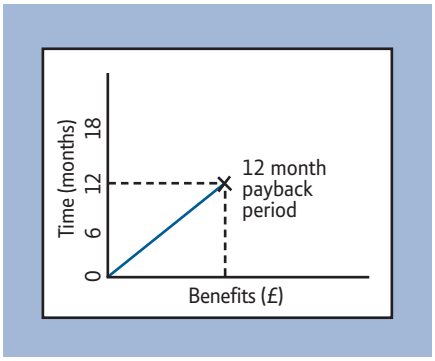
Case study

English Welsh and Scottish Railway

UK's largest rail operator pioneers IP convergence business transformation

English Welsh and Scottish Railway deploys IP telephony and cuts costs with a BT managed and supported IP VPN service on a Cisco Systems Unified Communications platform



Financial payback is achieved within 12 months

Executive summary

Britain's largest rail operator, English Welsh and Scottish (EWS) Railway, forms an essential UK plc supply chain backbone. With an EWS train leaving on average every 90 seconds – delivering, for example, finished goods to retailers or raw materials to manufacturers – the company obviates over 20 million potential lorry movements on Britain's congested roads every year.

EWS balances the challenges of managing its day-to-day business with achieving its long-term vision to transform rail freight services in Britain and mainland Europe by delivering best service at lowest cost. The tight control of operations and close management of logistics are crucial to realising this – optimising productivity by ensuring its 400 locomotives and 13,000 wagons do not stand idle and building customer loyalty. Those business imperatives require first class IT systems but – restricted by its uneconomical leased line network – EWS needed to exploit convergence, in particular the benefits that would be provided by IP telephony and next generation call centre technology.

Partnering with BT and Cisco Systems, the company has linked 130 sites throughout the UK with any-to-any IP connectivity services. With an estimated payback in less than 12 months, EWS is rolling out IP telephony and installing Cisco Unified IP handsets. Advanced call centre technology is enabling the company to optimise its Customer Services Delivery Centre with voice recording, intelligent routing and efficient call handling.

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Guy Mason
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Marketplace

The largest rail operator in Britain, English Welsh and Scottish (EWS) Railway provides rail freight services that support the UK economy. With over 8,000 rail freight services operated every week across all parts of Britain and into Europe, EWS forms an essential UK plc supply chain backbone – providing the glue between manufacturing and retail, putting goods on shelves for consumers and keeping the UK coal, steel and construction industries moving. Powered by nearly 400 locomotives and with 13,000 wagons, the company moves over 100 million tonnes of rail freight every year.

EWS is playing a major role in transforming rail freight services in Britain. Attention to detail, anticipating customer needs, economic pricing and geographic coverage in Britain – with services to mainland Europe – are all important parts of the EWS business model. However, it is exceptional levels of punctuality and reliability that are the keys to success.

Business opportunity

The company had identified technology as the key enabler for securing sustainable competitive advantage and achieving its vision of being the European rail freight operator of choice. With a train leaving every 90 seconds, 365 days of the year, tight control and management of operations are crucial to EWS' success – enabling the company to build customer confidence and loyalty, while optimising productivity by ensuring rolling stock does not stand idle.

Historically the platform used by EWS to run its data systems was a leased line Frame Relay network together with ISDN links. RailNet services – a private voice network that connected its London headquarters and Customer Services Delivery Centre (CSDC) in Doncaster with other UK and European rail operators – also ran over this infrastructure.

Home to many of the company's 5,100 employees, the CSDC receives orders and plans and delivers customer services: managing and co-ordinating wagons, locomotives and other service components.

Following the privatisation of British Rail, EWS inherited various legacy contracts and had no direct ownership of its network. While the company got some benefit from not having to write off and dispose of capital assets, the outdated technology was a brake on its performance. Furthermore, the contracts were uneconomical – and there was the added problem of billing reconciliation for over 130 major sites, and many more unmanned remote locations.

BT solution

EWS invited proposals for a fully managed network connecting all 130 company sites. In preparing its bid, BT teamed with Cisco Systems. The partners were able to showcase the advanced functionality and potential gains that a Cisco Unified Communications system approach offered to EWS – in particular the benefits of IP telephony and the next generation call centre technology that could transform its CSDC.

BT put forward a solution based on IP Clear – BT's IP VPN service – using leased lines for primary access with ADSL back up circuits, to connect individual sites to this high-speed MPLS network. Providing any-to-any converged IP network connectivity, this would allow key converged applications such as IP telephony. Cisco Unified CallManager architecture would be deployed to provide the IP telephony platform and improve call handling capability within the CSDC. Support would extend to comprehensive service level agreements enabled by BT's Network Operations Centre (NOC) in the Highlands of Scotland, which would also oversee the infrastructure and co-ordinate repair and maintenance.

BT underlined its commitment and met EWS' requirements in full by agreeing non-standard terms and conditions. Guy Mason, CIO at EWS, explains the key factors in the final selection decision: "We found that the approach from BT and Cisco uniquely combined the focus you would expect from a small company with the big company resources required to solve technical issues when they arose. The partners were able to bring the right people, technical skills and project management expertise to the table."

