount.

The network carries all voice, data and multimedia traffic between campuses and remote sites 24/7 – with more IP telephony handsets and video applications coming on board. So the pressure is on. Tony's team has utilised the 'SMLT' functionality of the Nortel infrastructure to improve resilience and reliability through the support of multiple active links from each edge 'stack' to two separate core devices. In addition there has been a significant increase in the number of VLANs and associated subnets deployed in order to contain faults and make the network more manageable. Tony is now confident that the University manages a network that provides a sound platform for further development with a clear upgrade path.

Expanding horizons for an exceptional learning experience

Over the last three years the University has acquired and developed a number of new buildings to accommodate its exceptional growth. This has resulted in a programme of LAN extensions to increase inter-site connectivity in a resilient and cost effective manner.

Due to the need for bandwidth availability and resilience, Tony's team felt that a private dark fibre network solution would be the best way forward. This will ensure that the University is using permanently-connected communication links dedicated for its exclusive use, providing instant or constant access between all locations.

Furthermore, dark fibre provides virtually unlimited bandwidth, putting the University in complete control of the type and number of applications it runs over the network. To develop these ideas, the University turned to FibreSpan, a telecommunications company with a proven track record in providing cost-effective and resilient dark fibre networks.

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**Tony Crossland,
Computing Services:**
"We have been working towards building a truly pervasive network with no single point of failure and rapid fail over in the event of a problem. We are running critical applications that students and staff depend upon around-the-clock and consequently, we must keep downtime to an absolute minimum."

"We wanted to extend the network using a scaleable and cost-effective solution to ensure that our investment would meet the current demands but also provide flexibility for future application delivery," says Tony

"We decided to work with FibreSpan for many of our estate developments as they provide a solution that fits with our network topology and balances cost and benefit in terms of bandwidth and resilience," says Tony.

"Speed of deployment is also essential, as projects often come on-line quickly and we need to respond flexibly".

LES circuits were not competitive over the distance, especially when seeking to provide a resilient solution, which would require the University to purchase two LES circuits to achieve similar resilience as a private fibre network. Tony and his team worked with FibreSpan to develop the network to provide a solution with no restrictions.

High-speed benefits to thousands

The infrastructure installed by FibreSpan is a multi point-to-point network covering a total distance of 2km which was installed in five phases over a three year period to fit with the University growth strategy.

- 2004 The Electric Press in Millennium Square is home to the University's School of Film, Television & Performing Arts, incorporating the Northern Film School - featuring fully-equipped studio spaces, editing rooms, a screening room and production offices.
- 2005 Cloth Hall Court now accommodates Leeds Law School.
- 2006 The Old School Board is home to the School of Accountancy and Financial Services.
- 2006 Architecture and Landscape students and staff are now based at Hepworth Point.
- 2006 The former BBC Headquarters opened as Old Broadcasting House - a meeting place for the arts, enterprise and students, supporting business and finance in the city.

The network consists of 48 single-mode fibres and combines microduct and conventional ducting to provide the most economically viable network solution and to overcome special engineering difficulties.

Installed throughout a major city centre, the FibreSpan team worked closely with local planning departments to attain the necessary permissions and completed each deployment with the minimum of disruption. This included one section crossing a main road into the city (Woodhouse Lane) which was completed in less than a day.

Conclusion

There was strong competition and the decision was hard, but FibreSpan proved that it was able to meet Tony's desire to have dark fibre, which he was concerned would not be an affordable option initially. The network is completely future proof and Computing Services has complete control over the applications that it runs over the network.

Leeds Metropolitan University is not resting on its laurels and continues to develop its network services to support a virtual learning environment and enhance teaching environments, as well as achieve general operational and staff efficiencies.

"The University will continue to support a single integrated networking environment conforming to standards adopted by the communications industry and academic community."

"We are pleased with FibreSpan and the network service they provide. They have enabled us to build a reliable high speed LAN based on leading edge technologies as our estate expands. They are fast to respond and have been able to deploy bespoke networks rapidly upon order," concludes Tony.