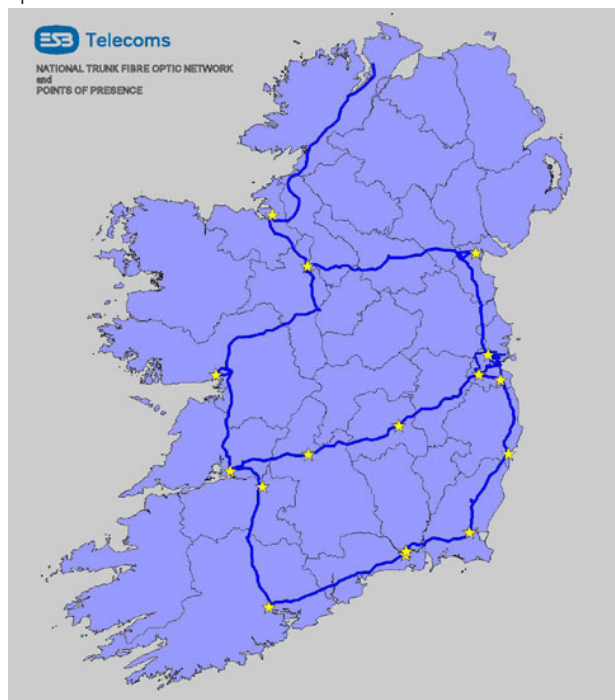


ESB Telecoms providing High Speed Mobile Backhaul Wholesale Services using Transmode solution

About ESB Telecoms

ESB Telecoms is a telecommunications wholesale operator in Ireland. As a subsidiary of the power utility company ESB, it has used the extensive electricity transmission network to become Ireland's leading independent telecoms infrastructure provider. ESB Telecoms owns and operates a 1300km fibre optic network on overhead lines and in underground ducting and sells capacity to other operators, internet service providers and data centre operators.



ESB Telecoms national fiber optic network.

The national fibre optic network that ESB Telecoms has built, mainly consists of two large rings around Ireland in a figure of 8 configuration (see above). It carries a variety of wholesale services including Layer 1 Ethernet and SDH services. The network also runs Carrier Ethernet services directly over the optical network. Additionally, ESB Telecoms also owns and manages 300 towers



and sites on which all major Irish telecommunications companies have substantial installations. On the back of this infrastructure ESB Telecoms offers a portfolio of bandwidth services (managed-bandwidth and dark fibre) as well as infrastructure solutions to its customers.

The Challenge

With the growth of mobile data traffic, the need to increase backhaul capacity for ESB Telecoms was due to customer demand. As a carrier's carrier, this need to provide high speed mobile-backhaul wholesale services to its customers not only presented a major challenge but also a major opportunity.

Most mobile operators do not run their own backhaul service but lease them from a wholesale operator. Until recently many operators in Europe used microwave to backhaul 2G services from the cell site. With the large growth of new 3G and soon also 4G traffic, ESB Telecoms needed to ensure the most reliable backhaul service over fibre to its customers' cell sites.

The backhaul solution ESB Telecoms chose had to demonstrate an economic business case, a significantly low cost for each bit transported while at the same time increasing overall backhaul bandwidth capacity to each of the multiple aggregation points throughout Ireland. Not only did the solution have to demonstrate low cost of operation but it also required a flexible and scalable bandwidth to each of these mobile aggregation points.

ESB Telecoms also had to be able to offer outstanding quality of service (QoS) and scale to keep pace with the rising number of Irish subscribers and their mobile Internet needs. The increased traffic is primarily data traffic as opposed to synchronous traffic and needed to be managed by a single platform.

"With our focus on high capacity services and rapid service delivery, the ability to provide carrier class operation is critically important to ESB Telecoms," said Tom Bambury, ESB Telecoms' General Manager. "The driver for the new network was customer demand. Fiber based

Case study

ESB Telecoms deploying Ethernet Mobile Backhaul Solution for wholesale services.



solutions at the cell site, rather than microwave, were asked for by our customers. In fact, in the mobile sector there has been a very rapid migration to fibre based backhaul at the cell site and base station because of the massive shift to smart phones and wireless data intensive devices."

"Our need was to rapidly deploy a mobile backhaul service that had a great degree of flexibility and scalability which could be managed by a single network management platform."

The Solution - Transmode's unique Native Packet Optical architecture

As Transmode is ESB Telecom's existing transmission network partner, ESB Telecom evaluated the available Layer 1 and Layer 2 networking options for the new mobile backhaul network. Specifically it chose to use Transmode's Ethernet Mobile Backhaul solution built on the EMXP II - a Layer 2 Ethernet Muxponder.



Karl Thedéen and Tom Bambury meeting at Broadband World Forum 2010

"Although we had worked with Transmode in the past on our core WDM network this mobile backhaul network was entirely different - we had to find a solution to meet the demands of our customers fulfilling their needs at the edge of the network. We chose the EMXP II because it was capable of Layer 2 Ethernet aggregation directly onto our core WDM network. This was very important because it means we can now deliver new services over our core network and do so in the framework of an economic business case," said Bambury. "We now have a solution deployed that is fully scalable and future proof."

"Transmode's solution will provide our team with better visibility and enable easier management of the mobile backhaul traffic at our primary sites. In addition it is a very economical solution and gives us an Ethernet protection ring on all Layer 2 services. We are now in a position to pass on an economical and scalable wholesale offering to our customers."

The Network

The first deployments of Transmode's Ethernet Mobile Backhaul solution were completed using the EMXP II at aggregation points across Ireland during 2010 and the network is now being extended to bring the service to additional base station sites. As the Native Packet Optical architecture, on which the mobile backhaul solution is built, is based on Ethernet it allows ESB Telecoms to flexibly deploy capacity with a fine degree of granularity. As the solution combines the best in Ethernet and optical-networking, the operator can seamlessly add capacity at the optical layer and manage the network from a single network management platform to ensure that all deployed assets are fully utilized. The ring based architecture uses G.8032 Ethernet Ring Protection to increase the resilience of the ring.

Conclusion

For ESB Telecoms, Transmode's Native Packet Optical architecture and specifically the Ethernet Mobile Backhaul solution is an ideal platform for its mobile backhaul service. The EMXP II specifically has provided ESB Telecoms with the means to provision scalable bandwidth from 100Mbit/s to multiple Gigabit Ethernet circuits per cell site. In addition it has also provided demarcation of all Ethernet services and aggregation onto a 10G Ethernet ring. Transmode's Intelligent WDM (iWDM™) solution adds further scalability at the wavelength layer.

With the installation of the EMXP II, ESB Telecoms has addressed the key issues of synchronization, latency and jitter - issues which are so vital in mobile backhaul. It has also provided a successful combination of Layer 1 and Layer 2 functionality offering full flexibility and scalability. As mobile traffic continues to rapidly rise in Ireland, the solution will allow ESB Telecoms to manage its backhaul capacity through the combination of smaller fine tuned bandwidth via Layer 2 with additional Layer 1 wavelengths for more significant capacity boosts.

Transmode's Ethernet Mobile Backhaul solution has ensured ESB Telecoms has the high-capacity it needed, as well as flexibility and scalability. It has improved network performance and reduced the cost of its mobile backhaul traffic. More than that in Tom Bambury's words "Transmode is always friendly, always reliable and always delivers on time".