Transforming Islands into Digital Economies

Customer Case Study

JT Group paves way for Jersey's social and economic transformation with pioneering Cisco fibre-to-the-home architecture

EXECUTIVE SUMMARY

Customer Name: JT Group

Industry: Service Provider

Location: United Kingdom

Number of Employees: 436

Challenge

- Empower consumers and key industries with broadband connectivity
- Reduce island's reliance on financial services by attracting wider business investment

Solution

- Fibre-to-the-home network comprising Cisco Catalyst 4507 switches and ASR 9010 routers connecting to Genexis Optical Network Termination equipment at the home
- Integrated with Genexis Automatic Provisioning System and NetAdmin software, virtualised on Cisco Unified Computing System blade servers
- Designed and validated by Cisco Advanced Services to help accelerate and de-risk all project elements, including third party

Results

- Up to 1Gbps connectivity ultimately available to every home and business
- Consumer take-up of higher speed services in advance of business case assumptions
- Expected two-fold reliability improvements with commensurate cost savings

Challenge

The JT Group (JT) is the government-owned service provider on the largest of the eight Channel Islands off the Normandy coast of France. It serves a population of about 100,000 citizens and 42,000 homes, along with many leading financial services organisations. In fact, of the world's top 20 banks, 18 have a presence in the island, along with many legal and insurance firms. They generate more than 40 per cent of Jersey's annual income and, in spite of measuring just 116 square kilometres (45 square miles), the island is estimated to manage two per cent of all global wealth.

The island faces unique challenges owing to its geography. Because of its importance as a financial centre, Jersey depends critically on three undersea cables: two linked to the south coast of the United Kingdom, with a third providing instant access to European markets via France.

Like many operators, JT has long relied on an ageing copper network for its home connections. Large enterprise customers were already equipped with fibre-optic links, but many small businesses and consumers lagged behind. To help close this digital divide and provide equal opportunities, JT sought to transform its infrastructure and offer next-generation broadband connectivity to all.

Solution

Although many service providers are busy installing optical fibre in their access networks, they often opt for a FTTC (fibre-to-the-cabinet) solution to make use of the historic investment in copper links in the last mile to the home. This approach is less capital intensive than running fibre directly to premises. Deploying a large number of street cabinets, however, leaves the network vulnerable to faults while demanding greater expense on maintenance, support and upgrades.

Rather than adopting a classical Gigabit-Capable Passive Optical Network (GPON) approach, following a tender and consultation on the architectural alternatives for an optical upgrade, JT saw a clear business advantage in adopting a fibre-to-the-home (FTTH) model, based on a point-to-point Ethernet solution.

"We felt Cisco was more technically advanced and reliable, as well as being more likely to offer the best upgrade path. It was vital to have a supplier who was going to be around for the long term and would keep developing and investing in new technology. My view is that Cisco has the best kit, and it's got the best future vision of any of its competitors."

Graeme Millar
CEO
JT Group

Cisco was selected to provide the gigabit access, distribution and core networks across eleven exchanges on the Island, effectively providing the complete active infrastructure end-to-end and thereby eliminating any potential issues with inter-operability.

"We felt Cisco was more technically advanced and reliable, as well as being more likely to offer the best upgrade path," says Graeme Millar, chief executive of JT Group. "It was vital to have a supplier who was going to be around for the long term and would keep developing and investing in new technology. My view is that Cisco has the best kit, and it's got the best future vision of any of its competitors."

To help accelerate and de-risk the project, Cisco Advanced Services supplied both high-level and low-level architectural designs, along with testing and commissioning of all project elements, including third party components.

The FTTH network comprises Cisco Catalyst® 4507 switches and Cisco® ASR 9010 routers, which in turn connect to 42,000 Genexis Optical Network Termination devices being installed at the customer's premises. Designed to deliver 10Gbps Ethernet network performance, the Cisco routers help to reduce operational cost and complexity and enhance the customer experience, while simplifying the network architecture and underpinning flexible service delivery.

The software components, including Genexis Automatic Provisioning System and NetAdmin applications, have been virtualised on Cisco Unified Computing System™ (UCS®) blade servers for optimal operational simplicity and efficiency.

JT was fortunate to have largely underground ducting that can be re-used to run new fibre cables, rather than overhead wires and telegraph poles (it had chosen in the 1960s to spend about ten per cent more on digging trenches and burying the cables).

