FTTH CASE STUDY

Amsterdam Citynet

Already the cultural and financial capital of the Netherlands, Amsterdam is set to become the fibre capital too. Glasvezelnet Amsterdam (GNA), a consortium of private and public investors, has finished rolling out a fibre network to 43,000 homes and plans to connect the rest of the city.

Also known as Citynet, the Amsterdam project has been under intense scrutiny from other municipal and local authorities keen to replicate the pioneering business model. The experience with Citynet has also been used to inform Dutch FTTH regulatory policy, which is now well established and provides a good degree of certainty for new entrants wanting to build fibre networks.

It's been a long journey for Citynet, however. Back in 2001, the Amsterdam authorities recognised the importance of high-speed connectivity to the economic well-being of the city, and launched a formal investigation into the best way to proceed. City officials reasoned that the network would need to be operational in the 2010—2015 timeframe, but could take seven to nine years to build, so they needed to start straight away.

The first step was to find out if the incumbent operator KPN or the cable TV companies had any intention of deploying fibre in Amsterdam. This seemed a possibility in 2003, when KPN published the "Delta Plan Fibre" which outlined a vision for bringing fibre to the whole of the Netherlands in collaboration with the cable companies. The cable operators weren't interested (cable was fast enough, they claimed), and the plan was dropped.

Following advice from Dutch and European regulators in 2004, Amsterdam municipality decided to create a public-private partnership (PPP) to invest in the passive fibre infrastructure only. This corporate structure was chosen to avoid contravening state aid rules, which prevent governments from making investments that distort markets and competition.

In late 2005 contracts were awarded for the construction and operation of the network. The physical network was to be constructed by a consortium of local Dutch companies. Operator BBned won the contract to operate the electronic equipment in the exchanges and offer wholesale services.

The project finally became a reality in 2006 when GNA was incorporated, with three groups of investors — the municipality, the housing associations and the private sector— each investing €6m in return for a one third stake in the company. Another €12m in funding was provided as debt financing, bringing the total investment to €30m.

General Information

Country: The Netherlands

City: Amsterdam

Population: 762,000

Network owner: Glasvezelnet Amsterdam (GNA)*

Name of project: Citynet

** GNA was originally set up with one-third share from each of the municipal authority, the housing corporations and private investors. Housing corporations were Ymere, Stadgenoot, Rochdale and De Key. Private investors were ING Real Estate and Reggefiber. Later on ING Real Estate sold its share to Reggefiber, and in February 2009 Reggefiber formed a joint venture with KPN, while increasing its share in GNA to 70% with the city and the housing associations now owning the remaining 30%.*

Deployment

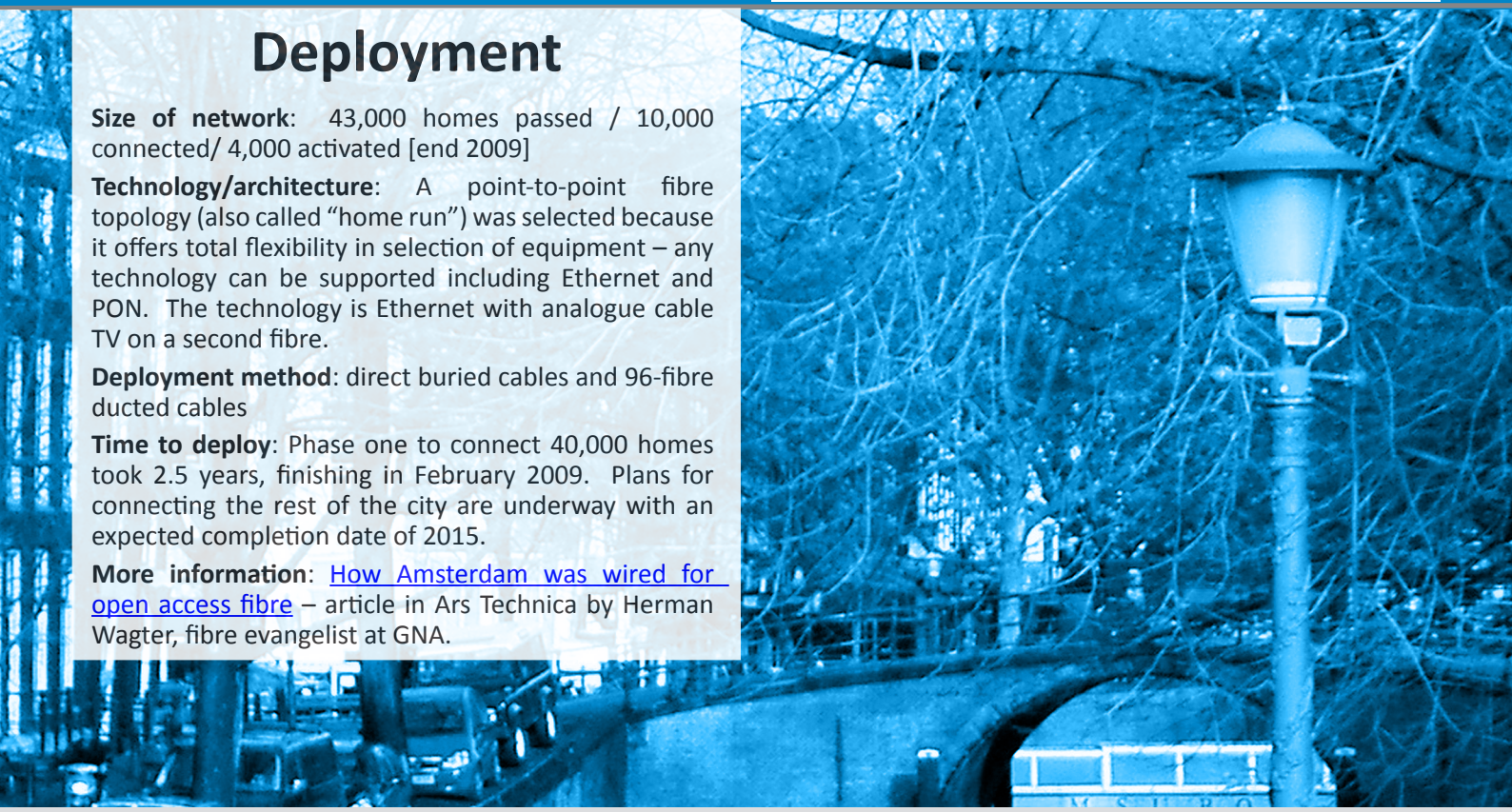
Size of network: 43,000 homes passed / 10,000 connected/ 4,000 activated [end 2009]

