

FTTH CONFERENCE

2019

12-14 MARCH



Amsterdam
The Netherlands



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policy and finance*

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FTTH Council Europe – Panorama & Forecast Market at September 2018 & Forecast by 2020 & 2025

FTTH Council Europe Conference – March 14th 2019 - Amsterdam



Fibre to the Home
Council **Europe**



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Agenda

1. Study Background
2. General overview and main trends
3. Leading countries
4. European Ranking
5. Conclusion – Key outputs – Global Ranking
6. FTTH Forecast for Europe

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

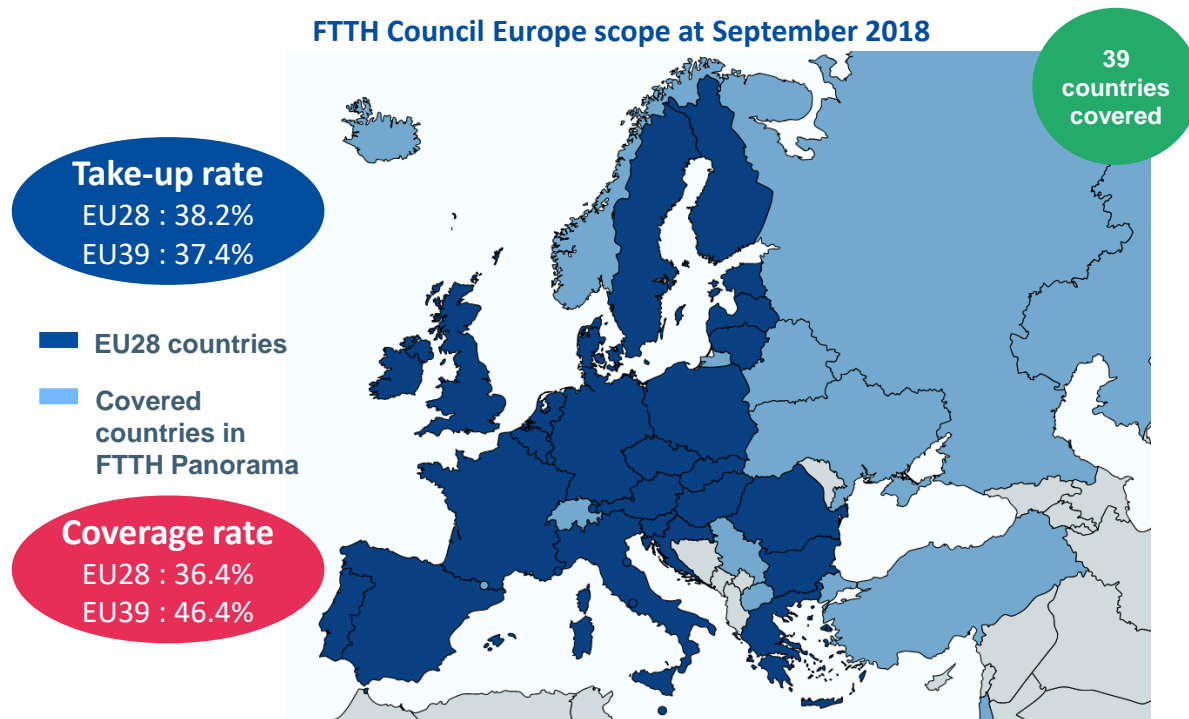
02 | General overview and main trends

FTTH/B figures as at September 2018

As at September 2018 in EU39*:

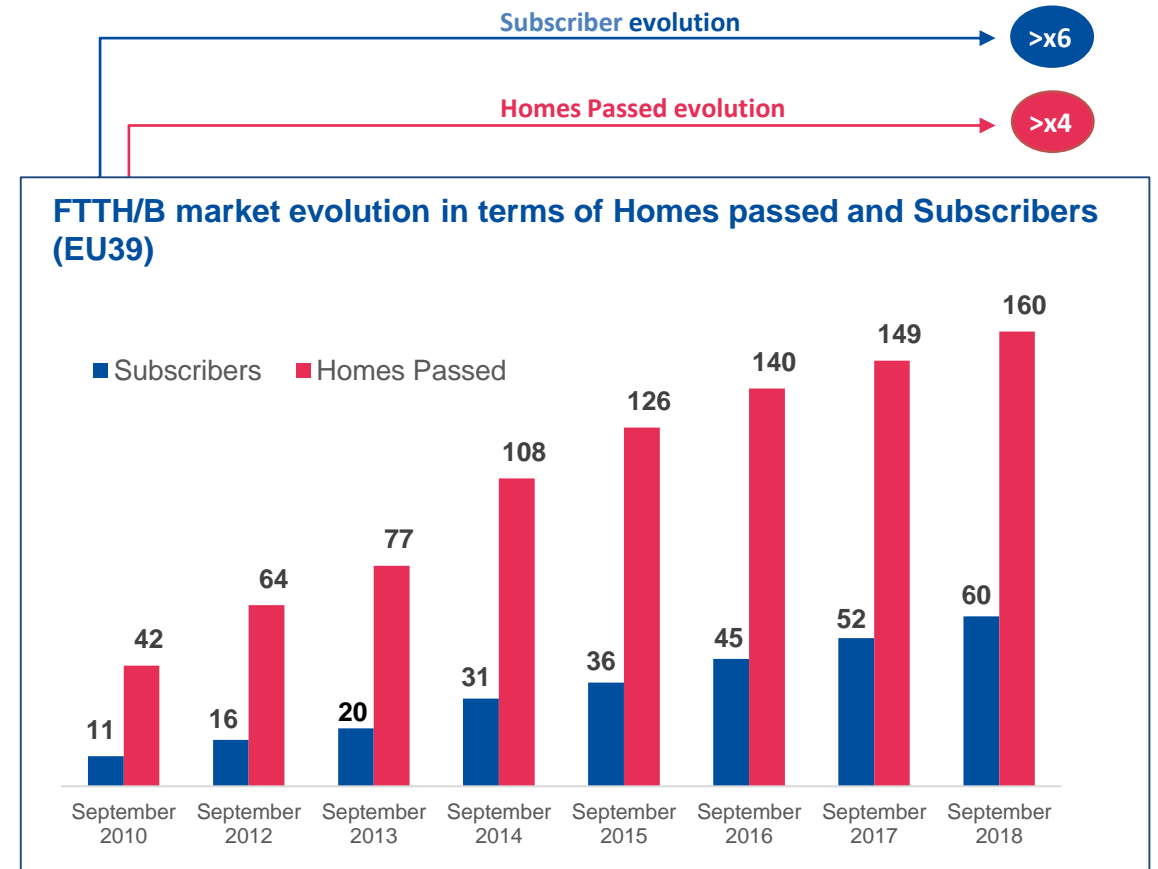
- **59.6 million FTTH/B subscribers**
- **Almost 160 million FTTH/B Homes Passed**

FTTH Council Europe scope at September 2018



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

(2) Cyprus was replaced by Macedonia at end-2012 because the FTTH/B market is much more developed in this country.



