Light speed to the future

Sten Oscarsson, CEO of Borderlight AB, assesses the benefits of optical fibre deployment in Sweden…

Deregulation of former telecom monopolies, coupled with the accelerating demands for high-speed data communication, has created an ever expanding chasm between successful fibre countries and countries with slow traditional ADSL services. Here is some food for thought from Sweden's work with fibre deployment.

Why fibre access?

Optical fibre gives each subscriber 100Mb/s broadband capacity today and 1,000-10,000Mb/s when needed with future equipment upgrades. This capacity enables super fast internet speeds, several hundreds of digital IPTV channels, HDTV (High Definition TV) and new VOD (Video On Demand) services that have never been possible before. On top of this, well designed fibre networks are more reliable than any other technology.

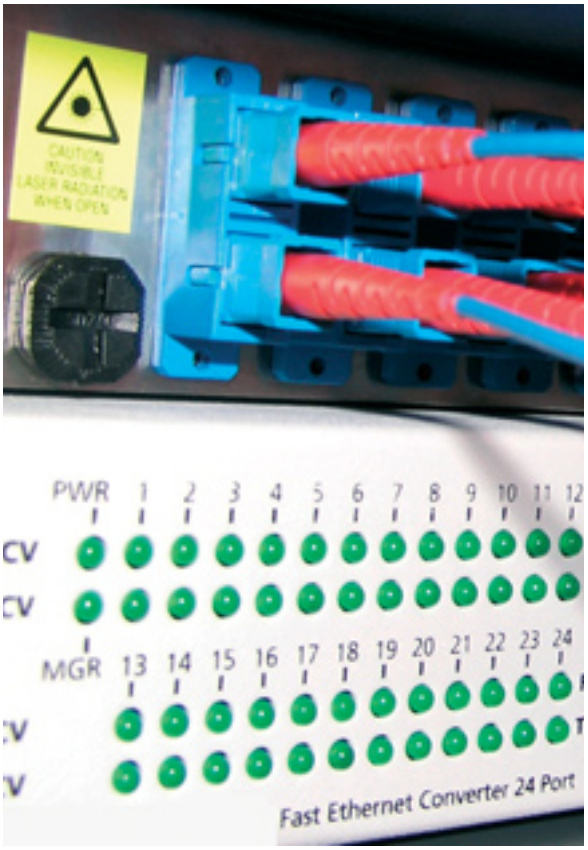
FTTH (Fibre To The Home) has the same importance for success in the knowledge society as railroads had for the industry society. It is simply not possible to be competitive without it at affordable prices.

Fibre is profitable from day one

Large areas in Sweden have the same population density as the Sahara Desert – deployment of FTTH should be a financial nightmare. So how can new optical fibre networks in rural parts of Sweden be profitable from day one?

You may say government subsidies, but those have merely been a minor trigger to initiate broadband projects – only 11% among local Metro Networks according to the Swedish Urban Network Association.

Truth is that our annual consumption of telecom services covers costs for the best FTTH solutions available on the market – release and capture of this revenue stream from former telecom and cable TV monopolies will give you some €700 (excluding VAT) in annual turnover per connected home. So every day spent on slow ADSL is lost Euros that could pay your future fibre deployment today.



Lifespan for fibre is 30 years or more

One important key is long-term financing – optical fibre infrastructures have a lifespan of at least 30 years. Cable ducts that are a large part of this investment will probably survive more then 60 years. Our present 50 year old ADSL copper wire is good proof of that. Real estate agents in Sweden today consider FTTH access to increase building value levels. Swedish banks accept finance applications for FTTH investments with your house loan at no, or 30-50 year, depreciation due to the increased value of your real estate.

Legislation against land work without ducts for optical fibre

There should be a law against land work without co-ordinated deployment of public ducts for optical fibre cables that can be used at self-cost. Price for generic ducts

for optical fibre with six tubes is €5 per metre, while land work per metre to put those ducts in the ground may be from €12 in rural areas to €90 in dense cities.