Technology/architecture: A point-to-point fibre topology (also called "home run") was selected because it offers total flexibility in selection of equipment – any technology can be supported including Ethernet and PON. The technology is Ethernet with analogue cable TV on a second fibre.

Deployment method: direct buried cables and 96-fibre ducted cables

Time to deploy: Phase one to connect 40,000 homes took 2.5 years, finishing in February 2009. Plans for connecting the rest of the city are underway with an expected completion date of 2015.

More information: How Amsterdam was wired for open access fibre – article in Ars Technica by Herman Wagter, fibre evangelist at GNA.



Once construction was underway, GNA faced a new challenge: how to roll out the network in a densely populated old city while causing minimum disruption. "Doing fibre to the home in a dense old city is one of the biggest challenges there is, and everyone wants to know how we're doing it," said Herman Wagter, former project director and now business development manager of GNA.

Asked to single out one challenge above all others, Wagter picked the difficulties in wiring up home and office buildings with multiple occupants. In dense cities like Amsterdam, approximately 90% of all buildings are multi-dwelling units, with anywhere from two to 500 individual apartments per building. The technical challenge is to get the fibres distributed from the basement or street level up to each individual apartment.

Business Case

Investment: €30 million to connect the first 40,000 addresses.

Business model: horizontally separated, open access network

Network owner: Glasvezelnet Amsterdam (GNA) http://www.glasvezelamsterdam.nl/

Network operator: BBned http://www.bbned.nl was granted exclusivity until October 2009, but the network now has multiple operators. KPN http://wwwkpn.nl started as an operator on the network in 2010.

"Nobody has given much thought to deploying new fibre cables inside existing apartment buildings, and it shows," he says. "Most buildings had to be surveyed from the inside to get any idea of what has to be done to distribute the fibre cabling to each apartment."

There is also a co-ordination challenge. Around half of Amsterdam housing is owned by housing associations, but for the remaining 50%, individual agreements must be negotiated with home owners before construction work can start. In the worst-case scenario, where there is no access to upper floors through shared areas, all the occupants of the building must be at home on the same day when the installer calls.

The roll-out to 10% of the city was seen as a necessary step in the process of learning how to deploy FTTH, before the entire city could be taken on. However, the biggest challenges the network has faced were not in construction, but in bringing together the right partners under the right conditions for investment, taking a total of five years from the initial idea to laying the first cable. Citynet was also challenged in court twice by cable operator UPC, and it took three years to get regulatory approval from the European Commission.

Eventually, in December 2007, the Commission ruled that the investment was not State aid because it met the terms of the Market Economy Investor Principle. In other words, the city of Amsterdam was permitted to invest in the network providing that substantial private investment was made at the same time and on the same terms.

In terms of commercial success, Citynet discovered that customers preferred competitive services in a multi-operator

market. Owing to limited funding by parent company Telecom Italia, this was something wholesale operator BBned could not support on its own. Therefore, GNA struck a deal with KPN, with the result that KPN also became a wholesale operator on the network in 2010.

In parallel, the Reggefiber Group, which is a shareholder of GNA, was thinking of joining forces with KPN to deploy fibre across the whole of the Netherlands. The Dutch competition authority NMa and telecoms regulator OPTA joined the negotiations because they wanted to create a framework that would guarantee equal access to service providers and infrastructure competition without holding back investment.

The desire to include the public-private partnership of GNA in this framework prolonged the discussions with the regulators until the end of 2009, at which point Reggefiber was able to increase its share in GNA to 70% and let GNA enjoy the economies of scale that Reggefiber can achieve.

End-user Services

Service providers: ISPs on the network include Alice (part of Telecom Italia), Concepts ICT, InterNLnet, Tweak and KPN. Internet, double and triple-play packages are available, as well as services from other providers such as internet telephony and online backup.

What's the cost? Alice Comfort Plus provides 20 Mbps symmetric broadband, unlimited telephone calls within the Netherlands, 39 TV channels and 25 radio stations for €44.50 per month. InterNLnet offers 100 Mbps symmetric broadband only for €119.95 per month [prices correct on 10/6/2010].

Customer feedback: The Internet services are appreciated by the end-users. The lack of digital and HDTV offerings in the TV package supplied by BBned has been a source of complaints. An upgrade to a more competitive TV offering is expected in 2010.

One unfortunate side-effect of the discussions with the regulators was that many business decisions had to wait until the regulatory framework had been settled. This stalled further roll-out until the beginning of 2010, but deployment has now restarted in earnest, with the target of connecting another 100,000 addresses by the end of 2012.

Written in August 2010

Contact us on info@ftthcouncil.eu