FTTH Council Europe - Panorama

Europe Broadband status
Market at September 2018

FTTH Council Europe Conference – March 12-14th, 2019 - Amsterdam
Agenda

1. Study Background
2. General overview and main trends
3. Leading countries
4. European Ranking
5. Conclusion – Key outputs
6. Appendix
01 Study Background
Methodology

- Mission on behalf of the FTTH Council Europe – 17th edition
- Provide a complete summary of the status of FTTH/B in Europe at Sept. 2018

**ACTIONS**

**Scope**
- Analysis of 39 countries
- Data per player for FTTH/B and other fibre-based architectures
- Key parameters study: technical, financial, business model, figures

**Bottom-up methodology**
- Desk research
- Direct contacts with leading players and IDATE partners within countries
- Information exchange with FTTH Council Europe members

**Results**
- Both quantitative and qualitative data
- Market status in the country
- Strategic approach of involved players
## Indicators affecting the FTTH adoption

### Positive criteria

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demand for data and bandwidth continues to grow steadily, pushing operators towards FTTH technologies</td>
</tr>
<tr>
<td>2</td>
<td>Public authorities, via subsidies and an investment-friendly regulatory framework, will participate actively in fibre enhancement throughout Europe</td>
</tr>
<tr>
<td>3</td>
<td>Many incumbents shifting business models to focus on FTTH rather than copper-based technologies</td>
</tr>
<tr>
<td>4</td>
<td>Mutualized networks as well as sharing agreements tend to push FTTH development</td>
</tr>
<tr>
<td>5</td>
<td>Technology innovation to help lowering costs</td>
</tr>
<tr>
<td>6</td>
<td>Eastern Europe actively involved in FTTH deployments, leaving DSL behind</td>
</tr>
<tr>
<td>7</td>
<td>Fibre densification driven by 5G deployment &amp; cost savings from fibre-5G convergence</td>
</tr>
</tbody>
</table>
## Indicators affecting the FTTH adoption

### Negative impacts

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Still no clear mass-market applications for FTTH</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>New variants or mixed-build architectures, along with G.Fast or DOCSIS 3.1, could delay FTTH investments by operators</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Potential risk of mobile 5G broadband technology delaying FTTH in economically non-viable areas</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Public funding initiatives may not be assertive to effectively encourage FTTH growth</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Substitution by fixed-wireless access or ‘hybrid’ access in remote or difficult to service areas</td>
</tr>
</tbody>
</table>
General overview and main trends
As at September 2018 in EU39*:

- 59.6 million FTTH/B subscribers
- Almost 160 million FTTH/B Homes Passed

FTTH/B figures as at September 2018

<table>
<thead>
<tr>
<th>Month</th>
<th>Subscribers</th>
<th>Homes Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 2010</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>September 2012</td>
<td>16</td>
<td>64</td>
</tr>
<tr>
<td>September 2013</td>
<td>20</td>
<td>77</td>
</tr>
<tr>
<td>September 2014</td>
<td>31</td>
<td>108</td>
</tr>
<tr>
<td>September 2015</td>
<td>36</td>
<td>126</td>
</tr>
<tr>
<td>September 2016</td>
<td>45</td>
<td>140</td>
</tr>
<tr>
<td>September 2017</td>
<td>52</td>
<td>149</td>
</tr>
<tr>
<td>September 2018</td>
<td>60</td>
<td>160</td>
</tr>
</tbody>
</table>

*EU39 = EU28 (excl. Cyprus) + 4 CIS countries + Andorra, Iceland, Israel, Macedonia, Norway, Serbia, Switzerland, Turkey

Cyprus was replaced by Macedonia at end-2012 because the FTTH/B market is much more developed in this country.
Historical data and growing trends (EU28 / EU39)

- EU28 has a stronger position in the whole European region
- By Sept. 2018, half of FTTH/B deployments are performed inside of the EU28 countries, an increasing trend along the previous years

**Evolution of FTTH/B Subscribers (million)**
Comparison EU28 / EU39

**Evolution of FTTH/B Homes Passed (million)**
Comparison EU28 / EU39

Source: IDATE for FTTH Council EUROPE
Incumbents are taking a growing role in FTTH/B Initiatives

