

## Successfully Bringing Fibre to Rural Finland

**Municipality-owned network, available to ISPs at no cost, enables rollout and socio-economic boost for region with population density 87 % below European average**



The EU population density average is 117 people per km<sup>2</sup>, but in Finland's Suupohja County it is 8.8. The 5000 km<sup>2</sup> region has just over 55 villages, with between 50 and 500 inhabitants each, and eight municipality centres. Several municipalities founded Suupohjan Seutuverkko Oy (SSV), a non-profit limited company in 2005. Originally five owned the shares; today this number has grown to seven. This has allowed them to bring fibre connections to homes, institutions and businesses across the region.

### General Information

#### Location:

Suupohja County

#### Population:

44,000 people

#### Infrastructure Owners:

Suupohjan Seutuverkko Oy (SSV) owns the passive and active infrastructure and handles maintenance

#### Service Providers:

Any ISP has free use of the open-access network

"In 2004, over half of these villages didn't have broadband," explains Anne-Mari Leppinen, Project Manager with the Suupohja Region ICT Economic Development Agency. "None of the national telcos were willing to invest in the area, and local municipalities were paying a great deal of money to rent copper connections. They wanted to cut costs but also strengthen co-operation and enable future services. The idea arose to build a municipality-owned fibre network to public places and villages. The company's original idea was to use existing copper infrastructure in the last mile by installing digital subscriber line access multiplexers (DSLAMs) in the village telephone centres. However, the strategy changed during the first year and they decided to take fibre all the way to the houses. This change was the result of major changes in the legislation, which led to a

price jump for rural copper. First, trunk connections to the municipality centres were made. This was followed by network extensions to built-up areas and villages by leading optical fibre connections all the way into the houses. The initiative was paid for by combining a bank loan, guaranteed by the municipalities, with national funding and a one-time connection fee of €1,500."

### Deployment

#### Size of network:

5000 homes passed (50 % of all homes); 2500 subscribers (15 % — 60 % of all homes, businesses and public centres depending on the municipality)

#### Time to deploy:

2005—2013 and continuing

#### Deployment method:

Open-access network

"Now, all the villages in the area share their own FTTH-network which is open to anyone. Many customers in small villages are already using 150 Mbit/s symmetrical connections. Over 2000 households and businesses are equipped with an FTTH-connection and all the public spots, such as schools, hospitals, libraries and day care centres, are linked with fibre. The total length of the network is over 1500 km and the current speed of the backbone is 10 Gbit/s. The trunk line of the SSV network forms a loop in the area of five Suupohja municipalities and three Satakunta municipalities. The line runs through the built-up areas of Kauhajoki, Isojoki, Karijoki, Teuva, Karvia, Kurikka and Siikainen and Honkajoki. Along the way it branches out into village networks."

#### Revitalising the countryside

"Bringing fibre to all the villages in Suupohja County has introduced many new options for community work, businesses, education, health care services and



entertainment. Ultra-fast Internet connections have made it possible for people as well as businesses to survive in the countryside, and the regions is now more attractive for people to stay. IPTV services have improved the poor TV quality in some areas, and the network has also improved the 3G/4G-coverage.”

The network also increases the value of houses, boosts GDP, allows better quality of life and brings many new services. Some examples: medical facilities can now send X-rays to the regional hospital for analysis. Mayors meet through videoconferencing. In the village of Kauhajoki, school surveillance and access control is taken care of with fibre. Each classroom is equipped with smartboards and document cameras. Students are already using electronic books in some classes and use their smart phones, tablets and laptops during lectures. Schools can now also hook up to a countrywide web-based student information system, which allows students and their parents to look up schedules, exam results and grades as well as communicate with teachers.

## End-user Services

### Price per package:

Some examples:

- 50 Mbit/s symmetrical Internet: € 12.20 /month
- 150 Mbit/s symmetrical Internet: € 22.10 /month
- IPTV: € 5/month

Plus an additional € 24.80/month to SSV

### Types of services:

Triple play, surveillance, LAN-to-LAN for companies; it is expected all services will be delivered via Internet in future

Fibre allows people and businesses to remain in or move to the area. One couple quit their jobs in Tampere, Finland’s third largest city, and set up their bookkeeping business in the region. All their files are on the cloud, so the business is totally dependent on the network. Municipality-owned business parks for SMEs can now offer more than office space. Ultra-fast Internet brings easy access to financial administration and secretarial services, along with video conferencing, a direct fibre data centre connection and private cloud services. SSV now also offers software developers and device manufacturers a test bed where they can test their products and obtain feedback from end users.

### Free fibre for ISPs

“The rollout had its share of challenges,” says Anne-Mari. “DSLAM hardware orders were delayed for six months while the national regulator eased regulations concerning the copper rent. Copper network owners were able to charge different rates in

different regions. This only strengthened SSV’s resolve to take fibre as close to the end user as possible!”



“SSV handles building and maintenance and owns the passive and active infrastructure. SSV are the first entity in Europe to allow service providers to use their network for free. The reasoning is that this decreases end-user prices, increases quality, stimulates competition among ISPs and allows them to focus on services instead of infrastructure development. FTTH customers are totally free to select (and change) their ISP from a variety of choices, from large multinationals to local start-ups. End users pay the service providers for Internet, IPTV and other services, and also pay a fixed network fee to SSV for infrastructure maintenance.”

## Business Case

### Business model:

Suupohjan Seutuverkko Oy (SSV) is a non-profit limited company owned by seven municipalities in Western Finland. The purpose of the company is to build and manage FTTH networks.

### Investment:

The initiative was paid for by combining a bank loan, which was guaranteed by the municipalities, national funding and a one-time connection fee of €1,500/customer. Total investment/cost: € 10,100,000.

### Numbers of years to ROI:

8-10 years, per financial calculations

## Looking ahead

Next steps are to get all households connected and start pitching the region as a logical place to build data centres, as the climate is cool and the location secure. The Suupohja Region is also part of the EU project ENGAGE, established last year, and is currently working with 11 different partners from nine member states to effectively brainstorm on the best way to get fibre optic networks to the countryside across Europe.



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