

## OnsNet - Nuenen's FTTH network

### **Introduction**

Nuenen is a small town on the outskirts of Eindhoven, South East Netherlands. It is an affluent area with a well-educated population of around 25,000 people in just over 8,500 households. Around a quarter of the population are retired.

In 2004 the town set up a broadband cooperative with finance from a private investor, a bank and a government subsidy, and built a fibre to the home network delivering speeds of 100mbps. The project is called OnsNet, literally meaning 'Our Net'. Prior to this network being built the town already had a choice between at least two broadband providers, one ADSL and one cable, and broadband take-up in the town was good.

### **The project**

#### Origins

The local housing corporation, Helpt Elkander, and Kees Rover from Close the Gap led the OnsNet project. It was designed on the back of the housing corporation's plan to supply its elderly residents with video services, which would require fibre optic cable. A plan to roll out fibre to the whole community evolved after discussions with local residents revealed a wider interest in such a project.

#### The proposition to residents

The proposition put to residents was that connection and access to the OnsNet network for the first year would be free, and after this there would be monthly charges of €20 for membership of the cooperative, €16 for Internet access (depending on the ISP they chose), €10 for telephony services, and €14 for a TV service. It is possible to subscribe to a mix of these services, but in order to access the Internet a resident must be a member of the cooperative.

As a result of a highly effective marketing campaign and the free first year offer, the project achieved a 97% take-up in the community for the first year.

#### Marketing and communication

Interest amongst the local community in OnsNet was created by a combination of clever marketing and communication, and a receptive audience. The benefits of the network were explained as two fold: an increased number of services would be available; and a cheaper service would result. The slogan of 'more for less' was adopted. The marketing was focused purely on the benefits and services local residents could expect to receive, using a 79-year old woman as typical of their target audience.

In order to communicate this OnsNet recruited local ambassadors in the community, who helped to raise awareness and explain the project. The local ambassadors came from a variety of areas of the community, including the elderly – many had engineering backgrounds from careers with Phillips in Eindhoven, and were able to

understand the project quickly and supported the aims. The Mayor of Nuenen and other senior local politicians gave political support.

#### The network

OnsNet installed a point-to-point fibre network, with two fibres going to each residence. Two points of presence (POPs) were built to connect the community. Volker Wessels, an engineering firm, installed the network with the blown fibre provided by Emtelle. Around 150km of trenches were dug, with 3000km of fibre cable used. Volker Wessels estimates that it costs them €30 a metre to lay the cable, which was considered cheaper than UK costs.

The network took six months to construct, between June and November 2004. A 30-year guarantee on both the passive and active parts of the network was provided.

#### Service providers

The network is an open access network. It was initially designed so that the cooperative would own the passive network layer, with a service provider (SP) to provide the service layer on top. However, no SP was commercially interested in delivering a service, so the cooperative also created an SP to do this.

#### Business model

The business model required investment from the housing corporation, a private investor, a government subsidy and a bank. The subsidy came from the Kenniswijk programme, which provided funding for a region surrounding Eindhoven for technology projects. The area that Kenniswijk applied to was extended so that Nuenen was included, as the responsible government department was keen for the subsidy to be used to support the OnsNet project. The subsidy available was €800 per household.

The model effectively relied on the significant take-up, which was itself reliant on the government subsidy that was available. The model developed as follows.

- The housing corporation agreed to finance the two POPs
- A private investor took a 5% share in the network
- The cooperative signed up 97% of households to the scheme in advance
  - The agreements signed with the residents were for one year only, and arranged for the subsidy to go straight to the cooperative.
- The bank puts up the remaining required finance on a 20-year loan.
  - The re-payments were based on 45% penetration in the Nuenen households
  - The loan was secured against the network
  - The bank agreed to the loan as initial penetration was already guaranteed.
  - The members of the cooperative bear no liability for the cooperative's bank debt.
- In addition, the cooperative came to an arrangement with a telco that meant should the cooperative default on its repayments the telco would buy the network from the bank for the remainder of the cost.
- In the second year, penetration remained high at 80%, which enabled the cooperative to put €1m back in to the community.

The role of the subsidy in the model is interesting to note. Financially the model did not rely on the subsidy: with 80% penetration a higher-value loan could have been sought while still maintaining the financial viability of the model, negating the need for the subsidy. The model did rely, however, on the high penetration achieved by the cooperative, which was reliant mainly on the free connection and first year of service afforded by the subsidy.

#### Governance

A board made up of elected local residents oversees the cooperative. All business functions, including maintenance, have been outsourced.

