Triple-play Provider Plans for Profitable Growth

Cisco end-to-end network helps Lyse Tele meet goals for expansion, new services, and operational excellence.

EXECUTIVE SUMMARY

LYSE TELE

- Service Provider
- Norway
- 70 Employees

CHALLENGE

- Capture new market opportunities by delivering triple-play services over FTTH network
- Plan infrastructure to support long-term growth
- Maintain small operations staff by following best practices for operational excellence

SOLUTION

- Cisco end-to-end network provides high-capacity, reliable foundation for nationwide triple-play service offering
- Catalyst 4500 Series switches help lower operating costs and support sustained growth through continuous capacity enhancements and new FTTH features

RESULTS

- Virtually all Catalyst 4500 Series switching nodes are running after seven years of continuous expansion
- Company has met its goals for maintaining profitability through operational excellence
- Only 70 employees support 150,000 active triple-play customers

Business Challenge

Norway's population may not be as large as other European countries, but its citizens certainly have a large appetite for new technologies. In fact, Norway is a leading European consumer of new telecommunications services. In 2002, Lyse Energi, a Norwegian utility, decided to spin off a new enterprise, called Lyse Tele, to participate in the booming telecommunications marketplace.

One of the new enterprise's earliest strategic decisions was to demonstrate that a Metro Ethernet fiber to the home (FTTH) solution would offer superior capabilities and value compared to the alternative digital subscriber lines (DSL) solutions being employed by some competitors. Although Ethernet was more expensive than DSL, the FTTH technology gives Lyse Tele a bandwidth advantage for delivering triple-play Internet, phone, and TV services over IP.

Providing telecommunications services to the home is a low-margin business, and Lyse Tele recognized that it was important to keep capital and operating expenses low in order to maintain profitability. Through its parent company, Lyse Tele had the advantage of a wide network of heating, electricity, and duct pipes to deploy a completely independent optical fiber network at a relatively low cost.

To achieve rapid market penetration, Lyse Tele made the decision to deliver triple-play services through franchises under the brand "Altibox" (all-in-one-box). This brand has become very strong and is truly associated with superior broadband services. Franchise partners are usually utilities and municipalities interested in investing in broadband services in their local areas; they typically have no content to provide. These partners want to build and own the complete network infrastructure in their regions, while reducing risk and development costs and shortening time to market. With Lyse Tele, services such as local TV channels and news feeds are produced centrally and delivered with partner branding.

"In order to create a successful franchise model, it was necessary to choose a network design and equipment that would make it easy for potential partners to deploy services with minimal start-up time and investment costs," says Tore Kristofferson, chief technology officer. "Our design goal was to build a highly reliable network of minimum complexity, which also provided the scalability to support long-term growth."

Solution

Back in 2002, service providers were under tremendous pressure to adopt an open business model. Kristofferson's team considered the approach, but decided that without having sufficient control over the network, Lyse Tele would not be able to meet its goals for managing costs and maintaining operational efficiency.

Lyse Tele standardized on Cisco for the end-to-end FTTH network, based on its past experience with Cisco® technology and strong support from the local representatives. ATEA and IBM Services were enlisted for integration and software solutions.

Cisco Catalyst® 4500 Series switches aggregate into Cisco 7600 Series carrier-class edge routers with integrated, high-density Ethernet switching and 10 Gbps interfaces. The Cisco 7600 aggregation layer also incorporates IP/Multiprotocol Label Switching (MPLS) routing to connect to the Cisco CRS-1 Carrier Routing Systems at the optical central office. The nationwide core runs at multiple 10 Gigabit links, and the Cisco CRS-1s will allow Lyse Tele to scale to multiple 40 Gbps and even 100 Gbps links without changing chassis.

Early in the design stage, one of the other important decisions was purchasing the Cisco Catalyst 4500 Series switches. The Catalyst 4500 switches provide scalable, nonblocking Layer 2-4 switching for the Lyse Tele triple-play FTTH services. “At the time of the first FTTH pilot, the price per port was higher than we expected to pay,” says Kristofferson. “But we had ambitious growth goals, and we knew that it was crucial to pick a foundation that would allow us to continue growing without adding staff and overhauling the network every few years. After careful evaluation, we decided that the Cisco Catalyst 4500 was the best platform for meeting our goals.”

