Case Study

Infinera Increases Ontera's Network Capacity

Ontera, a regional carrier in Canada, owns and operates a 1,500 km linear fiber network that provides telecommunications services throughout northeastern Ontario. When Ontera needed to upgrade these services and meet the increasing demand for new services, it chose to do this by deploying Infinera's WDM solutions. This enabled Ontera to exponentially increase the carrying capacity of its fiber network with a very cost effective technology.

With its network Ontera's role is to provide telephone, Internet and data services to businesses and residents throughout the north-east region of Ontario, Canada as well connecting carrier-class services to telecommunications companies wanting to do business in Northern Ontario. It connects the communities in the region and then interconnects with other carriers and service-providers in Toronto, Sudbury, Sault Ste Marie and North Bay.

Objective to Expand Coverage

In 2008, in order to expand coverage and increase service availability, Ontera began a project to extend its fiber network and complete a 1,500 km ring. With the completed ring, the company will transition its core traffic from a linear topology to a fully redundant ring. The company needed to meet increasing bandwidth demands from customers and maximize the capacity of the existing fibers.

There are several challenges associated with providing telecommunications services in the northern region of

Canada. The main problem is the cold harsh climate: the temperature ranges from -40 to 40°C. To make matters worse the terrain consists largely of bedrock, trees, lakes, rivers, swamps, and therefore deploying any infrastructure is difficult and it has to be resilient. In addition there can be hundreds of kilometres between communities due to the low population density of the region. So once infrastructure is deployed it is essential to make the most use out of it for as long as possible.
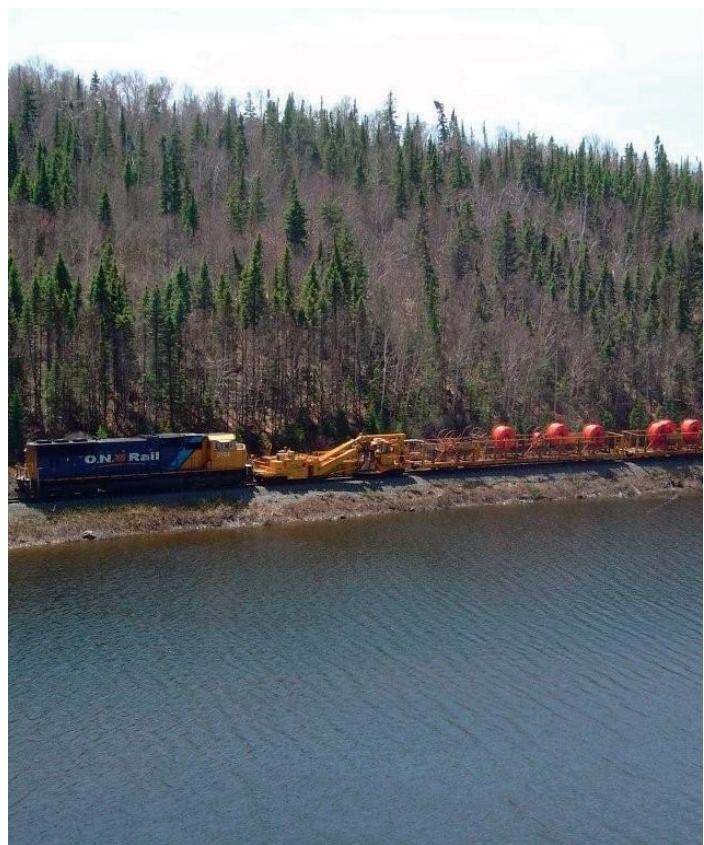
Ontera's rail plough in action

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Solution

Sak Data Products Ltd., an existing supplier to Ontera, had introduced Infinera's technology to Ontera as early as the summer of 2005 while Ontera was then in the early stages of investigating new transport solutions and looked at a number of alternate solutions. Ontera selected Infinera after a series of trials.

Bernie Vierich, Chief Technology Officer at Ontera, Said, "Infinera products were selected because they represented by far the best value of the companies and technologies we viewed. In addition the flexibility of the product and the fact the product provides so much bandwidth on one pair of fibers convinced us to work with Infinera".

After a two-month pilot project, Ontera deployed 40 x TS-1100 chassis with 8-channel CWDM muxes in a double track configuration between Sault St. Marie and Hearst, a distance of some 1,200 km. Later, 5400 Gigabit Ethernet Muxponders and 7700 transponders were also selected to carry Gigabit Ethernet and OC-48 SONET traffic respectively. This combination of products carried all of the required traffic.