#### **Current status**

##### Penetration

The penetration rate remains around the 80% mark of the 8000 households, which allowed the cooperative to return around €1m to the community. Anecdotal evidence suggests that the penetration rate has remained high because of the low price and the reliability and speed of the service.

##### Services

Service innovation over the network is still in its infancy. Currently, the central service is Community TV (CTV). This allows local residents and organisations to broadcast over the network. An example of its use was to broadcast a wedding to a relative who was housebound. CTV is currently being developed, with the aim of trying to drive more content through the service.

Eventually it is anticipated that more local businesses will also make use of CTV. One of the first local businesses to use the service has been an estate agent who is making films of the properties he is handling for prospective buyers to view. Currently, Rabobank (a national bank) sponsors CTV with a view to understanding how they can best make use of the service. A further service delivered through CTV has been video communication, which has begun to be utilised by the community.

Businesses are beginning to make use of the network, though. The local bank provides a video communication facility so customers don't have to come in to the branch. A variety of other businesses are also using the network in a similar fashion.

What becomes apparent from these services is that the bandwidth is not necessary for the delivery of these services. There are currently no services that require the peak bandwidth speed that the network is capable of, and the majority could be delivered over a good ADSL2+ or cable connection. The fact that new very high bandwidth applications have not yet emerged may be due to the relatively small size of the market. However, now that the network has been built and is expanding in to new areas of Eindhoven it is entirely possible that new innovative services will be developed that do make more use of the bandwidth.

##### The Telco response

At first KPN, the incumbent telecommunications company, and UPC, the incumbent cable operator, were both naturally hostile to the OnsNet project. Relations have improved with KPN, who now offer the TV service down the second fibre in the

network. However, neither was interested in providing the service layer on top of the network. The main reason given for this was the small scale of the project; this was a response received from other ISPs that were approached.

### Expansion

OnsNet have created OnsNet Eindhoven, an expansion project in the Tongelre neighbourhood connecting Nuenen and Eindhoven. By the end of 2005, 80% of households in Tongelre were members of OnsNet Eindhoven. Other small-scale networks in surrounding neighbourhoods that used the Kenniswijk subsidy have also been sold to OnsNet, as part of its expansion plans. These projects failed to obtain the same level of penetration as OnsNet, usually at around 10% of households. OnsNet plans to bring this level of penetration up to Nuenen levels, and eventually move into areas of central Eindhoven.

### **Success?**

#### Success factors

The project has been successful, in that it has created a financially viable, sustainable fibre network in the local community that provides a service people want at a price they are willing to pay. There are a number of key factors in this success.

- Kees Rover's personal lead of the project. His involvement, enthusiasm and drive has been central to the success of the project.
  - There is, therefore, a question over the future development of the project should he disengage from it.
- The local characteristics of the community – the affluence and receptiveness to technology – was important, as residents could afford the service in the second year, and could understand how the project worked.
- The government subsidy was an important part of ensuring the high penetration rates required to make the project viable.

The project, however, has not yet seen the capacity utilised nor the services developed to the full potential. It will be interesting to see whether local businesses are able to utilise the network more fully and if the network can generate more revenue. It also remains to be seen if other services, especially telecare/telehealth, can be developed and delivered over the network, and particularly those that would require much higher levels of bandwidth.

#### Relevance to the BSG

The circumstances of the OnsNet project are unique and not necessarily to be found elsewhere in the Netherlands or the UK. There are some interesting issues to arise from the project for members of the BSG, however.

- The innovative business model, utilising the cooperative approach, demonstrates an alternative method of funding to construct these networks. That a bank was willing to finance part of this project shows that there is a commercial case to be made for fibre, although this would need to be proven in a project that did not receive an initial government subsidy. It is also interesting to note the cost incurred during construction by Volker Wessels,

which may suggest that estimates for the cost of laying cable in the UK should be revisited.

- The network has a large social value element to it. The community has excellent social cohesion, enhanced by the network – to achieve 97% take-up is impressive by any standard, and demonstrates the ability to pull together the community. Community TV provides social value through the use of the service by local clubs and organisations, including the church. Kees Rover and others went to great lengths to explain the importance of the name OnsNet, ‘Our Net’, as a symbol of the cohesion created by the network.
- The model provides an excellent case study for the public sector intervention work, and also illuminates some of the possible economic and social value of NGA – although this has largely yet to be demonstrated within Nuenen.
- The replicability of the model in the UK is unknown. The unique circumstances of the town, the large government subsidy and the personal involvement of Kees Rover are unlikely to be found in the UK. As a source of inspiration for local schemes in the UK, however, it is probably difficult to find better, and no doubt local authorities and others in the UK will look at the Nuenen model with great interest.