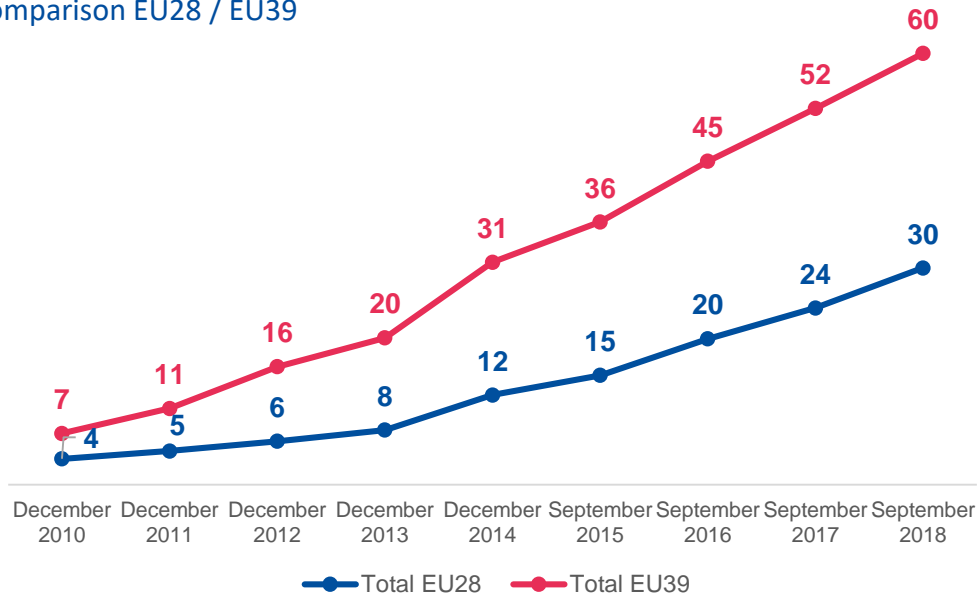
Source: IDATE for FTTH Council EUROPE

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

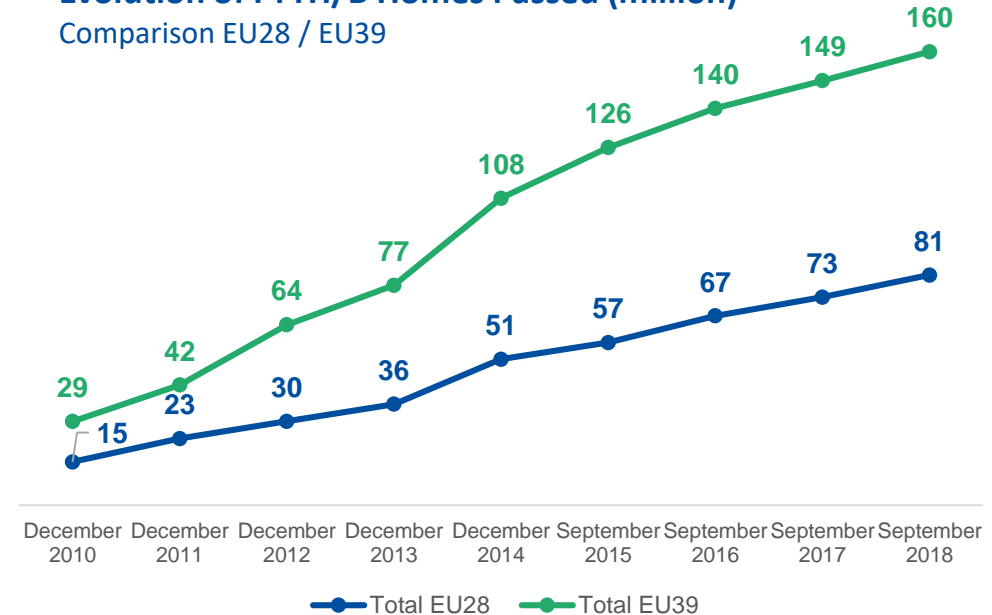
Evolution of FTTH/B Subscribers (million)

Comparison EU28 / EU39



Evolution of FTTH/B Homes Passed (million)

Comparison EU28 / EU39

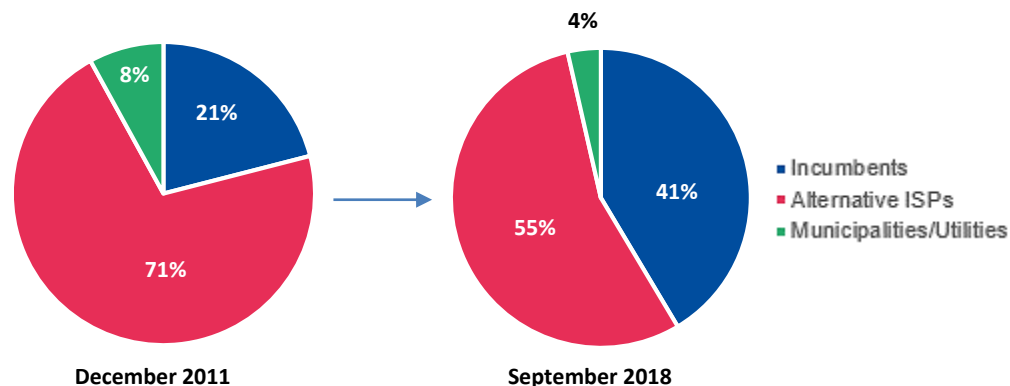


Incumbents are taking a growing role in FTTH/B Initiatives

- 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



Source: IDATE for FTTH Council EUROPE

Top European countries – Breakdown in terms of Sockets deployed

1	 Russia	Total Sockets deployed: 71,435,000 ✓ Incumbents: 33,200,000 ✓ Alternative ISPs: 38,235,000
2	 Spain	Total Sockets deployed: 43,234,160 ✓ Incumbents: 20,800,000 ✓ Alternative ISPs: 22,375,000 ✓ Municip./Utilities: 59,160
3	 France	Total Sockets deployed: 39,201,000 ✓ Incumbents: 10,906,000 ✓ Alternative ISPs: 26,565,000 ✓ Municip./Utilities: 1,730,000
4	 Ukraine	Total Sockets deployed: 10,765,000 ✓ Alternative ISPs: 10,765,000
5	 Romania	Total Sockets deployed: 9,124,750 ✓ Incumbents: 2,107,000 ✓ Alternative ISPs: 7,017,750

