Customer Success Story

NTL teams with Cisco Advanced Services to reduce risk and deliver the world's largest Cisco Content Delivery Network deployment in just two months

EXECUTIVE SUMMARY

CUSTOMER NAME

- NTL Scotland

INDUSTRY

- Service provider

BUSINESS CHALLENGES

- NTL wanted to remove the many risks associated with a complex customer project with the Scottish Executive Education Department
- The roll out would affect all of the schools in the nation. Any failure would have a major impact on the national educational programme with potential penalty costs to NTL

SOLUTION

- A range of Cisco Advanced Services that included delivery of configuration templates, design services, acceptance testing and knowledge transfer
- 'Fast-track' access to, and support from, Cisco's Content Networking Business Unit (CNBU)

BUSINESS RESULTS

- Deployment of the world's largest Cisco CDN infrastructure for 32 Local Authorities in just two months
- Avoidance of financial penalties incurred for late delivery
- World-class service delivery - based on Cisco best practice gained from similar complex projects
- Greater project profitability - with resource savings of 75 per cent, better use of engineering skills and the reduced need for overtime
- NTL engineers are now recognised as experts in Cisco CDN infrastructures.

NTL wanted to take a more commercial approach to a complex and high-risk project to provide a Content Delivery Network infrastructure for over 3,000 schools in Scotland in just two months. Early engagement with Cisco Advanced Services enabled NTL to strengthen its proposition, secure the deal and 'de-risk' the project – avoiding possible financial penalties and ensuring best practice design, better execution and, ultimately, greater project profitability.

BUSINESS CHALLENGES

Established in 1999 and led by the First Minister, the Scottish Executive is the devolved government for Scotland. With an annual budget of around £26 billion it deals with issues that impact the everyday lives of the people of Scotland, including health, education, transport, justice and rural affairs.

Aligned with its policy to transform education, the Executive wanted the ability to deliver rich digital content to all schools in Scotland to help drive up academic standards and improve the overall learning experience for students. Key customer requirements included a single content delivery platform that could be managed centrally and overlaid on top of the Scottish Schools Digital Network (SSDN) – the public access infrastructure that connects together Scotland's 800,000 educators and pupils.

NTL was invited to submit a proposal as part of a public tender to service providers. It soon became apparent, however, that this attractive sales opportunity also presented serious challenges and high business risks to NTL.

The project was highly complex and involved the consolidation of 32 disparate networks – a mixture of PSTN, ISDN, ADSL, Ethernet and Wireless topologies – each with their own different IP addressing and firewall structures. Implementation was also unlikely to be straight forward, both from a technical perspective, given the adverse Scottish terrain (often referred to as 'the Highlands and the Islands') and from a change perspective in 32 Local Educational Authorities agreeing to one common platform.

With over 3,000 potential sites, the complex deployment set new boundaries in terms of the scalability and engineering of a content distribution network solution that would work securely across a public access infrastructure (effectively the Internet as opposed to a conventional enterprise private network). Moreover, the contract contained an aggressive short timescale of just two months with financial penalties for late delivery.

SOLUTION

In putting together its proposal – based on the Cisco Content Delivery Networking (CDN) solution with Application and Content Networking System (ACNS) software – NTL discussed these concerns with its Cisco Account Manager who suggested an initial meeting with Cisco Advanced Services (AS).

Raymond Purdon, Area Director for NTL Scotland takes up the story: "The workshop was used to explore ideas and identify areas where Cisco AS could add most value – mapping against critical tasks and building these services into our bid. Integrating this activity with our sales engagement process provided instant payback. The collaboration strengthened our proposition and was positively received by the customer. Without doubt it helped us to secure the deal."

NTL agreed a range of Cisco Advanced Services that included developing base configuration templates, low-level design services, acceptance test documentation and, upon completion of the project, training and knowledge transfer sessions for NTL engineers and users. Local software specialist, Serendipity Interactive, joined the collaboration and was responsible for developing Mycontentdirectory – a customised version of MYiNTERNET software to interface with the Cisco CDN solution. Delivered via a web-based portal, it allows teachers to quickly locate relevant online Scottish curriculum content shared between their peers across the country.

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– Raymond Purdon, Area Director, NTL Scotland

Critical to the success of the project was to quickly build an in-depth understanding of the customer's network environment. Working alongside NTL Consulting Engineers, Cisco AS held interviews with each of the 32 Local Education Authorities to establish their infrastructure designs and architectures, including server and application requirements.

