

# CUBE OPTICS provides cost effective WDM solution to The University of Nottingham



## **The University of Nottingham Challenge:**

The University of Nottingham's data network had multiple links running at 10Gig between large central campuses, a requirement for additional dedicated connectivity between the data centres was required to support resilient deployment of key services including storage, backup/restore and email.

The requirement was to provide 6 new 4Gbps Fibrechannel links in parallel with the existing routed IP 10Gbps backbone links across two diverse fibre optic paths between the data centres, three on each path.

Initially the University looked at deploying Dense Wave Division Multiplexing (DWDM) equipment at three locations to support this requirement. The University provides operational management of the East Midlands Metropolitan Area Network (EMMAN) in partnership with Nottingham Trent University, and EMMAN has made a significant investment in an optical network based on Ciena DWDM equipment. Thus it seemed the right way forward was to simply replicate this design locally.

However, there were concerns over the cost of the solution, particularly as this was providing enhanced bandwidth between just two locations and there would most probably be a need to apply the same technology to other parts of the backbone in the future. The less costly and simpler Coarse Wave Division Multiplexing (CWDM) technology had been investigated but the University could not find a supplier who offered anything higher than 2.5Gbps for each channel.

## **Cube Optics' Solution:**

Cube Optics had supplied details of their product range to the University during this time and it became clear that they could provide the required 4Gbps channel operation. Cube Optics could also supply an inexpensive transponder module which would provide a buffer between the end equipment and the CWDM optics. This was seen as crucial to the design, as it removed the requirement for installing coloured CWDM optical interface modules into the end equipment, which is regarded as a high risk area for potential future problems for support engineers. The transponder also provides some visibility of the channels via a web-based management module and allows the end equipment supplier to source their own preferred interface modules which keeps maintenance issues at bay.

A key aspect of the design was the need to preserve the existing 10Gbps bandwidth on the fibre links between the backbone routers. This was easily accommodated by the provision of a separate clear channel on the multiplexors which operates at the wavelength of the existing Xenpak interfaces on the routers.

## **The Benefits of Cube Optics' Solution:**

Phil Harrison, Network Team Leader, University of Nottingham Information Services stated, "Cube Optics helped us through the initial requirements stages and facilitated timely delivery and after sales support. As the technology was new to the University, we specified a number of acceptance tests to prove the original concepts and to check it worked properly with our end equipment. Everything performed as predicted and we have been running service traffic over the equipment since January 2008. We have found Cube Optics to be an innovative yet reliable supplier who delivered on time and responded to all our enquiries and support issues promptly. We look forward to working with them in the future as our bandwidth needs increase."

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Francis Nedvidek, CEO of Cube Optics commented, "Cube Optics are pleased to play such an important role in providing a robust but cost effective solution to one of the leading Universities in the UK. Providing a 4Gig Fibre channel over CWDM in a cost effective manner enables the University to spend its budget wisely to the benefits of all its students and staff."

## **About The University of Nottingham**

The University of Nottingham is ranked in the UK's Top 10 and the World's Top 70 universities by the Shanghai Jiao Tong (SJTU) and Times Higher (THES) World University Rankings.

It provides innovative and top quality teaching, undertakes world-changing research, and attracts talented staff and students from 150 nations. Described by The Times as Britain's "only truly global university", it has invested continuously in award-winning campuses in the United Kingdom, China and Malaysia. Twice since 2003 its research and teaching academics have won Nobel Prizes. The University has won the Queen's Award for Enterprise in both 2006 (International Trade) and 2007 (Innovation — School of Pharmacy).

Its students are much in demand from 'blue-chip' employers. Winners of Students in Free Enterprise for three years in succession, and current holder of UK Graduate of the Year, they are accomplished artists, scientists, engineers, entrepreneurs, innovators and fundraisers. Nottingham graduates consistently excel in business, the media, the arts and sport. Undergraduate and postgraduate degree completion rates are amongst the highest in the United Kingdom.

## **About Cubo Optics AG**

Cube Optics uses proprietary technologies to supply customers with extraordinarily compact, high performance and low-cost fiber optic devices. Products extend from components used by OEMs to custom designs imbedded into subassemblies to complete stand-alone systems installed with carrier-class network operators. Our exceedingly adaptable optical building blocks enable creative and cost effective solutions for data communications, telecommunications, industrial sensors and medicine. Cube Optics is known to European Carriers for offering lowest-cost access network solutions since Cube Optics enabled the roll-out of the major European Local Loop Unbundling projects with more than 10,000 passive multiplexers being deployed during the last 24 months.

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