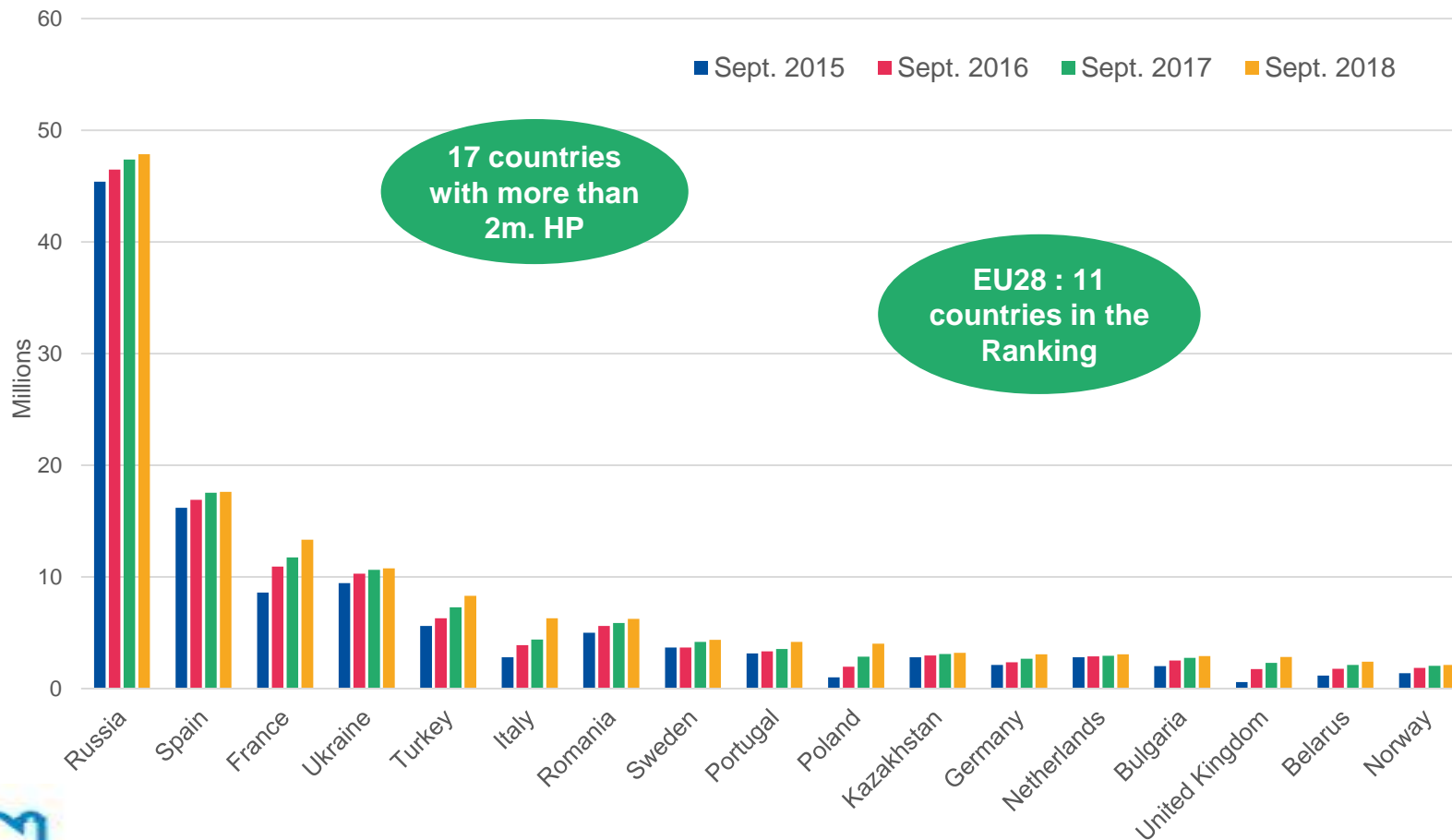
03 | Leading countries



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



Top 5 annual growth rates – Homes passed (in %)

