

Case Study

Next Connex to supercharge fibre connections between UK data centres using Huawei's Optical Networking Solutions

Next Connex, along with networking partner Magdalene, is set to offer UK data centre customers resilient, competitively priced, and flexible fibre connections between major UK data centres.

"Huawei is a global leader in so many of today's networking technologies, and the most innovative company in the switched OTN market. We choose Huawei because it was the only company with the roadmap in place to enable us to deliver the services our customers want." Mark Fitchew, CEO, Next Connex

Background

The UK has one of the world's most dynamic and fastest growing data centre industries. Growth is not limited to the London area as more and more businesses require top-level data centre space throughout the UK. Next Connex (<http://www.nextconnex.com>), founded in 2010, has positioned itself to meet the market demand of data centre customers for reliable, scalable, and flexible fibre connections.

As of June 2013, Next Connex, along with partner Magdalene (<http://www.magdalene.co.uk>), is building a network that will soon provide 8TB of connectivity in Southern England and (by 2014) will extend to the northern cities of Manchester, and Leeds. Next Connex chose Huawei Enterprise to provide the optical networking equipment to run this network. The network will run on dark fibre provided by Geo (<http://www.geo-uk.net>).

"For us, the goal is to provide highly flexible fibre connections with short installation lead times to data centre customers throughout the UK. In order to do this, we chose Huawei, who is rightly viewed as a market leader both globally and in the UK for optical networking transport." Bob Griffiths, Managing Director, Next Connex

Next Connex's chosen partner for this project is UK-based network solutions integrator, operational management and maintenance provider Magdalene, which has been a long-standing partner for Huawei in the UK telecom market.

"Next Connex is a young company, but one that is aiming to be a nimble market leader in data connectivity solutions for several UK market sectors. Based on their goals, we recommended Huawei's optical network solutions. Not only was Huawei's OTN solution the most flexible and cost effective, but also Huawei gives them a very recognizable and trusted brand in the UK optical market. Huawei stands out as a leader since such a large part of the UK's telecom infrastructure runs on Huawei solutions." Jeff Mitchell, Account Director, Magdalene

Key Challenges.

The demand for the services offered by Next Connex is quite strong: according to analysts, the UK data centre market is the largest in Western Europe and growing by about \$2.8-\$3.0 billion dollars per year. While London remains the largest data centre market in the UK (and in Europe), there is increasing demand to build out data centre capacity in the rest of the UK. The reasons: the London market is extremely congested, power supplies are quite limited, and (most importantly) many companies require that their data be stored in back-up facilities outside London. This growing market needs connectivity.

A major challenge for these geographically dispersed data centres is limited availability of fibre connections. Traditional service providers may not be willing to create diverse and resilient paths between the growing number of facilities. The construction costs are quite high, especially for incumbent providers who may operate under a strict regulatory environment. For this reason, Next Connex has a business model which can efficiently and economically meet the needs of the market.

The target market for Next Connex services include:

- Wholesale services to other carriers.
- Large data and IT companies, including systems integrators, service providers, ISPs, MSPs, and ICT companies.
- Private businesses that want reasonably priced backhaul, such as financial services, banking and insurance.

“Our business model is to connect Data Centres to each other and the internet so that customers have a choice. We are Data Centre neutral and we provide connectivity between the Data Centres where customers choose to locate their equipment. While we don’t cover every Data Centre in the UK we have picked key Data Centres and connected them diversely and intelligently. We provide resilient paths between Data Centres and offer customers cost-effective alternatives.” Richard Auld, Commercial Director, Next Connex

Partner Magdalene further explained the unique selling point for the new network. According to Jeff Mitchell, *“Next Connex will target locations that may be under-served by current networks and provide high bandwidth connectivity to the selected data centre sites. They will connect to data centres which have limited bandwidth in place, or may not even be connected to a sophisticated optical network at all.”*

Solution.

For Next Connex, a key challenge was the find a solution provider that would allow them to provision the network in a highly flexible and scalable way. Working closely with Magdalene, it was clear that Next Connex needed a vendor with OTN switching capabilities to deliver these services. OTN will allow Next Connex to quickly deliver circuits at speeds up to 100G (including 100Mb, 1G, 10G, 40G and 100G). Next Connex can deliver the required connectivity avoiding additional equipment requirements or less efficient use of fibre.

Next Connex and Magdalene identified certain key requirements for the fibre network and set out to identify vendors who could meet these requirements, including:

- Flexible: Foremost, Next Connex needs to be able to efficiently utilize bandwidth and wavelengths among their customers and seamlessly scale the network in line with customer connections.
- Scalable: The ability to add and drop services at any point in the network, plus the ability to increase or decrease bandwidth as needed.

- Efficient: Dark fibre is limited by its cost and availability in the UK, therefore the network needs to make full use of available wavelengths.

- Total Cost of Ownership (TCO): To be successful in market with a number of well-established competitors, the network needs to cost effective to acquire and operate. For Next Connex, a competitive price per port (1G/10G) is required.

Next Connex's partner for this project is leading UK networking firm Magdalene, whose relationship with Huawei dates back over 10 years. Magdalene is also the network management partner for dedicated fibre provider Geo, which Next Connex viewed as a great benefit.

"Next Connex valued not only the outstanding benefits offered by working with Huawei, the global market leader in WDM and transmission equipment, but also the added benefit of working in partnership with Magdalene UK to provide us with a one shop stop for deployment, monitoring, and management of the hardware and also of the underlying fibre and node infrastructure." Mark Fitchew, CEO, Next Connex

Following an in-depth procurement process where some of the leading vendors of Transmission equipment in the Metro/Enterprise space were evaluated, Next Connex announced its decision in May of 2013. The Huawei OSN1800V proposal provided in partnership by Huawei with Magdalene was selected as the winning bid.