Cisco AS used this information to build and successfully test a base configuration template that would allow the solution to work securely across the public network – identifying the individual protocols and ports that needed to be enabled to allow content to pass through the firewall of each school. It also ensured that the network devices – comprising of some 3,100 Cisco 500 and 7305 Series Content Engines (CE) providing local proxy caching and Real Media streaming functionality – used existing capacity more effectively by sending lower priority traffic across alternative routes.

Similar to major projects of this size, however, there were constant challenges. The logistics involved with the largest Cisco CDN deployment worldwide threatened to throw the project off course. A production line had been set up to configure and upgrade each CE device – by taking it out of the box, tagging it with an IP address, loading the configuration (through a series of keyboard inputs), completing quality test and assurance documentation, before the device was repackaged and labelled for shipment.

With each box taking on average 20 minutes to process, and over 3,000 boxes in total, this manual process tied up a huge amount of NTL resource and posed a threat to the project. Drawing on the contacts and 'fast track' access provided by Cisco AS, NTL was able to reduce this down to five minutes per box using uploaded configuration scripts created with assistance from Cisco's Content Networking Business Unit (CNBU).

Next NTL and Cisco AS worked together to produce a combined acceptance test plan from both a technology and user perspective. This confirmed that the software and hardware functioned correctly within each of the 32 Local Authorities, as well as meeting all the project requirements of the user.

Once the implementation had been completed and the acceptance testing had been initiated, Cisco AS prepared the low-level network design documentation to support the new environment. This was followed up with bespoke training sessions developed especially for NTL and backed with detailed material explaining Cisco ACNS technologies. This material was presented to a number of NTL network engineers as part of the final knowledge transfer process.

BUSINESS RESULTS

Teaming with Cisco Advanced Services helped NTL to differentiate and strengthen its customer proposition by ensuring Cisco's continued involvement through to the completion of the implementation. The unique role of Cisco AS created a 360-degree positive outcome with regard to risk mitigation – providing the Scottish Executive with added confidence in Cisco technology and NTL with added protection against contractual penalties for late delivery.

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>
> – Raymond Purdon, Area Director, NTL Scotland

Raymond Purdon explains: "As a service provider when you sign a contract with the customer you accept the terms and conditions, including the possibility of financial penalties. What made the proposition attractive was the opportunity it presented to 'de-risk' the project – with the added comfort of knowing that we had the full weight of Cisco behind us to ensure it was designed right and delivered on time."

In addition to the agreed project deliverables, NTL was able to access other parts of the Cisco organisation to unlock even further value and react quickly to inevitable changing project needs. "The real value comes when the technical teams work together." Raymond Purdon continues: "For example, by automating the configuration process we released 75 per cent of engineering resource – as opposed to incurring more overtime and having to pull in more resource from other parts of the UK. The end result is a better executed and more profitable project."

This view was recently endorsed by an independent audit carried out by the Scottish Executive, which confirmed that the new Content Delivery infrastructure conformed to best practice and assured the same high levels of security. Looking ahead, the collaboration has already opened up new opportunities for both NTL and Cisco in terms of exploring additional customer benefits such as content filtering and anti-virus detection.

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> – Raymond Purdon, Area Director, NTL Scotland

TECHNOLOGY BLUEPRINT

The Scottish Executive Content Delivery Infrastructure is based on the Cisco Content Delivery Networking (CDN) solution with Cisco Application and Content Networking System (ACNS) software. The solution offers enterprises (and service providers that are hosting a managed enterprise content delivery network) an integrated caching and content-delivery platform for new network services to help improve operations and reduce costs.

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> – Raymond Purdon, Area Director, NTL Scotland

Cisco ACNS Software combines the technologies of demand-pull caching and pre-positioning for accelerated delivery of web applications, objects, files and streaming media. Over 3,100 Cisco 500 and 7305 Series Content Engines (CE) are deployed within the network to provide local proxy caching, optimise WAN bandwidth and securely deliver rich digital content to the schools. The advanced design allows content to be managed centrally, while at the same time providing limited control to network managers within each of the 32 Local Authorities.

Other key benefits provided to schools include:

- Pre-positioning – information is downloaded and stored locally before it needs to be accessed in the classroom. This could happen when a teacher asks the system to download a large file the day before using the file in a lesson. The system simply downloads the file and places it on the local network – ready to use.
- Dynamic caching – files are accessed once from the Internet and are then automatically stored on the CDI device on the school network. If anyone else in the school needs the file, they no longer need to download it again – instead it is automatically ready for use, straight from the cache.
- Media streaming – rather than having to download the entire media file before viewing it, which can be audio or video, streaming allows the file to be viewed or listened to while it is downloading, saving a huge amount of time. It also allows live 'broadcasts' which could include events such as conferences and presentations.

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