FTTH/B Market Panorama in Europe

FTTH Council EUROPE

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Agenda

1. Study Background
2. General overview and main trends
3. Who is leading the race towards full-fibre?
4. European Ranking - September 2020
5. Key conclusions
6. Appendix
Study
Background
Methodology

- Mission on behalf of the **FTTH Council Europe**
- Provide a complete summary of the status of FTTH/B in Europe measured during **September 2020**

### 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
Important Definitions

<table>
<thead>
<tr>
<th>Homes Passed</th>
<th>Potential number of Premises which a Service Provider has capability to connect to an FTTH/FTTB network in a service area. This definition excludes premises that cannot be connected without further installation of substantial fibre plant to reach the subscriber’s location.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sockets</td>
<td>Connection point of a single fibre service provider inside/outside a premises. Possibility to have multiple sockets if the location is serviced by multiple FTTH network operators in either coordinated or competitive overbuild situations.</td>
</tr>
<tr>
<td>Subscribers</td>
<td>Premises which are connected to a network and are already subscribed</td>
</tr>
</tbody>
</table>

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FTTH/B Market Panorama

General overview & Main trends
FTTH/B Market Panorama

Key Figures

FTTH/B in EU39* countries
September 2020 Update

82 million FTTH/B Subscribers
183 million FTTH/B Homes Passed

FTTH/B European market evolution (EU39)
In terms of Homes Passed and Subscribers (2012-2020)

Take-up rate
EU27+UK: 46.9% (Up 3.6%)
EU39: 44.9% (Up 1.9%)

Coverage rate
EU27+UK: 43.8% (Up 4.4%)
EU39: 52.5% (Up 2.6%)

* EU39 detailed composition:
- EU27 + United Kingdom
- 4 CIS countries: Belarus, Kazakhstan, Russia, Ukraine
- Iceland, Israel, North Macedonia, Norway, Serbia, Switzerland, Turkey

Source: IDATE for FTTH Council EUROPE

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Market trends (EU27+UK vs. EU39)

- Teleworking and need for robust connectivity during the pandemic led to increased subscription levels in the whole region (YoY)
- EU27+UK countries account for more than 56% of FTTH/B Subscriptions, an increasing trend over the years (53.7% at Sept 2019)
- With 98.3 million Homes Passed, more than half (54%) of FTTH deployments are performed inside EU27+UK countries (mainly intensified due to COVID19 pandemic)

**Evolution of FTTH/B Subscribers (million)**
EU27+UK vs EU39 comparison

**Evolution of FTTH/B Homes Passed (million)**
EU27+UK vs EU39 comparison

Source: IDATE for FTTH Council EUROPE
FTTH/B Market Panorama
Altnets drive the FTTH race; incumbents progressively redefining their full-fibre strategies

Around 400 FTTH/B initiatives identified in EU39 by September 2020
- Reinforced commitment of Altnets towards FTTH expansion (e.g. in UK, Germany)
- Based on share - 39% of Connected Homes are passed by incumbents, versus 41% in 2019 – showing Altnets increasing their market share this year.
- Municipalities/utilities and alternative ISPs cover many remote and isolated areas. Further enhanced with public funds and incentives.

Breakdown of FTTH/B Homes Passed by type of player (%)
Data comparison between Dec. 2011 and Sept. 2020

<table>
<thead>
<tr>
<th>BACK IN 2011</th>
<th>SEPTEMBER 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>71% Incumbents</td>
<td>57% Incumbents</td>
</tr>
<tr>
<td>21% Alternative ISPs</td>
<td>4% Alternative ISPs</td>
</tr>
<tr>
<td>8% Municipalities/Utilities</td>
<td>39% Municipalities/Utilities</td>
</tr>
</tbody>
</table>

Top 5 European countries

1. Russia 49 millions
2. France 21.4 millions
3. Spain 15.9 millions
4. Ukraine 11.5 millions
5. Italy 11 millions

Source: IDATE for FTTH Council EUROPE
FTTH/B Market Panorama

Who is leading the race towards full-fibre?
FTTH/B Homes Passed
EU27+UK Ranking

EU27+UK ranking in terms of FTTH/B Homes passed over time (in million homes)
Data comparison between Sept. 2015 and Sept. 2020