Yet, when the contract was awarded to the BT Cisco partnership the real challenge was still to come. EWS set tight timescales – driven by existing contract expiry dates – to decommission legacy services and bring the newer higher bandwidth, lower cost IP services into service. BT made good its service delivery promise, releasing full time specialists to form a virtual project team with the EWS IT and operational teams. Fortnightly executive conference calls – with dedicated senior management sponsorship – were used to drive the implementation through.

Providing service to 130 sites, many of which were located in extremely hard to reach places and aggressive environments such as coal sites, quarries, docks, power stations and other isolated areas presented a real test of the team's skills. Guy Mason says: "What separates a good working relationship from a bad one is not whether there are problems – it's how those problems are dealt with. It was here that BT and Cisco really stepped up to the mark."

Critical dependencies, for example third party civil engineering contracts and obtaining wayleave agreements to excavate new cable routes, required close co-ordination to hit service delivery targets. BT is currently discussing the innovative use of broadband wireless technology and satellite links in extreme areas where it is simply not practical to provide services on more traditional forms of infrastructure.

Results

With most of its IP data network installations complete, EWS has instantly improved its bottom line through the cancellation of old network service contracts. Further savings will be delivered by IP telephony, which is currently being implemented. EWS calculates payback within 12 months.

The contract with BT marks the departure from traditional separate voice and data networks and is believed to be the first of its kind within the UK rail industry. Part of a rolling investment programme, EWS also expects IP-based technology to deliver significant operational, security and productivity benefits through smarter working.

Matt Crayton, Head of IT Infrastructure at EWS, expands: "Working with BT has provided us with real competitive advantage. Class of Service functionality now speeds IP telephony and Citrix-based business applications to the desktop. Policy based routing shifts less time critical traffic over the ADSL back up network. And Cisco's Unified Contact Centre technology helps us to use business intelligence as we look to expand into new markets."

EWS has improved its CSDC, introducing IP enabled voice recording to comply with safety and legal requirements and ensuring local 999 breakout at every site for access to local emergency services. Inbound customer calls can be managed more efficiently, using advanced call handling functionality to match enquiries to agents' skill sets. The new converged IP network will also support other key business applications, including video telephony and unified messaging to provide device independent 'any-to-any' communications – email to phone, text to speech, and remote access to voice mail.

Looking ahead, BT's proactive approach is helping EWS to optimise other areas of its business such as asset utilisation. Guy Mason explains: "We have some 14,000 wagons. It is not always obvious where they are: customers can take them as part of a delivery and they can sit in a siding. Without asking, BT and Cisco started to talk to us about RFID solutions and real time tracking. They have outstanding depth of knowledge and breadth in different technologies, which they deliver pro-actively to us. That shows the benefit that the BT Cisco partnership brings."

Why BT and Cisco?

- Strong commitment to understand EWS Railway's business drivers and objectives
- With EWS as a technology pioneer in the rail sector, BT and Cisco demonstrated the intent to build a long-term relationship at both senior executive and operational level
- Agreement to non-standard and flexible contract terms and conditions
- Delivery capability – backed by best-in-class project management skills and technical expertise

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Technology blueprint

BT IP Clear provides a converged MPLS (multi-protocol label switching) IP network infrastructure, enabling EWS to link geographically dispersed sites with a secure, flexible corporate IP VPN. Through the use of policy-based routing, EWS is able to deliver network traffic to the desktop via the most cost effective route – either over the MPLS network or utilising its always on, fixed tariff ADSL connections.

The Cisco Unified CallManager architecture provides the IP telephony platform (EWS has ordered video capable Cisco Unified IP Phones to support future XML applications) and is maintained and managed end-to-end by BT. Cisco Unified Contact Centre technology provides intelligent call routing, network-to-desktop computer telephony integration (CTI), and multimedia contact management to connect call centre agents to core business applications over the BT IP network.

MPLS incorporates Class of Service (CoS) network performance to differentiate between time critical, high priority traffic and delay tolerant, low priority traffic. This means that customers can classify and prioritise their applications, mitigating competition for bandwidth and speeding critical applications traffic – such as IP telephony packets – through the network. The IP VPN architecture assures data confidentiality, integrity, authenticity and security using IPSec, encryption, tunnelling, and pre-shared keys. Resilience is enhanced by redundant components at critical points across the network and at the EWS Data Centre.

Main products and services

- BT IP Clear-based managed IP VPN, which runs over a Cisco MPLS infrastructure
- Cisco Unified Communications system supporting IP telephony on a Cisco Unified CallManager platform
- Cisco Unified Contact Centre

The BT Cisco value proposition

BT and Cisco share a powerful vision of the future of IP services. As global companies in strategic partnership on a worldwide scale we realise that vision for our customers – delivering and supporting innovative solutions to their business needs. We put a wealth of business and technical resources at their disposal. And BT and Cisco have built some of the largest and most successful IP-based platforms on the planet.

Our relationship has been established over decades of working together on foundation technologies and processes. For example, together we led MPLS development and were first to take the service to commercial launch. With Cisco a preferred supplier to BT's groundbreaking 21CN network platform, and BT recognised as Cisco Global Managed Services Partner of the Year, the partnership can only continue to strengthen and grow.

Offices worldwide

Designed by Westhill Communications

BT