The Cisco Catalyst 4500 delivers predictable and scalable high performance, advanced dynamic quality of service (QoS), and multicast capabilities. The flexibility, scalability, and forward and backward compatibility between generations of the Cisco Catalyst 4500 Series extend deployment life, something that was high on Lyse Tele's priority list for investment protection.

The high port density of the Cisco Catalyst 4500 switches helps to keep equipment and operational costs low. “We don't have to buy more switches than we need or overprovision the network,” says Kristofferson. “We only have to install ports for paying subscribers, which provides a much more efficient ‘pay-as-we-grow’ model for our business.”

In addition to providing investment protection, the Ethernet switches also reduce the maintenance and troubleshooting compared to more complex passive optical network (xPON) solutions. There are several reasons for this, including the familiarity of Ethernet technologies for Lyse Tele's operational staff, and the comparative simplicity of Ethernet-based network and physical infrastructures compared to xPON technologies.

> “We made the right choice for a scalable, efficient foundation more than five years ago, and we are very pleased that the return has been even better than we expected.”
>
> **— Tore Kristofferson, Chief Technology Officer, Lyse Tele**

Results

Lyse Telebecame the first European carrier to deliver TV and telephony solutions over a converged IP network. Most importantly, Lyse Tele has met its original goals for maintaining profitability through operational excellence. “We can see that competitors who adopted the open business model are struggling with profitability,” says Kristofferson. “The decisions that we made for our network foundation have been validated by our sustained growth and profitability.”

Today, the company is the number-one provider of IPTV services in the Nordic region, number three for IP telephony in Norway, and number four for Internet peering in Norway with approximately 150,000 active triple-play customers. Lyse Tele still maintains a relatively small staff, 70 employees, to manage the business and the network. No other

service provider can boast such a high degree of subscribers supported by such a small number of operational staff. Lyse Tele's firm belief in the scalability of the network has enabled them to put forward a bold goal for customer expansions: 400,000 customers in 2012.

What began as a regional network has grown to a national and international network, providing services directly to the customers of 36 partnering utility companies. One Lyse Tele franchise partner describes how it took more than 40 people to support a base of 5000 subscribers using a competitor's network. In contrast, using the Lyse Tele network, the same franchise partner estimated that they could support over 100,000 subscribers and reduce their staff to 11 people.

Lyse Tele is one of the very few FTTH providers to scale to a large number of customers. Virtually all of the Catalyst 4500 switching nodes from the initial installation are still running after seven years, and are far from being replaced. "In the same period of time that we've been operating, our competitors have had to restructure and overhaul their network infrastructures in order to keep growing," says Kristofferson. "The performance of the Catalyst 4500 Switches has been outstanding. We can update with new modules or software, and without disrupting a single subscriber."

The network has also allowed Lyse Tele to continue to add new converged services for further competitive differentiation, including:

- Customizable portal offers subscribers personalized pages and local content, including a wildly popular football portal.
- Customers can review or send email, store phone directories, receive notifications, and review voicemail through their televisions.
- With a fully converged "I-phone" number, subscribers are able to experience distortion-free handover between cell and wireless networks. Subscribers are also able to use their mobile phones to control TV recordings or see their electronic program guide.
- The Alarm over IP service provides home security for subscribers and offers direct and redundant links to emergency centrals.

PRODUCT LIST

Routing and Switching

- Cisco Catalyst 4500 Series switches
- Cisco ME 3400 switches
- Cisco 7600 Series routers
- Cisco CRS-1 Carrier Routing Systems
- Cisco ONS 15454 DWDM system

Next Steps

Lyse Tele has numerous plans to add even more services to the network, including automatic meter reading for Lyse Energy service. Customers will also be given access to a browser-based interface for monitoring and controlling energy consumption, and controlling temperature and other variables over the Internet. For healthcare and other markets, Lyse Tele has introduced closed circuit TV for security solutions, and deployed Cisco-based Wi-Fi "hot-spots" for business customers (with management services). The service provider also plans to provide these services on the public network as part of its fixed mobile convergence solution.

"We made the right choice for a scalable, efficient foundation more than five years ago, and we are very pleased that the return has been even better than we expected," says Kristofferson.

For More Information

To find out more about Cisco Catalyst 4500 Series Switches, go to:
http://www.cisco.com/en/US/products/hw/switches/ps4324/index.html

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