5 fastest growing markets in EU27+UK (in both volume and %)
Data from Sept. 2019 to Sept. 2020 (in terms of FTTH/B Homes Passed)

Source: IDATE for FTTH Council EUROPE
FTTH/B Homes Passed
EU39 Ranking

European ranking in terms of FTTH/B Homes passed, countries with > 2 million homes passed
Data comparison between Sept. 2015 and Sept. 2020 (in million homes)

5 fastest growing markets (in both volume and %)
Data from Sept. 2019 to Sept. 2020 (in terms of FTTH/B Homes Passed)

Russia: 21.4M (+4.6M yoy)
France: 11M (+2.8M yoy)
Germany: 6.8M (+2.7M yoy)
United Kingdom: 4.2M (+1.7M yoy)
Italy: 11M (+2.8M)

Source: IDATE for FTTH Council EUROPE

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**European leaderboards – EU27+UK**

Halfway there: EU27+UK – 14/28 Countries now exceeding 50% of total homes passed with Full-fibre!

**FTTH/B coverage* in EU27+UK as of September 2020**

(* Homes passed / Households)

<table>
<thead>
<tr>
<th>Country</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latvia</td>
<td>91.9%</td>
</tr>
<tr>
<td>Lithuania</td>
<td>89.9%</td>
</tr>
<tr>
<td>Spain</td>
<td>87.8%</td>
</tr>
<tr>
<td>Portugal</td>
<td>83.0%</td>
</tr>
<tr>
<td>Sweden</td>
<td>81.3%</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>76.5%</td>
</tr>
<tr>
<td>Malta</td>
<td>75.0%</td>
</tr>
<tr>
<td>Romania</td>
<td>72.9%</td>
</tr>
<tr>
<td>France</td>
<td>72.7%</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>70.0%</td>
</tr>
<tr>
<td>Slovenia</td>
<td>68.9%</td>
</tr>
<tr>
<td>Denmark</td>
<td>68.8%</td>
</tr>
<tr>
<td>Ireland</td>
<td>62.9%</td>
</tr>
<tr>
<td>EU39</td>
<td>52.5%</td>
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<tr>
<td>Slovakia</td>
<td>49.5%</td>
</tr>
<tr>
<td>Hungary</td>
<td>49.5%</td>
</tr>
<tr>
<td>EU27+UK</td>
<td>43.8%</td>
</tr>
<tr>
<td>Poland</td>
<td>41.3%</td>
</tr>
<tr>
<td>Italy</td>
<td>41.0%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>39.6%</td>
</tr>
<tr>
<td>Finland</td>
<td>39.3%</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>34.7%</td>
</tr>
<tr>
<td>Croatia</td>
<td>33.3%</td>
</tr>
<tr>
<td>Cyprus</td>
<td>23.0%</td>
</tr>
<tr>
<td>Austria</td>
<td>21.2%</td>
</tr>
<tr>
<td>Germany</td>
<td>16.4%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>15.1%</td>
</tr>
<tr>
<td>Greece</td>
<td>9.9%</td>
</tr>
<tr>
<td>Belgium</td>
<td>5.6%</td>
</tr>
</tbody>
</table>

Source: IDATE for FTTH Council EUROPE

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European leaderboards – EU39
Halfway there: EU39 – 20 countries now have more than 50% of total homes with Full-fibre!

FTTH/B coverage* as of September 2020
(* Homes passed / Households)

Belarus 92.0%
Latvia 91.9%
Iceland 87.8%
Lithuania 87.5%
Spain 91.5%
Russia 91.6%
Portugal 90.0%
Norway 89.9%
Sweden 88.9%
Bulgaria 85.9%
Malta 84.5%
Romania 88.9%
France 87.9%
Luxembourg 86.9%
Slovenia 86.9%
Denmark 84.5%
Ukraine 87.9%
Estonia 87.9%
Austria 87.5%
Cyprus 85.1%
North Macedonia 83.0%
Croatia 80.0%
Czech Republic 79.9%
Turkey 79.9%
EU27+UK 76.5%
Israel 79.9%
Poland 79.9%
Italy 79.9%
Kazakhstan 79.9%
EU39 76.9%
Ireland 78.9%
Belgium 79.9%