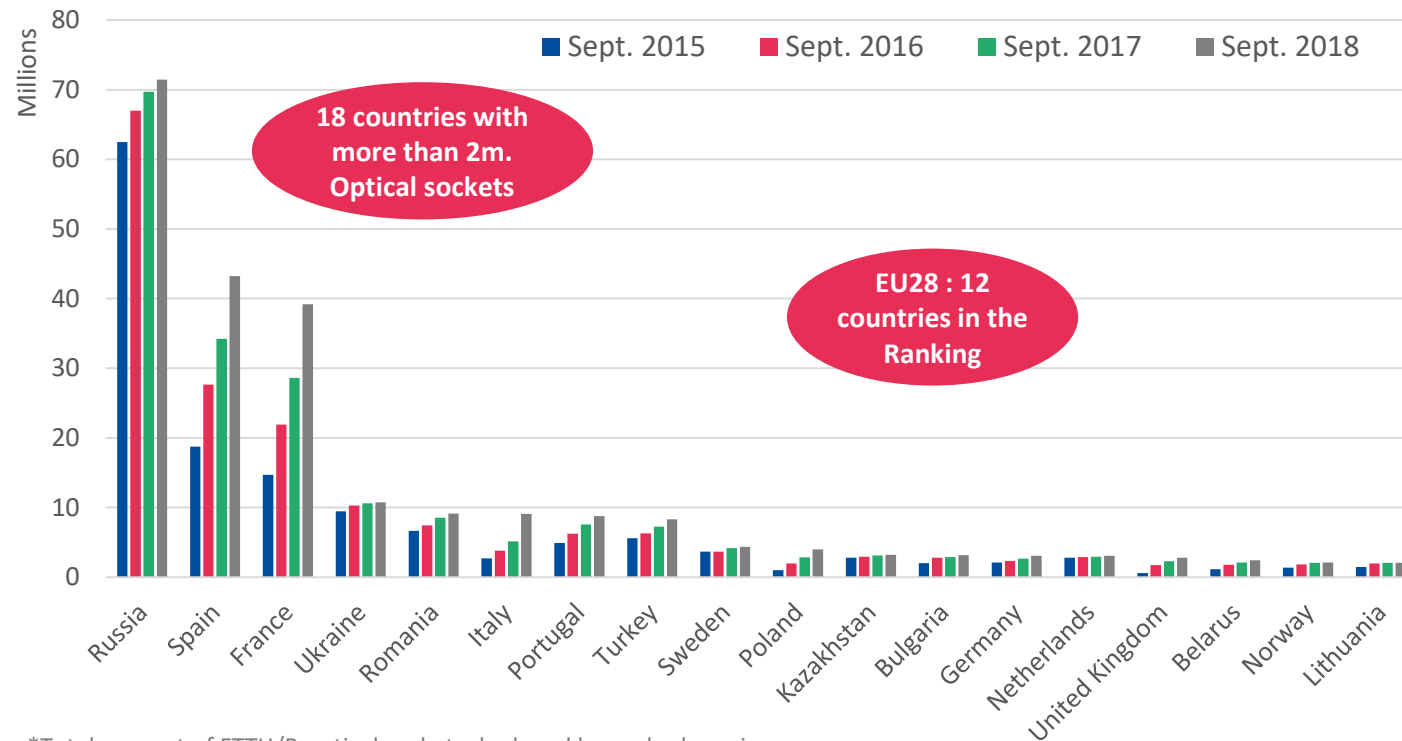
Data from Sept. 2017 to Sept. 2018



General Ranking: FTTH/B Sockets deployed*

European ranking in terms of FTTH/B Sockets deployed (in million homes)

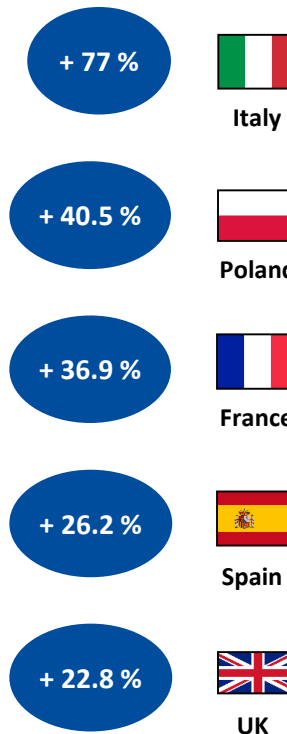
Data comparison between Sept. 2015 and Sept. 2018



*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

Top 5 annual growth rates – Sockets deployed (%)

Data from Sept. 2017 to Sept. 2018



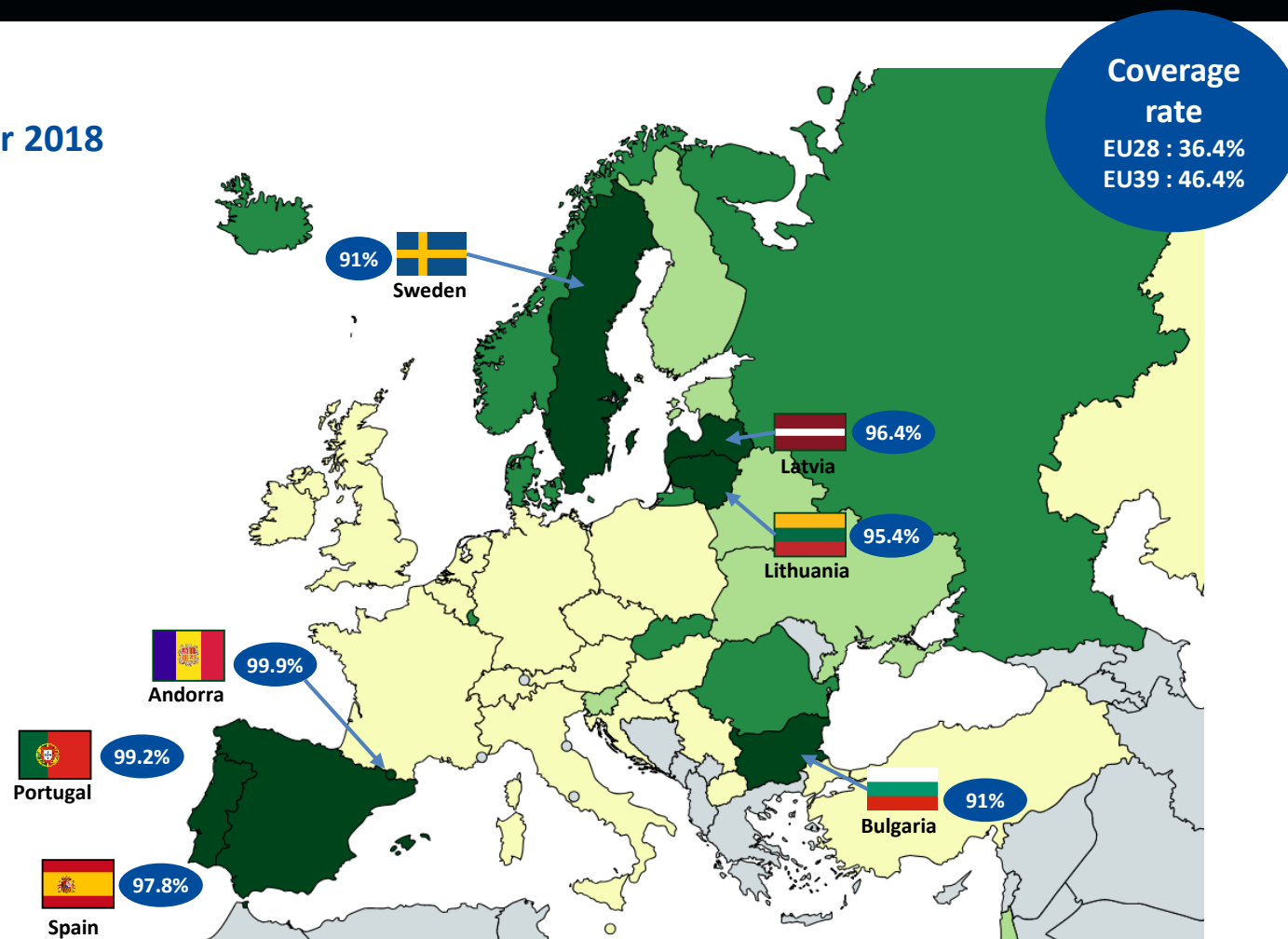
Source: IDATE for FTTH Council EUROPE

General Ranking: FTTH/B Coverage

FTTH/B coverage* as at September 2018

(* Homes passed / Households)