End-User Benefits.

For Next Connex, the most important benefit of choosing Huawei was the flexibility and scalability of Huawei's switched OTN solution, including:

- The ability to control and manage customer provisions at service level: Next Connex can manage individual circuits down to 100M. Therefore, rather than only offering wavelengths, individual circuits can be provisioned and fully managed for customers.

- The network is designed to support 40 x 100G wavelengths, therefore the ability to provide switched OTN was a must to ensure this capacity can be efficiently allocated. With Huawei's OSN1800 OTN solution, Next Connex can initially share 10G wavelengths among customers (and in the future at 40G/100G).

- Ease of Management: New circuits or nodes can be seamlessly added to the network very quickly. According to Mark Fitchew of Next Connex: "With the Huawei solution, we can add a circuit or increase bandwidth in a very short amount of time, almost the same day. The only bottleneck will be the cross connect service in the data centre."

"The Huawei 1800V platform offers not only the traditional DWDM service with ultra-low latency, and exceptional network management but also OTN switching capacities for unified transmission of multiple services at different rates, reliable protection, and longer-distance transmission with forward error correction.

The OTN switching capacity in the OSN1800V platform allows for encapsulation of all services over a single "bearer" network, from low-rate services to high bandwidth services (such as 10G services of any protocol) into OTN frames for transmission. It allows the transmission of various service types (voice, data, storage and video) in line with the evolution from TDM to Ethernet/data services." Xabier Merino, Head of Projects and Development,

Next Connex Huawei's commitment to the UK market and to local support was also critical for Next Connex. With a new 140,000 square foot office complex in Reading and planned investment of £1.3 billion into the UK economy over the next 5 years, it is clear to Next Connex that Huawei will be able to offer efficient and high-quality local service in the future. Mark Fitchew explains: "The message for our customers is that we have chosen an innovator and world-leader in OTN technology who has a major presence in the UK."

TCO was of course also important for Next Connex, especially in the context of a competitive market for fibre connections in the UK. Next Connex needed to stay within a certain budget for equipment, support and maintenance. Huawei and Magdalene were able to meet this budget, ensuring that Next Connex can offer competitively priced services.

Specifically, they enjoyed the following cost savings over the life of the network:

Data Centre Space: The 1800V fits into the small spaces that are common in UK data centres, thus saving on rack space costs.

Initial outlay: The Huawei solution's initial network cost was very competitive.

Power Consumption: Power savings are critical to Next Connex which operates in a market where power is expensive and in short supply.

Price per Port: With a very high capacity, the Huawei solution offered the lowest price per port.

Efficient Use of Bandwidth: The Huawei switched OTN solution offered the most efficient use of bandwidth, delivering 40 channels for customer use, while competitors reserved up to 8 channels for management and monitoring.

"In terms of marrying Magdalene services and Huawei support, this gives the customer a very attractive TCO and the most competitive life-time ownership cost." Jeff Mitchell, Account Director, Magdalene

The Next Connex Network.



Next Connex has ordered a diverse dark fibre ring from Geo Networks that runs from NGD Newport over the new Severn Bridge to THN in London with Network access points (POP's) along the route at Bristol, Swindon, Newbury and Equinix DC LD5 in Slough. This is phase 1 of the network and it should be active in September of 2013.

Phase 2 of the network will run from THN to Birmingham (NEC) via Hemel Hempstead, Milton Keynes and Leicester. Once phase 1 is complete, Next Connex will place an order on Magdalene to deploy the Huawei transmission kit along the phase 2 route.

Phase 3 will complete the Southern ring between Birmingham NEC and NGD Newport via Tewkesbury. This will be the only fully diverse routed network as this route will go north of the Severn Estuary between Tewkesbury and NGD. Once phase 3 is complete Next Connex will have a fully operational 4TB fibre network covering Southern England. Next Connex will then start working on delivering a Northern Ring working with Geo Networks and Magdalene which will extend up from Birmingham to Manchester via Wolverhampton and Stoke then over to Leeds and then back down to reconnect with the southern ring at Leicester via Doncaster and Nottingham.

About Magdalene.

Magdalene provides comprehensive independent solutions to address the individual needs of customers throughout the Telecommunications Industry. In-house capabilities encompass all phases of a network life-cycle, from requirements capture through network design, procurement, project delivery, complete maintenance services to a full suite of network operations offerings. The company is headquartered in St. Ives near Cambridge with offices in Paris and Belfast. Magdalene has facilities dedicated to Marshalling and Logistics, Network Operations and Testing, all specifically designed to support managed service offerings. Magdalene have been supporting the UK fixed and mobile carrier industry since 1996.

For more information please visit: <http://www.magdalene.co.uk>

About Huawei Enterprise Business Group.

Huawei Enterprise Business Group (“Huawei Enterprise”) is one of the three business groups of Huawei, a leading global information and communications technology (ICT) solutions provider. Leveraging Huawei’s strong R&D capabilities and comprehensive technical expertise, Huawei Enterprise provides a wide range of highly efficient customer-centric ICT solutions and services to global vertical industry and enterprise customers across government and public sector, finance, transportation, electric power, energy, commercial businesses, and ISPs. Huawei Enterprise’s innovative and leading solutions cover network infrastructure, unified communications and collaboration (UC&C), cloud computing & data center, enterprise information security, and industry application solutions.

For more information, please visit: <http://enterprise.huawei.com/en/>

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