- Analysis of around 400 FTTH/B projects in EU39 at September 2018
- Around 55% of total Homes in the region have been passed by Alternative ISPs, and approx. 41% by incumbents (as compared to 21% by incumbents in 2011)
- Municipalities/Local Authorities, along with utilities when appropriate, will remain those ones that will help ensure an exhaustive coverage at term

Breakdown of FTTH/B Sockets deployed by type of player (%)
Data comparison between Dec. 2011 and Sept. 2018

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Sockets deployed</th>
<th>Incumbents</th>
<th>Alternative ISPs</th>
<th>Municipalities/Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>71,435,000</td>
<td>33,200,000</td>
<td>38,235,000</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>43,234,160</td>
<td>20,800,000</td>
<td>22,375,000</td>
<td>990,160</td>
</tr>
<tr>
<td>France</td>
<td>39,201,000</td>
<td>10,906,000</td>
<td>26,565,000</td>
<td>1,730,000</td>
</tr>
<tr>
<td>Ukraine</td>
<td>10,765,000</td>
<td>2,107,000</td>
<td>8,765,750</td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>9,124,750</td>
<td>2,107,000</td>
<td>7,017,750</td>
<td></td>
</tr>
</tbody>
</table>

Top European countries – Breakdown in terms of Sockets deployed

Source: IDATE for FTTH Council EUROPE
03 | Leading countries
General Ranking: FTTH/B Homes passed

European ranking in terms of FTTH/B Homes passed over time (in million homes)
Data comparison between Sept. 2015 and Sept. 2018

- Sept. 2015
- Sept. 2016
- Sept. 2017
- Sept. 2018

Top 5 annual growth rates – Homes passed (in %)
Data from Sept. 2017 to Sept. 2018

- + 43.1 % - Italy
- + 40.5 % - Poland
- + 22.8 % - UK
- + 17.4 % - Portugal
- + 15.1 % - Germany

Source: IDATE for FTTH Council EUROPE
General Ranking: FTTH/B Sockets deployed*

European ranking in terms of FTTH/B Sockets deployed (in million homes)
Data comparison between Sept. 2015 and Sept. 2018

18 countries with more than 2m. Optical sockets

EU28 : 12 countries in the Ranking

Top 5 annual growth rates – Sockets deployed (%)
Data from Sept. 2017 to Sept. 2018

- + 77 % Italy
- + 40.5 % Poland
- + 36.9 % France
- + 26.2 % Spain
- + 22.8 % UK

*Total amount of FTTH/B optical sockets deployed by each player in a country (may be higher than Homes Passed when homes are covered by several players). Might lead to overlap situations

Source: IDATE for FTTH Council EUROPE
General Ranking: FTTH/B Coverage

* FTTH/B coverage* as at September 2018
  (* Homes passed / Households)

- **FTTH/B coverage > 90%**
- **FTTH/B coverage 70 – 90 %**
- **FTTH/B coverage 50 – 70 %**
- **FTTH/B coverage < 50 %**

<table>
<thead>
<tr>
<th>Country</th>
<th>FTTH/B Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>91%</td>
</tr>
<tr>
<td>Andorra</td>
<td>99.9%</td>
</tr>
<tr>
<td>Portugal</td>
<td>99.2%</td>
</tr>
<tr>
<td>Spain</td>
<td>97.8%</td>
</tr>
<tr>
<td>Latvia</td>
<td>96.4%</td>
</tr>
<tr>
<td>Lithuania</td>
<td>95.4%</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>91%</td>
</tr>
<tr>
<td>Portugal</td>
<td>99.2%</td>
</tr>
<tr>
<td>Latvia</td>
<td>96.4%</td>
</tr>
<tr>
<td>Lithuania</td>
<td>95.4%</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>91%</td>
</tr>
</tbody>
</table>

Source: IDATE for FTTH Council EUROPE

Coverage rate
EU28 : 36.4%
EU39 : 46.4%
General Ranking: FTTH/B Subscribers

European ranking in terms of FTTH/B Subscriptions (million)
Data comparison between Sept. 2015 and Sept. 2018

Source: IDATE for FTTH Council EUROPE
General Ranking: FTTH/B Take-up

FTTH/B take-up* as at September 2018
(*Subscriptions / Homes Passed)

- FTTH/B take-up > 50%
- FTTH/B take-up 40 – 50 %
- FTTH/B take-up 30 – 40 %
- FTTH/B take-up < 30 %

Take-up rate:
EU28: 38.2%
EU39: 37.4%

Belarus: 64.5%
Andorra: 61.4%
Belgium: 51.2%
Netherlands: 52.6%
Romania: 52.2%

Source: IDATE for FTTH Council EUROPE

Enlighten your digital future!