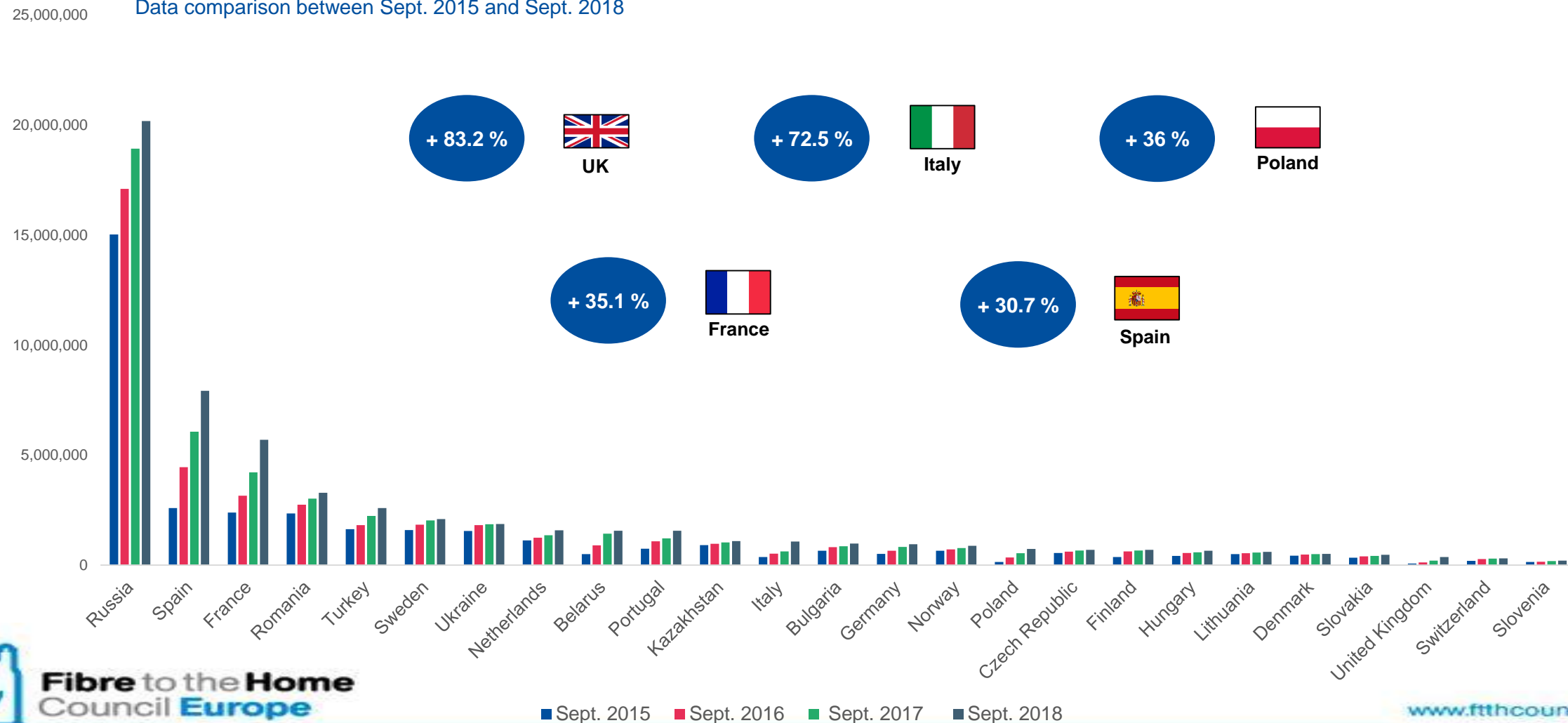
- FTTH/B coverage > 90%
- FTTH/B coverage 70 – 90 %
- FTTH/B coverage 50 – 70 %
- FTTH/B coverage < 50 %



General Ranking: FTTH/B Subscribers

European ranking in terms of FTTH/B Subscriptions (million)

Data comparison between Sept. 2015 and Sept. 2018

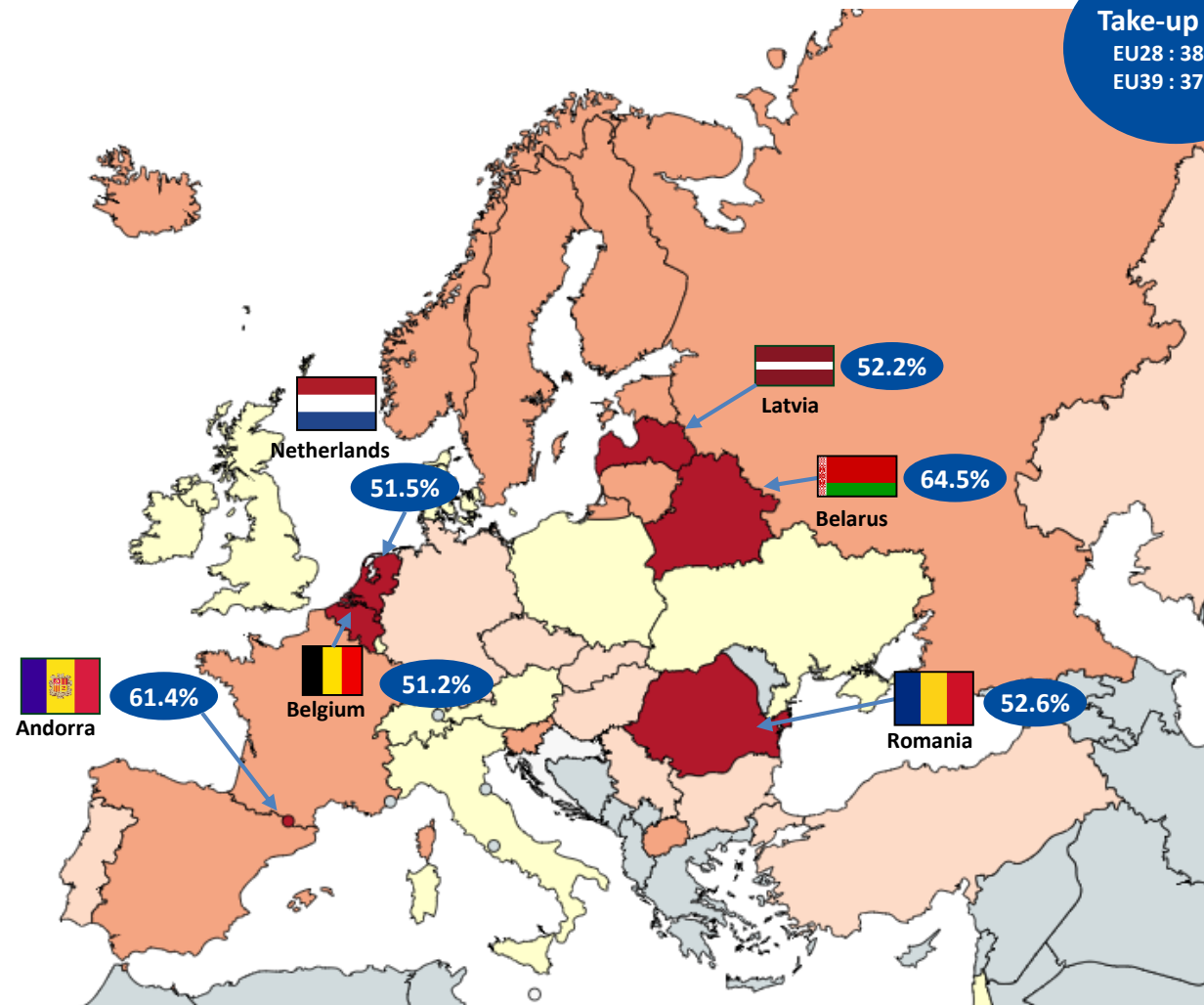


General Ranking: FTTH/B Take-up

FTTH/B take-up* as at
September 2018

(*Subscriptions / Homes Passed)