Source: IDATE for FTTH Council EUROPE
FTTH/B Coverage
Summary map

FTTH/B coverage* map - September 2020
(* Homes passed / Households)

- FTTH/B coverage > 90%
- FTTH/B coverage 75 – 90 %
- FTTH/B coverage 50 – 75 %
- FTTH/B coverage < 50 %

Coverage rate
EU27+UK: 43.8% (Up 4.4%)
EU39: 52.5% (Up 2.6%)

Source: IDATE for FTTH Council EUROPE
FTTH/B Sockets Deployed* EU27+UK Ranking

EU27+UK ranking in terms of FTTH/B Sockets deployed over time (in million homes)
Data comparison between Sept. 2015 and Sept. 2020

- FTTH/B Sockets Deployed: The connection point of a single fibre service provider inside/outside a premises. Multiple sockets are counted if the location is serviced by multiple FTTH network operators.

5 fastest growing markets (in volume and in %)
Data from Sept. 2019 to Sept. 2020 (in terms of FTTH/B Sockets Deployed)

1. France: + 24.6M (+155 %)
2. Spain: + 10.2M (+66 %)
3. Italy: + 3.9M (+49 %)
4. Germany: + 2.7M (+46 %)
5. UK: + 2M (+46 %)

Source: IDATE for FTTH Council EUROPE
FTTH/B Sockets Deployed*  
EU39 Ranking

European ranking in terms of FTTH/B Sockets deployed, countries with > 2 million sockets deployed  
Data comparison between Sept. 2015 and Sept. 2020 (in million)


*FTTH/B Sockets Deployed: The connection point of a single fibre service provider inside/outside a premises.  
Multiple sockets are counted if the location is serviced by multiple FTTH network operators.

5 fastest growing markets (in volume and in %)  
Data from Sept. 2019 to Sept. 2020 (in terms of FTTH/B Sockets Deployed)

1. France  + 24.6M  + 155 %
2. Spain  + 10.2M  + 110 %
3. Russia  + 5.1M  + 66 %
4. Greece  + 3.9M  + 49 %
5. Germany  + 2.7M  + 49 %

Source: IDATE for FTTH Council EUROPE
FTTH/B Subscribers
EU27+UK Ranking

EU27+UK ranking in terms of FTTH/B Subscriptions over time (in million homes)
Data comparison between Sept. 2015 and Sept. 2020

5 fastest growing markets (in volume and in %)
Data from Sept. 2019 to Sept. 2020 (in terms of FTTH/B Subscribers)

Source: IDATE for FTTH Council EUROPE
FTTH/B Subscribers
EU39 Ranking

European ranking in terms of FTTH/B Subscriptions over time, countries with > 1 million subscriptions
Data comparison between Sept. 2015 and Sept. 2020 (in million)

- **September 2015**
- **September 2016**
- **September 2017**
- **September 2018**
- **September 2019**
- **September 2020**

### 5 fastest growing markets (in volume and in %)
Data from Sept. 2019 to Sept. 2020 (in terms of FTTH/B Subscribers)

1. **France**
   - **11.3M (+1.4M yoy)**
   - **+2.8M (+64%)**

2. **Spain**
   - **10.3M (+2.8M yoy)**
   - **+1.7M (+55%)**

3. **Turkey**
   - **2.04M (+674k yoy)**
   - **+1.4M (+52%)**

4. **Russia**
   - **+718k (+44%)**

5. **United Kingdom**
   - **+694k (+42%)**

Source: IDATE for FTTH Council EUROPE

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FTTH/B Take-up
Summary map

FTTH/B take-up* map - September 2020
(* Homes passed / Households)

- 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
EU27+UK: 46.9% (Up 3.6%)
EU39: 44.9% (Up 1.9%)

Source: IDATE for FTTH Council EUROPE
Focus on microstates progress

Summary

Andorra - 45,000 Households (2019)
- 45,000 Homes Passed by Fibre: 100%*
- 37,165 Fibre Subscribers: 83%*
  * of total homes

Liechtenstein - 17,300 Households (2019)
- 12,000 Homes Passed by Fibre: 69%*
- 7,600 Fibre Subscribers: 66%*
  * of total homes