© IDATE DigiWorld 2019 – p. 16
04 European Ranking
Incorporates countries of +200k Households in which FTTH/B subscribers represent at least 1% of total households

- Eastern Europe and Nordic countries are among the top of penetration ranks, mainly due to a proactive state intervention towards fibre expansion

- Some major European countries are lagging behind (except Spain and Portugal) due to a predominance of copper-based technologies (VDSL, G.Fast) and/or cable networks (DOCSIS 3.0 / 3.1)

Penetration rates of European countries at September 2018
(FTTH/B Subscriptions / Households)

Source: IDATE for FTTH Council EUROPE
05 Key Conclusions
Enlighten your digital future!

**Key conclusions**

- **Public-private initiatives are the key trend of 2018**: more and more involvements from public authorities (via subsidies and an adequate policy framework) to promote fibre expansion throughout their country.
- **Progressive move towards fibre expansion in hard-to-reach areas**: urban dense areas are well covered by fibre networks in Europe, the focus for public & private actors is now on remote areas. How to promote high-speed broadband access in these isolated areas?

- **Pent Up Demand becoming clear**: Seeing large pent up demand (high connection rates) in regions now just beginning large FTTH rollouts (UK / Italy)
- **EU28 is Mobilizing for FTTH/B**: EU28 now catching up and surpassing the growth trends seen across the larger EU39
- **EU39 region** has reached almost **160 million homes** with FTTH/B networks, representing a **coverage of 46.4%** of the total Homes
- **Countries like Italy, Poland and UK** have experienced **strong growth**, increasing their **homes passed** by more than 20%, as well as their **subscribers** by more than 36%

**Regional Recap**

<table>
<thead>
<tr>
<th>Country</th>
<th>Subscribers</th>
<th>Homes Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>+ 72.5 %</td>
<td>+ 43.1 %</td>
</tr>
<tr>
<td>Poland</td>
<td>+ 36 %</td>
<td>+ 40.5 %</td>
</tr>
<tr>
<td>UK</td>
<td>+ 83.2 %</td>
<td>+ 22.8 %</td>
</tr>
</tbody>
</table>
Global Ranking at September 2018 – Mature markets

FTTH/B Penetration rates worldwide at September 2018
(FTTH/B Subscriptions / Households)

GCC and APAC countries leading the ranking

- Includes countries of +200k Households in which FTTH/B subscribers represent at least 1% of total households

Source: IDATE for FTTH Council EUROPE
Global Ranking at September 2018 – Less than 30% penetration

FTTH/B Penetration rates worldwide at September 2018
(FTTH/B Subscriptions / Households)

- Includes countries of >200k Households in which FTTH/B subscribers represent at least 1% of total households

Some major European countries still lagging behind

[Graph showing FTTH/B penetration rates worldwide with countries highlighted in different colors for FTTH and FTTB subscribers]

Source: IDATE for FTTH Council EUROPE
Appendix
Appendix – FTTH/B Homes Passed/Subscribers YoY (in millions)

Andorra (99.9% Coverage / 61% Take-up / 61% Homes connected)

Austria (8% Coverage / 18% Take-up / 1.5% Homes connected)

Belarus (62% Coverage / 64% Take-up / 40% Homes connected)

Belgium (0.5% Coverage / 51% Take-up / 0.3% Homes connected)

Take-up rate = FTTHB Subs / FTTHB HP

Source: IDATE for FTTH Council EUROPE
Appendix – FTTH/B Homes Passed/Subscribers YoY (in millions)

Bulgaria (95% Coverage / 34% Take-up / 32% Homes connected)

Croatia (26% Coverage / 7% Take-up / 2% Homes connected)

Czech Republic (38% Coverage / 38% Take-up / 15% Homes connected)

Denmark (70% Coverage / 27% Take-up / 19% Homes connected)