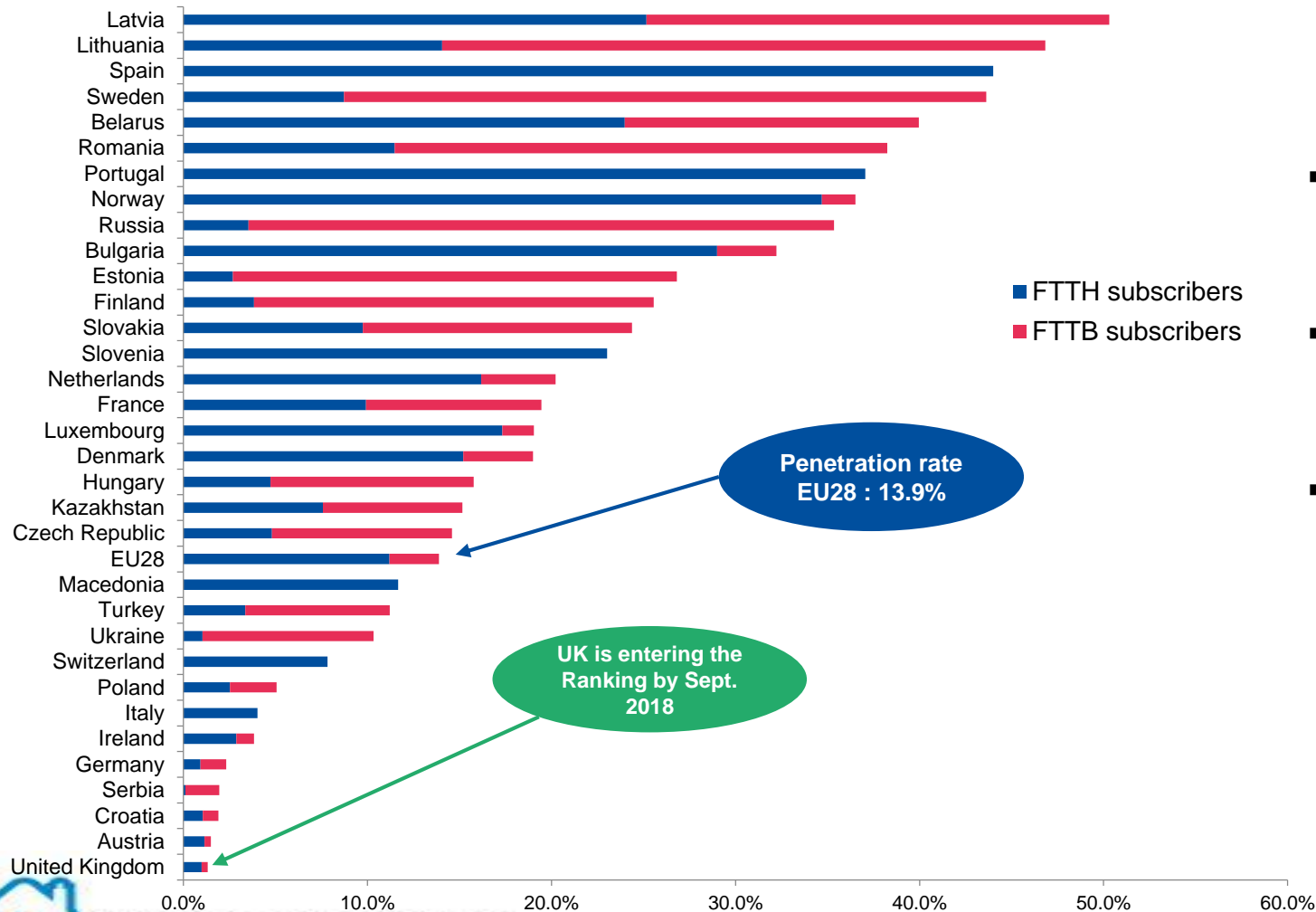
- FTTH/B take-up > 50%
- FTTH/B take-up 40 – 50 %
- FTTH/B take-up 30 – 40 %
- FTTH/B take-up < 30 %



04 | European Ranking



European Ranking as at September 2018



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

- Includes 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)

05 | Key Conclusions



Key outputs

Public involvement

- **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?