"That forward-looking decision sealed our business case," says Dave Newbold, Gigabit Director at JT Group. "With less civil engineering to do, it meant we could deploy FTTH materially cheaper than it would cost to connect a home on the United Kingdom mainland. So, in real terms, we're paying about the same for dedicated point-to-point fibre as one would for a FTTC solution elsewhere."

Aside from the network deployment, JT was also looking for a partner such as Cisco that could engage with its sales teams to create new customer propositions, on and off the island, to help achieve even greater account penetration.

Results

The Island's optical upgrade project is known as The Gigabit Isles, because JT is also deploying a Cisco network on Guernsey, the second-largest of the Channel Islands to gain access to another 60,000 potential customers. On Jersey itself, deployment is expected to be complete by 2016 and consumer take-up of the higher speed services is in advance of business case assumptions.

Among consumers, video is seen as the driver for the surge in broadband demand. 3D TV is on its way, perhaps followed by holographic TV, and JT is now in a position to offer customers a range of services up to 1Gbps at varying price points, with monthly download allowances of up to 50GB.

"The gain from a customer point of view is pretty much unlimited bandwidth," says Millar. "As an island community, it can feel quite isolated, but the connectivity we're delivering for our customers really makes the world a much smaller place. There will be no digital divide on Jersey. It doesn't matter whether you're a granny of 95 or leaving home for the first time and just starting out: you will have access to a fibre link that's capable of gigabit broadband speed."

"With less civil engineering to do, it meant we could deploy FTTH materially cheaper than it would cost to connect a home on the United Kingdom mainland. So, in real terms, we're paying about the same for dedicated point-to-point fibre as one would for a FTTC solution elsewhere."

Dave Newbold
Gigabit Director
JT Group

Major gains are anticipated both for smaller businesses and government. An initiative known as JT Lab is promoting the Island as a hub for digital innovation. Even at an early stage this has begun to pay dividends, with Jersey being actively marketed in places such as Israel and Silicon Valley as an ideal test market for new Cloud-based services.

"Potentially, this development represents a whole new pillar for the Jersey economy, adding the IT industry to financial services," Millar says. Just one example of this attraction is the application development entrepreneur who recently moved to Jersey to take advantage of the huge bandwidth available while working from home.

A further major boost will also see the migration of local government, including education and social services, to an online environment supported by the power of the new network. "In other places, online initiatives have not always achieved the savings hoped for," says Millar, "because the authorities are tied to paying for legacy network delivery methods."

For JT, it is too early to quantify the cost savings that will accrue from greater reliability and lower maintenance costs. However, the company expects many fewer faults than it had to deal with historically on its old network (which relied on copper cable that was susceptible to salt water degradation). A swift two-fold improvement in network reliability is anticipated, while potential long-term savings run to many millions thanks to the resilience, low maintenance costs, and ease of upgrading to the new Cisco FTTH architecture.

Perhaps the greatest benefit is that the network will be compatible with future architectures. "Looking ahead, in 25 years everything will be on fibre, and that will be the dominant network technology for decades to come," says Millar. "So at JT, we're not looking back at the two generations we survived on copper, but looking forward to seeing four or more generations empowered by an optical fibre future."

Next Steps

As JT continues steadily with the deployment of its point-to-point fibre-optic network, they also have plans, in time, to integrate both fixed and mobile broadband by installing 40,000 mobile access points across the Island. The move will ensure much lower capital expenses on its 4G network deployment by offloading much of the 4G traffic onto the new Wi-Fi network. This unique project with its clean high bandwidth provides a future platform for deploying Cisco Videoscape technologies and highly-reliable HD TelePresence systems and would possibly help enable remote medicine on the Island. The attraction of low latency could also provide new competitive advantages for online gaming companies in the financial trading environment.

For More Information

To learn more about the Cisco technologies featured within this case study, go to: www.cisco.com/go/serviceprovider

To learn more about JT's Gigabit Isles project, please go to: www.gigabitjersey.com or www.jtglobal.com

Product List

Routing and Switching

- Cisco ASR 9010 routers
- Cisco Catalyst 4507 switches

Data Centre

- Cisco Unified Computing System blade servers

Customer Premises Equipment

- Genexis Optical Network Termination equipment

Management

- Genexis Automatic Provisioning System
- NetAdmin software

Services

- Cisco Advanced Services for network design and commissioning

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **www.cisco.com/go/offices.**