Take-up rate = FTTHB Subs / FTTHB HP

Source: IDATE for FTTH Council EUROPE
Appendix – FTTH/B Homes Passed/Subscribers YoY (in millions)

Estonia (55% Coverage / 49% Take-up / 27% Homes connected)

Finland (62% Coverage / 41% Take-up / 26% Homes connected)

France (45% Coverage / 43% Take-up / 19% Homes connected)

Germany (7% Coverage / 31% Take-up / 2% Homes connected)

Take-up rate = FTTHB Subs / FTTHB HP

Source: IDATE for FTTH Council EUROPE
Appendix – FTTH/B Homes Passed/Subscribers YoY (in millions)

Hungary (45% Coverage / 35% Take-up / 16% Homes connected)

Iceland (78% Coverage / 44% Take-up / 35% Homes connected)

Ireland (23% Coverage / 17% Take-up / 4% Homes connected)

Take-up rate = FTTHB Subs / FTTHB HP

Source: IDATE for FTTH Council EUROPE
Appendix – FTTH/B Homes Passed/Subscribers YoY (in millions)

Israel (68% Coverage / 0.2% Take-up / 0.1% Homes connected)

Italy (24% Coverage / 17% Take-up / 4% Homes connected)

Kazakhstan (44% Coverage / 34% Take-up / 15% Homes connected)

Latvia (96% Coverage / 52% Take-up / 50% Homes connected)

Take-up rate = FTTHB Subs / FTTHB HP
Appendix – FTTH/B Homes Passed/Subscribers YoY (in millions)

Lithuania (95% Coverage / 49% Take-up / 47% Homes connected)

Luxembourg (70% Coverage / 27% Take-up / 19% Homes connected)

Macedonia (26% Coverage / 45% Take-up / 12% Homes connected)

Malta (32% Coverage / 18% Take-up / 6% Homes connected)

Take-up rate = FTTH Subs / FTTHB HP

Source: IDATE for FTTH Council EUROPE
Appendix – FTTH/B Homes Passed/Subscribers YoY (in millions)

Netherlands (39% Coverage / 51% Take-up / 20% Homes connected)

Norway (88% Coverage / 41% Take-up / 37% Homes connected)

Poland (28% Coverage / 18% Take-up / 5% Homes connected)

Portugal (99% Coverage / 37% Take-up / 37% Homes connected)

Take-up rate = FTTHB Subs / FTTHB HP

Source: IDATE for FTTH Council EUROPE
Appendix – FTTH/B Homes Passed/Subscribers YoY (in millions)

Romania (73% coverage / 53% take-up / 38% Homes connected)

Russia (84% coverage / 42% take-up / 35% Homes connected)

Serbia (6% coverage / 30% take-up / 2% Homes connected)

Slovakia (72% coverage / 34% take-up / 24% Homes connected)

Source: IDATE for FTTH Council EUROPE
Appendix – FTTH/B Homes Passed/Subscribers YoY (in millions)

**Slovenia (52% Coverage / 44% Take-up / 23% Homes connected)**

- September 2015: 0.14
- September 2016: 0.15
- September 2017: 0.18
- September 2018: 0.21

**Spain (98% Coverage / 45% Take-up / 44% Homes connected)**

- September 2015: 2.59
- September 2016: 4.45
- September 2017: 6.06
- September 2018: 7.92

**Sweden (91% Coverage / 48% Take-up / 44% Homes connected)**

- September 2015: 1.60
- September 2016: 1.84
- September 2017: 2.03
- September 2018: 2.09

**Switzerland (45% Coverage / 17% Take-up / 8% Homes connected)**

- September 2015: 0.19
- September 2016: 0.27
- September 2017: 0.29
- September 2018: 0.31

Source: IDATE for FTTH Council EUROPE
Appendix – FTTH/B Homes Passed/Subscribers YoY (in millions)

Turkey (36% Coverage / 31% Take-up / 11% Homes connected)

Ukraine (59% coverage / 17% take-up / 10% Homes connected)

United Kingdom (10% coverage / 13% take-up / 1.3% Homes connected)

Take-up rate = FTTHB Subs / FTTHB HP

Source: IDATE for FTTH Council EUROPE

Enlighten your digital future!

© IDATE DigiWorld 2019 – p. 33