Regional Recap

- **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%

Subscribers

+ 72.5 %



Italy

Homes Passed

+ 43.1 %

Subscribers

+ 36 %



Poland

Homes Passed

+ 40.5 %

Subscribers

+ 83.2 %



UK

Homes Passed

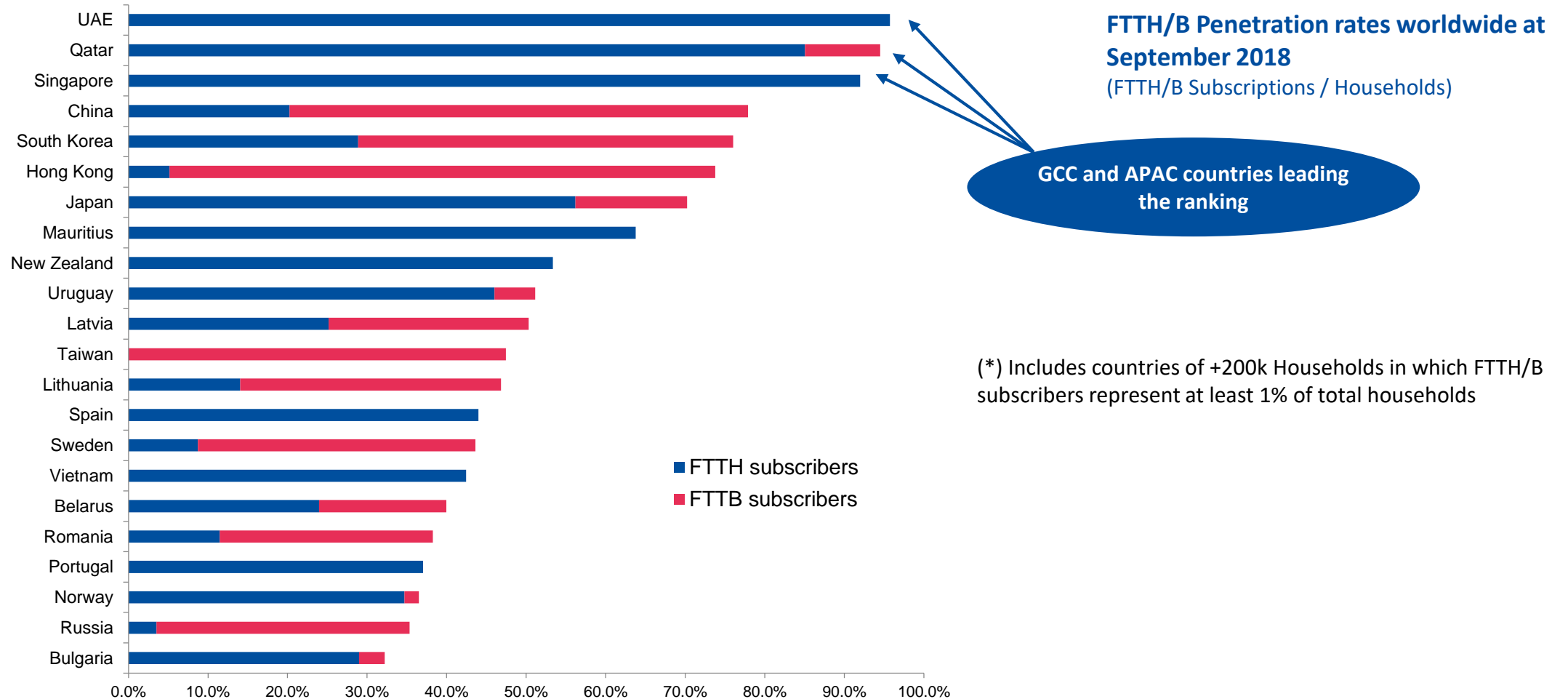
+ 22.8 %



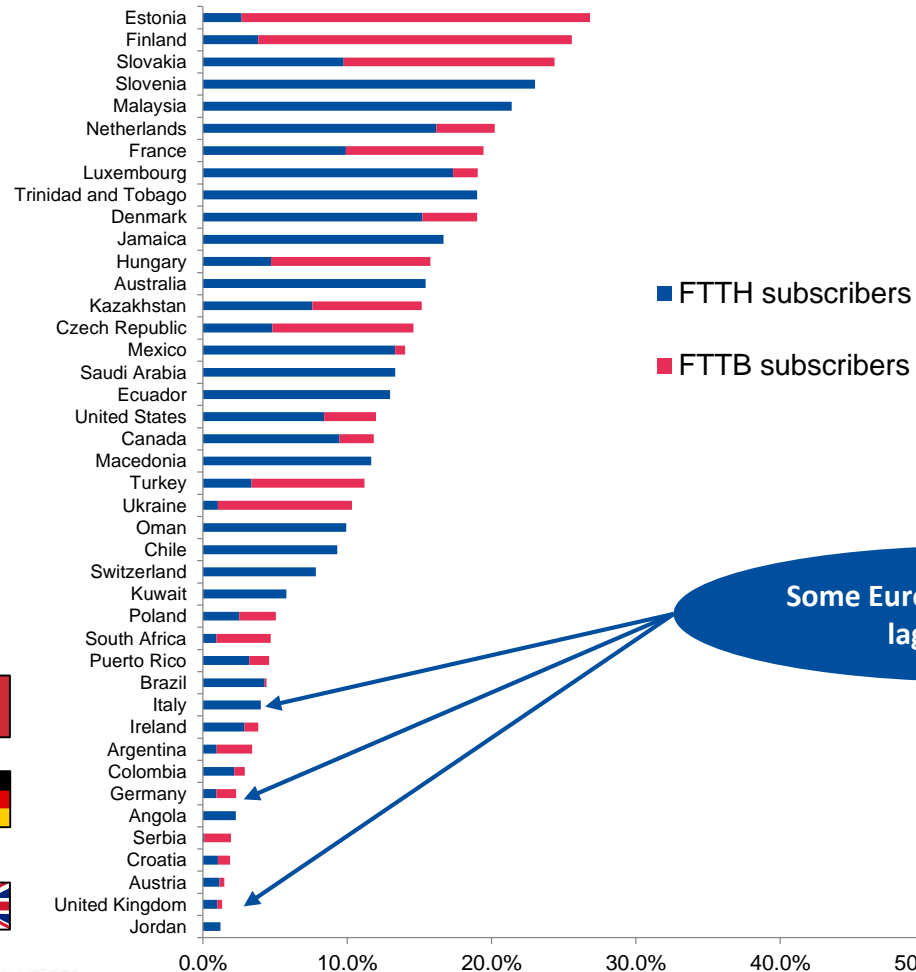
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Global Ranking^(*) at Sept. 2018 – Mature markets



Global Ranking (*) at Sept. 2018 – Less than 30% penetration



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

Some European countries still
lagging behind



06 | FTTH Forecast for Europe

Forecast study – Factors taken into account

Supply criteria

- **Strategic plans** from telecom players towards high-speed broadband enhancement
- Willingness to provide **public funds**
- **Municipality/utility players** can accelerate **fibre development in remote areas**, where private operators don't have any incentives to deploy
- Impact of **cable operators switching to FTTH/B** to gain market advantages
- Impact of **mobile broadband** enhancement
- **Green-field housing** and systematic deployment of FTTH in any new build housing

Demand criteria

- **Broadband services take-up** since average speeds continue to rise for households
- **Data consumption keeps growing** due to an intensive use of **video content, high-definition streaming** which demand **high bandwidth capacity**
- People in **rural areas** still not covered by high-speed connections **would like to be connected to NGN**

Others

- Impact of **infrastructure costs**
- Impact of **copper-based DSL improvements** with new emerging variants, such as G.Fast.
- Impact of cable-based networks with DOCSIS 3.1
- **Regulatory changes at European and national level** to create a common commitment to FTTH
- Impact of **macroeconomic environment and economical trends**

Indicators affecting the FTTH adoption

Positive criteria

1

Regulatory framework and public incentives to promote FTTH deployments (ex. Gigabit Society targets set for 2025)

2

Governments have been revising their Digital Infrastructure strategy to focus on Fibre and 5G leading to higher availability of public funds dedicated to enhancing fibre-based networks

3

Progressive switch-off for copper-based infrastructure and move towards FTTH networks