Our society spends a fortune every year in land work for roads, power lines and pipes for sewage, fresh water, heating and cooling, etc. On top of this, competing telecom operators, unable to co-operate, may independently dig up the same path in dense cities at the same time or within a few years' timespan at redundant costs and obstruction to public movement.

The cost to deploy optical fibre ducts is less then €4 per metre if this duct is deployed together with other land work – this can cut the deployment cost between two to four times in rural areas and up to 10 times in dense cities. Such co-ordination of land work has successfully been implemented on a voluntarily basis in several parts of Sweden and this has accelerated profitable FTTH deployment.

Competition boosts development

Sweden has 150 local Metro networks that cover 30% of the population with 3,500,000km optical fibre. Those local Metro networks have reduced optical fibre prices by 30-40% in the last five years (source: The Swedish Urban Network Association).

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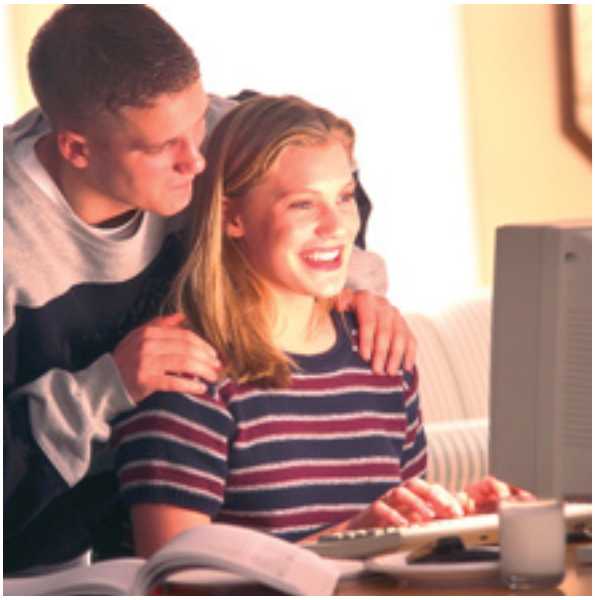
The majority of the Swedish Metro networks support the concept of Open Networks – this has created a new highly competitive and fast growing market channel for independent service providers. PTS (Swedish National Post and Telecom Agency) had 380 service providers registered in 2006. Some Metro networks have more than 20 competing service providers using a shared infrastructure of optical fibre, equipment and service portal. The going monthly price for internet access today is €12-32 for 1-100Mb/s.

Don't be shy – think 100% coverage

Laxnet in Älvkarleby, 160km north of Stockholm, is one example of a successful rural Metro network. Älvkarleby municipality has 3,600 homes in a 2,010km^2 area – less then 18 homes per square kilometer.

Optical fibre coverage by Laxnet in Älvkarleby was developed from 0% to 85% in less than three years and coverage is still increasing. 32% of all homes are connected with 100Mb/s. Basic service is 10Mb/s internet, two phone lines with back-up power, analogue TV, digital IPTV with 60 Swedish



channels and 80 foreign channels in more than 20 languages. Each home has two Ethernet outlets in every room.

The increase of private fibre connections will most likely speed up during 2007 when bandwidth demanding VOD, On Demand TV and HDTV is released.

All public schools and municipality administrations are connected with a redundant gigabit fibre network for data, internet and IP telephone services. This has saved more than 30% of annual communication costs for municipality administration.

Borderless co-operation between counties' and municipalities' admin-istrations, local energy companies, large real estate owners and private entrepreneurs with one common steering board have been the key to success in this case – every stakeholder is a winner in this project.

Future capacity of light is infinite

High quality video phones and videoconferencing, energy saving by detailed individual metering, better building automation, advanced homecare for the elderly and improved e-government services are the most obvious examples of future services enabled by high-speed optical fibre access.

But the important point is probably what we have not imagined yet – that the future capacity of light through optical fibre is close to infinite.

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