Monaco - 16,200 Households (2019)
- 9,500 Homes Passed by Fibre: 60%*
- 500 Fibre Subscribers: 3%*
  * of total homes

San Marino - 11,500 Households (2019)
- 6,500 Homes Passed by Fibre: 56%*
- 5,500 Fibre Subscribers: 48%*
  * of total homes

Source: IDATE estimations for FTTH
Council EUROPE

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Fibre improves customer experience

- Full-fibre connectivity is designed for residential usage to support an increasing demand for bandwidth-intensive services (such as TV and video)
- Fibre is also a key enabler for businesses, facilitating Working From Home (WFH) situations, joining reliable connectivity with higher upload bandwidth and reduced latency.
- This supports video-conferencing, cloud-based services and other real-time or bandwidth hungry applications now in demand.

Sources: IDATE for FTTH Council EUROPE
Ookla Speedtest Global Index March 2021
FTTH/B Market Panorama

European Ranking
September 2020
Penetration rates of European countries - September 2020
(FTTH/B Subscriptions / Households)

Source: IDATE for FTTH Council EUROPE

Including:
- Countries with more than 1% FTTH/B household penetration
- Economies with at least 125,000 Households
European Ranking – EU27+UK
The Road to Full Fibre – Who has the most work left to do?

Source: IDATE for FTTH Council EUROPE
FTTH/B Market Panorama

Key conclusions
### POSITIVE IMPACTS

1. Data demand and bandwidth **has intensified** (due to COVID19 and WFH situations), more operators focused on full-fibre networks to sustain ongoing traffic increase.

2. National authorities are fully involved in broadband acceleration via FTTH, with new national programmes being defined to reach Digital Agenda goals for 2025/2030.

3. Progress in micro-trenching and cable design is less intrusive/disruptive in cities and neighborhoods while **new low profile cable designs offer better aesthetics** (indoors and outdoors).

4. Ongoing trend towards **mutualized networks and network sharing agreements** in Europe will accelerate FTTH deployments.

5. Continued investment from private financing groups for new and existing network operators.

### NEGATIVE IMPACTS

1. **Gigabit Capable FWA (60Ghz)** is becoming more common in isolated areas, thus will delay FTTH deployments in some regions.

2. **5G technology** used in high spectrum bands (26 GHz) can directly challenge FTTH in the fixed residential market.

3. FTTH investments delayed in several areas due to **direct alternative technologies** such as Cable (Docsis 3.1/4.0) and G.Fast.

4. Misleading fibre advertising is still impacting FTTH subscriber adoption. New demand for WFH applications in the home will help differentiate FTTH further from FTTC as 2021 progresses.

5. Fibre Rollout Plans being delayed across Europe – some by up to 2 years. Removal of red tape and better central coordination can tackle these delays.

6. Availability of skilled labor to build out new fibre networks is beginning to be felt in late 2020. The growth expected in 2021 and 2022 will make this more pronounced.
FTTH/B reaching a new level

- FTTH/B networks are now covering more than half of total households in the EU39 region (53%): a key milestone on the path towards full fibre connectivity across all of Europe.
- EU39 reaching 82 million FTTH subscriptions, with EU27+UK accounting for 56%.
- 183 million homes passed by full-fibre infrastructure in the total region, 98 million in EU27+UK.

Key lessons to be learned

- In many historical copper-based countries (UK, Germany, Italy), the whole telecom ecosystem has intensified its efforts towards full-fibre connectivity, and the pandemic tends to accelerate both deployments and adoption. There is still some distance to go with these 3 countries have ~60% of the remaining Homes to be passed in the EU27+UK!
- National authorities are even more involved in the digital transformation, in the wake of COVID-19 crisis, implying revised national programmes, subsidies and a relevant policy framework to promote fibre expansion
- Underserved regions are also affected by the COVID pandemic and their need for reliable networks is now a clear target for the ecosystem

Top 3 - Main movers in terms of Homes Passed in absolute numbers
Data comparison between Sept. 2019 and Sept. 2020

- **France**: + 4.6m
- **Italy**: + 2.8m
- **Germany**: + 2.7m
Thank you for your Participation!

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