

Carrier-Ethernet Puts Triple-Play Provider in the Lead

Lyse Tele builds out fiber to the home to provide Norwegian energy customers with bundled services and a path to fixed mobile convergence.

EXECUTIVE SUMMARY

LYSE TELE

- Industry: Telecommunications
- Location: Norway
- Number of Employees: 58

BUSINESS CHALLENGES

- Increase revenue with bundled services for installed base of utility customers
- Build out an access network with better throughput and reach than afforded by digital subscriber lines (DSL) over copper
- Avoid an increase in operations staff by minimizing network complexity

NETWORK SOLUTIONS

- Cisco Metro Ethernet solution (Cisco Catalyst® switches, gateway, and gatekeeper products)
- System integration by Ementor and IBM (Cisco Gold-certified partners)
- Other partners: IBM for software integration, Tandberg Television for IPTV services, and Latens for conditional access and new TV portal

BUSINESS RESULTS

- Competitive advantage of being first to market
- Rapid subscriber growth
- Ability to control equipment costs and operational expenses
- Ability to differentiate themselves while extracting maximum value from the existing infrastructure

Business Challenges

With a population that is quick to adopt new technologies, Norway has been a leading European consumer of new telecommunications services. Lyse Tele was formed by its parent company, Lyse Energy, as a result of deregulation and this opportunity-rich market. The spin-off company began by deploying a Cisco® carrier-grade core network and building out access that could support revenue-increasing advanced services. The company determined that demand existed for more than just high-speed Internet services. Case studies and focus groups determined that customers wanted service bundles including utilities and triple-play Internet, phone, and TV services over IP.

Lyse Tele had the option of establishing broadband access over the existing copper network, but an evaluation quickly revealed that this alternative would limit both access speeds and geographical reach. To take full advantage of the potential for both residential and commercial services, Lyse Tele relied on its traditions of innovation to develop a better solution. The company had two strong assets for this type of project: an existing duct and pipe infrastructure and in-house expertise in laying cable. This made it affordable to consider a build out, and the Lyse Tele team set out to design a high-performance, flexible solution that could grow with the company.

Network Solutions

Partners were selected to speed the deployment. Past successes and strong support from the local team brought Lyse Tele to Cisco for network solutions. Ementor and IBM Services were also enlisted for integration and software solutions. The world-class team rapidly designed and tested a Metro Ethernet fiber to the home (FTTH) solution for a pilot deployment that would reach several hundred Lyse Tele subscribers. Although Ethernet was more expensive than digital subscriber lines (DSL), this access network gave Lyse Tele a bandwidth advantage for triple play. **The Layer 3 solution also provided stability and a full-function routing environment for advanced services such as IPTV.** Lyse Tele remained focused on the longer-term service portfolio goals and committed to carrier Ethernet. **The first services were rolled out using Cisco 4000 Series equipment and Cisco 3500 Series for small points of presence (POPs).**

The pilot deployment demonstrated the superiority of the Lyse Tele solution compared to the alternative DSL solutions being employed by some competitors. The company gained the bandwidth that they required for triple-play services, and became the first European carrier to deliver TV and telephony solutions over a converged IP network.

Moving forward, the primary drivers for the Lyse Tele strategy include:

- **Enough bandwidth to facilitate new services at a viable cost.** Point-to-point (P2P) Ethernet is very affordably deployed compared to more complex passive optical network (PON) solutions, and also keeps customer premise equipment (CPE) costs low.

Maintenance costs are also lowered by using readily understood Ethernet technologies. Troubleshooting is much more straightforward.

- **All over IP and IP all over.** Lyse Tele can deliver all services over IP while shielding subscribers from the complexities of the network.
- **P2P Ethernet architecture.** Lyse Tele has to dig to build new areas, and the fiber infrastructure put into the ground should not put any constraints on the technology (e.g., routers and switches) chosen. In this aspect, P2P investments in fiber infrastructure last for decades and are fully flexible with respect to new and different technologies for lighting up the fiber.
- **Generic network and platforms both for business and residential market segment.** Ethernet facilitates the separation of residential and business customers, and also enables Lyse Tele to give customers control of their own routing or managed services that offload the customer's in-house IT team. The Layer 3 solution lends itself to better management for the managed services offerings.

"The Cisco point-to-point Ethernet solution is still the best for us," says **Tore Kristofferson, chief technology officer for Lyse Tele**. "A customer buys TV and telephone service – they do not want to see the network behind it and they do not care what the technology is. Since 90 percent of our customers self-provision, the Ethernet solution has been a key differentiator – it keeps CPE very simple and we can deliver the bandwidth that they need for advanced services."

Business Results

Today, the third generation of the network continues to demonstrate the long-term viability of the carrier's FTTH architecture. What began as a regional network for the Lyse Tele subscriber base has grown to a national and international network providing services directly to the customers of 29 partnering utility companies.

These partners are utilities and municipalities interested in investing in broadband services in their local areas. They are looking for a win-win model, having fiber and the right of way. They want to build and own the complete network infrastructure in their regions while reducing the risk, reducing development costs, and shortening time to market. The partners typically have no content to provide. Due to the cooperation with Lyse Tele, all services are produced centrally and delivered to their infrastructures with partner branding. Lyse Tele offers partners a business model that allows them to exploit the benefits of large-scale operations and that complements their regional strengths, existing infrastructures, and established customer relationships. Local TV channels and news feeds are delivered to the partners by Lyse Tele. Partnership also includes operation and maintenance, CRM, and billing information. Companies gain very easy start-up for a limited initial investment and requiring minimal knowledge.

