

# P&T Luxembourg

## P&T Luxembourg Invests in National FTTH Coverage

Luxembourg sees 100% FTTH coverage as key to future economic growth

Luxembourg has one of Europe's smallest populations, but it also has one of the region's most far-reaching and advanced fibre-to-the-home (FTTH) deployment programmes.

### General Information

**Location:**

Luxembourg, national network

**Infrastructure owner:**

P&T Luxembourg

**Population:**

Roughly 527,000

In April 2010 the Luxembourg government set targets to provide, by 2015, broadband speeds of 1 Gigabit-per-second (Gbit/s) downstream and 500 Megabits-per-second (Mbit/s) upstream to 50% of the population, and 100 Mbit/s downstream and 50 Mbit/s upstream to remaining households. By 2020 Luxembourg wants all of its citizens—which currently number some 527,000—to have a minimum of 1 Gbit/s downstream access.

State-owned incumbent, P&T Luxembourg, is already on track to fulfil the government's plans with its countrywide build-out of a point-to-point FTTH network.

"The government wants to see more ICT players here. We want to attract international firms and be a global hub for all ICT related activities. We already have five interconnected data centres with a total computing space of nearly 17,000 m<sup>2</sup>, 90% of which is Tier IV" says Gaston Bohnenberger head of network infrastructure, P&T Luxembourg. "We know fibre is what we need for the future."



Indeed the company is in the position to meet the government's 2013 targets of being capable of providing 100 Mbit/s downstream and 50 Mbit/s upstream to 80% of homes and 1 Gbit/s downstream and 500 Mbit/s upstream to 25% of homes in the country.



P&T Luxembourg first laid FTTH in 1997, as part of a hybrid copper and optical fibre access network. However, it wasn't until 2008, when FTTH customer premises equipment prices fell to a level that made services economically viable, that the operator started installing passive optical splitters in its street cabinets. By the end of 2010 it had connected approximately 18% of Luxembourg households to its point-to-multipoint GPON network.

### Deployment

**Size of network:**

- More than 32% homes passed (77,000 homes passed and 51,000 homes connected)
- Planning: more than 50% homes passed by 2015 and 100% by 2020.

**Number of subscribers:**

14,000 FTTH/B subscribers (retail and wholesale).

**Technology/architecture:**

P&T Luxembourg provides point-to-point network access.

**Deployment methods:**

P&T Luxembourg coordinates closely on engineering works with utility companies and municipalities to reduce cost and disruption of network deployment wherever possible. The operator strives to re-use existing ducts into which it extends micro-tubes. This way it avoids digging trenches and merely needs to create a small opening by the customer's existing duct through which to draw the micro tube.

In 2009, in order to prepare for higher broadband network capacity, P&T Luxembourg decided to move to a point-to-point architecture and give every customer four fibres, two of which are connected to an optical distribution frame. If a customer needs more than two fibres, the remaining two fibres can be activated in the joining box, explains Bohnenberger.

While P&T Luxembourg is moving quickly on FTTH deployment, it views the network as a long-term investment, especially given that the network will extend to all of Luxembourg's rural areas.

## Business Case

### Investment:

Several hundred million euros funded completely by the operator. No public subsidies.

### Business model:

P&T Luxembourg is a vertically integrated, state-owned network operator that is building an FTTH network to provide wholesale and retail services to all of Luxembourg's homes.

"Our return on investment strongly depends on the final investment and the take-up rates," says Bohnenberger, adding that the fibre unbundling price is 17.75 euros per fibre per month today.

P&T Luxembourg's wholesale FTTH services include Bitstream Access, and the possibility of collocation in the company's central offices and point of presence.

The operator, which received the green light from the regulator to offer FTTH retail services at the end of 2011, has seen a difference between how customers use copper and fibre.

"If we compare a broadband customer on fibre to one on copper, we notice a strong increase in the downstream traffic and in the upstream traffic. Especially in the upstream direction, the changes are very marked. More and more content is being uploaded by fibre customers. The upstream capacity of fibre is a strong advantage" says Bohnenberger.



Competing cable companies already offer Docsis 3.0 services— providing high-speed Internet and TV services — to 70% of the population at speeds of up to 120 Mbit/s. In contrast P&T Luxembourg is offering VDSL services today only up to 30 Mbit/s. "Even if we plan to increase VDSL speeds up to 100 Mbit/s in the near future, we need fibre to remain competitive" says Bohnenberger.

## End-user Services

Currently P&T Luxembourg's FTTH offer comprises of triple-play services, including HD IPTV. Internet connection including voice is priced at between 54.99 euros for 30 Mbit/s downstream and 10 Mbit/s upstream, and 74.99 euros for 100 Mbit/s downstream and 50 Mbit/s downstream. IPTV services with more than 100 channels in SD and HD start at 19.99 euros.

P&T Luxembourg continues to market services that can run over either VDSL or FTTH. "But of course we choose fibre wherever possible because only fibre can fully exploit the possibilities and all the offered features of our IPTV-Services, such as parallel streaming and recording of HD channels, 3D HD channels, fast VOD streaming on multiple TV sets," says Bohnenberger.

Bohnenberger adds that customers who take an IPTV service with a 30- Mbit/s fibre connection are more satisfied than those that take the same service over a 30- Mbit/s copper connection.



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Photos provided by P&T Luxembourg  
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