The double track configuration is a folded redundant ring without any single points of failure. Once the ring is closed, one track provides a 10G DWDM express lane and the other track provides CWDM for local add/drop. Ontera is the ILEC for a number of small, rural communities and an aggregated OC-48 will supply their needs for many years to come. In addition, the CWDM track allows Ontera to drop Gigabit Ethernet traffic for a variety of high-bandwidth carrier and retail services.

Ontera's legacy network was run over discrete fiber pairs. In some areas, only one or two fiber pairs were available. The Infinera WDM System enabled Ontera to exponentially increase the carrying the capacity of its fiber.

Ontera's serving area
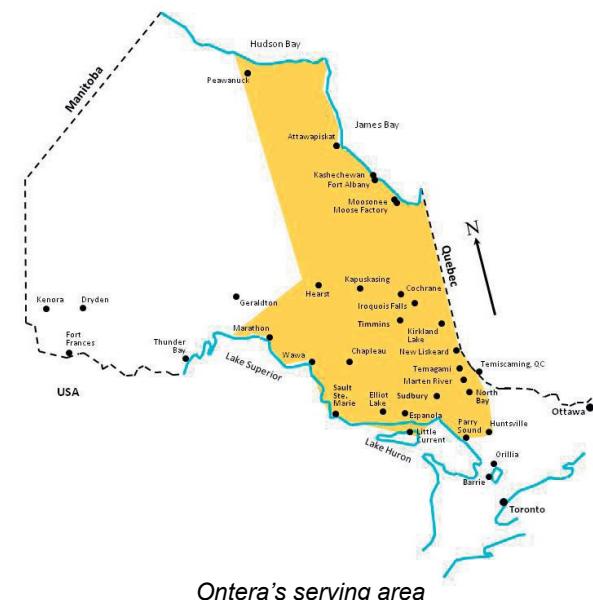
(approximately the same size as England and Scotland combined)

Result

The WDM approach was the only way to expand the company's capabilities through the fiber-constrained areas. In addition WDM enabled Ontera to sell additional wavelength services and private networks.

This ability to turn on new services easily helped with the business case as did the dramatic reduction in capital and operational costs of Ontera's SONET transport network because Infinera enabled Ontera to more efficiently re-deploy existing SONET gear.

"We can now deliver very reliable services," said Vierich. "The way we have designed the network to be modular means we have the scalability and the flexibility we need. We now have the ability to turn on extra services quickly at little extra cost. With Infinera, you don't have to be a Tier 1 Service Provider to support Tier 1 services."

There was a high degree of collaboration between Ontera's network architecture team, and Infinera's design team. This enabled Ontera to optimize the technology selection and the network design to minimize costs while maximizing capability and capacity.

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"We were pleased to work with Ontera to demonstrate the cost benefits and reliability of Infinera's equipment and delighted to be chosen on this project" said Kevin Sakamoto, CEO and president of Sak Data. "Ontera appreciated that they could try the product out and test the network in advance of deployment."

Summary

Infinera's technology has enabled Ontera to leverage its existing fiber assets and expand its core network capacity. It has given Ontera the ability to quickly turn on new high capacity private network services. By transitioning from a linear network to a very resilient ring architecture, Ontera has extended the life of its network and is now prepared for the introduction of MPLS.

Due to Infinera's help and vision, Ontera is now in a position to expand its network and to continue to improve its reliability and respond to meet the demands of its customers.

About Infinera

Infinera is a leading provider of optical networking solutions for transport of data, voice and video traffic, based on CWDM and DWDM technology (Coarse/ Dense Wavelength Division Multiplexing).

Infinera's unique Intelligent WDM (iWDM (TM)) approach has lead to widespread deployment of over 10000 systems in a customer base consisting of more than 250 fixed and mobile network operators, service providers, large enterprises and public institutions across Europe, the Americas and Asia.

Infinera's comprehensive product portfolio and strong global organization enable our customers to grow the capacity and to improve service level of their regional, metro and metro access networks, on a cost efficient basis without compromising on functionality

For additional information about Infinera, please visit www.sakdata.com

About Ontera

Ontera, is a regional carrier in Canada which operates as a wholly-owned subsidiary of the Ontario Northlan-Transportation Commission (ONTC). Ontera offers carrier class services to telecommunications companies wanting to do business in Northern Ontario. With its world class fiber optic network, it has the and links into Northern Ontario communities, Ontera has the capability to help telecom service providers achieve their objectives.