The company's long-term vision and commitment to its business goals of simplicity and high performance have resulted in industry-leading IP services and a business that has gained rapid revenue growth without incurring the overhead of a large operations team. Only 58 employees manage the business and the network (see Figure 1).

Several significant milestones have established Lyse Tele as a Nordic leader for triple-play services:

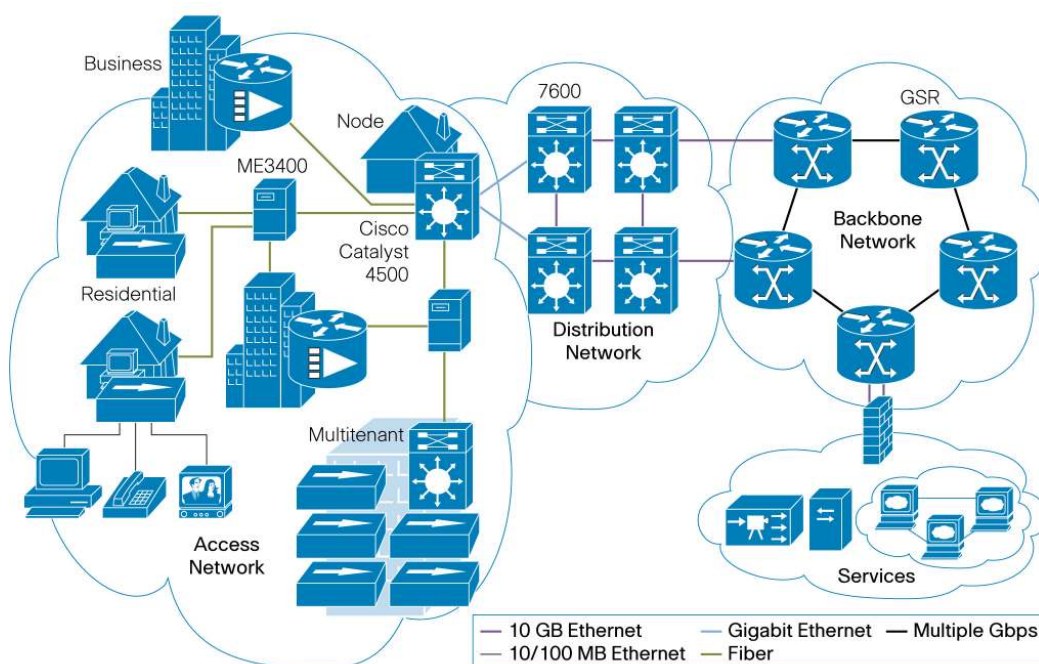
- **Rapid growth of its subscriber base for advanced services.** The company's successful rollout of advanced triple-play services has attracted more subscribers and reduced churn. The first trial was conducted in 2002 with 400 customers; in 2003, the company attracted 4000 subscribers. By being first to market, the company has achieved a penetration rate greater than 60 percent, with 100, 81, and 80 percent of those subscribers buying Internet,

IPTV, and voice services, respectively. 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 approx 65,000 active triple-play customers.

- **Extended geographical coverage.** Besides growing its customer base, Lyse Tele has extended its geographical coverage to national and international levels by providing services through 28 partners. This growing number of utility companies has embraced the Lyse Tele business model and network to rapidly deliver triple-play services within their own regions. Since marketing efforts in Norway are very tuned to the various regions and their needs, this model allows Lyse Tele to benefit from the regional expertise of its partners and avoid the learning curve otherwise required for expansion.
- **Advanced subscriber capabilities.** The network has also allowed Lyse Tele to offer converged services for further competitive differentiation. For example, customers can review or send e-mail, store phone directories, and receive notification and review voicemail using their TVs.

“The network has scaled very nicely and we expect that it will give us almost unlimited regional capabilities and the ability to support several hundred-thousand subscribers,” says Kristofferson.

Figure 1. The Lyse Tele Network



Next Steps

The stability and success of the network build out have inspired many ideas for follow-on services that will keep Lyse Tele in its market leadership position. For example, Lyse Tele is currently evaluating:

- **Quad play.** Mobility will be introduced with GSM/Wi-Fi support. With a fully converged “I-phone” number, subscribers will be able to experience distortion-free handover between cell and wireless networks. The converged service will be available in late 2007, with plans to allow mobile phones to control TV viewing or provide a view of the electronic program guide.

- **Home services.** Automatic meter reading for Lyse Energy service will be available over the network. 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.
- **Alarm and monitoring services.** Closed circuit TV can be introduced for security solutions, as well as other functions monitored remotely for healthcare and other markets that can be enhanced with access to home intelligence.
- **Fixed mobile convergence.** Lyse Tele has already deployed Cisco-based Wi-Fi “hot-spot” solutions for business customers (with management services) and is also working to provide these same services on the public network as a critical part of its fixed mobile convergence (FMC) solution.

PRODUCT LIST

Routing and Switching

- Cisco 12000 Series
- Cisco 7600 Series
- Cisco Catalyst 4500 Series

For More Information

To find out more about Cisco Metro Ethernet solutions, go to:

http://www.cisco.com/en/US/netsol/ns577/networking_solutions_solution.html.



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