4

Data demands and video content continue to growth leading to higher bandwidth and lower latency needs (Resilience, symmetry of Bandwidth)

5

Both incumbents and alternative ISPs shifting their core business towards FTTH

6

Municipalities/Utilities pushing to expand fibre networks in remote areas where not always economically viable for private players

7

Fibre densification driven by 5G deployment & cost savings from fibre-5G convergence



Indicators affecting the FTTH adoption

Negative impacts

1

Copper-based DSL & Cable improvements with new emerging variants could delay FTTH enhancement

2

Potential risk of mobile 5G broadband technology delaying FTTH in economically non-viable areas

3

Deployment costs are still very high for FTTH technologies (however costs are following a downward trend YoY)

4

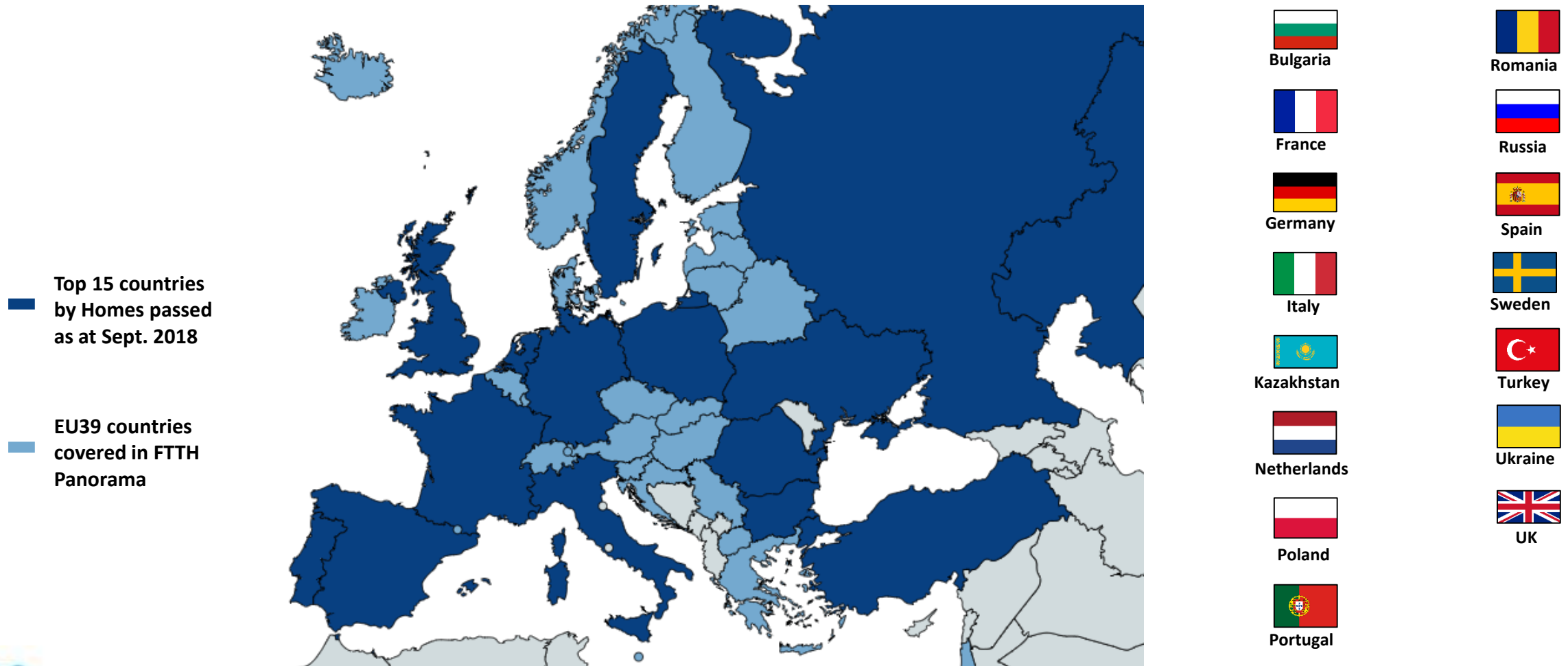
Non-feasible business model for isolated areas

5

Some initiatives are facing administrative barriers that are delaying fibre expansion in areas not yet covered (right of ways)



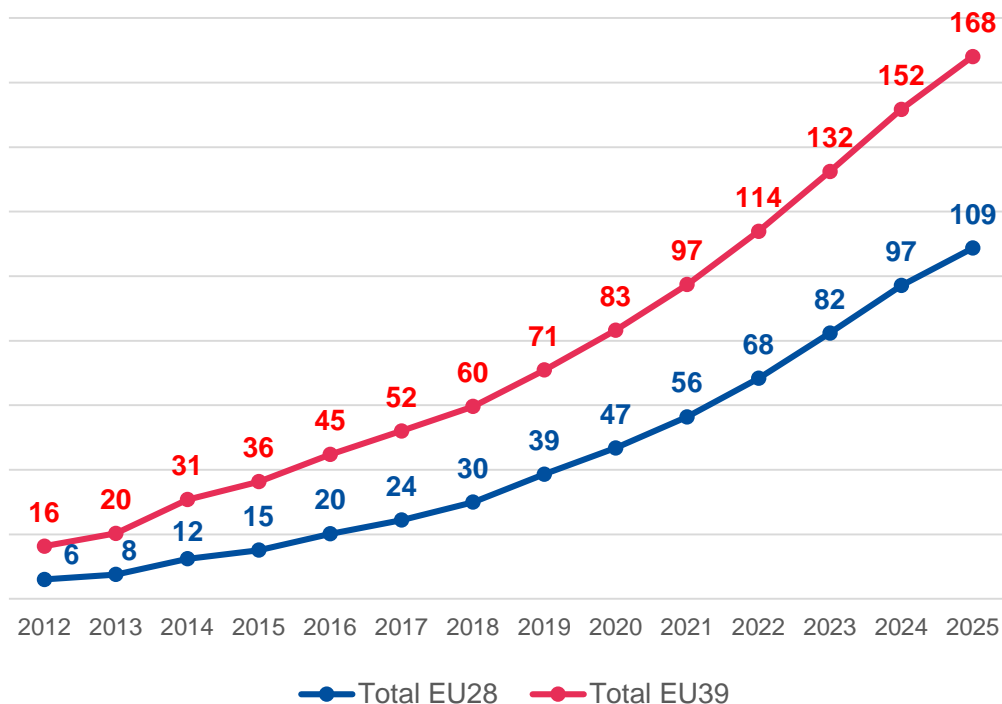
Forecast study – Individual analysis of 15 European countries



European FTTH/B Forecasts (2012-2025)

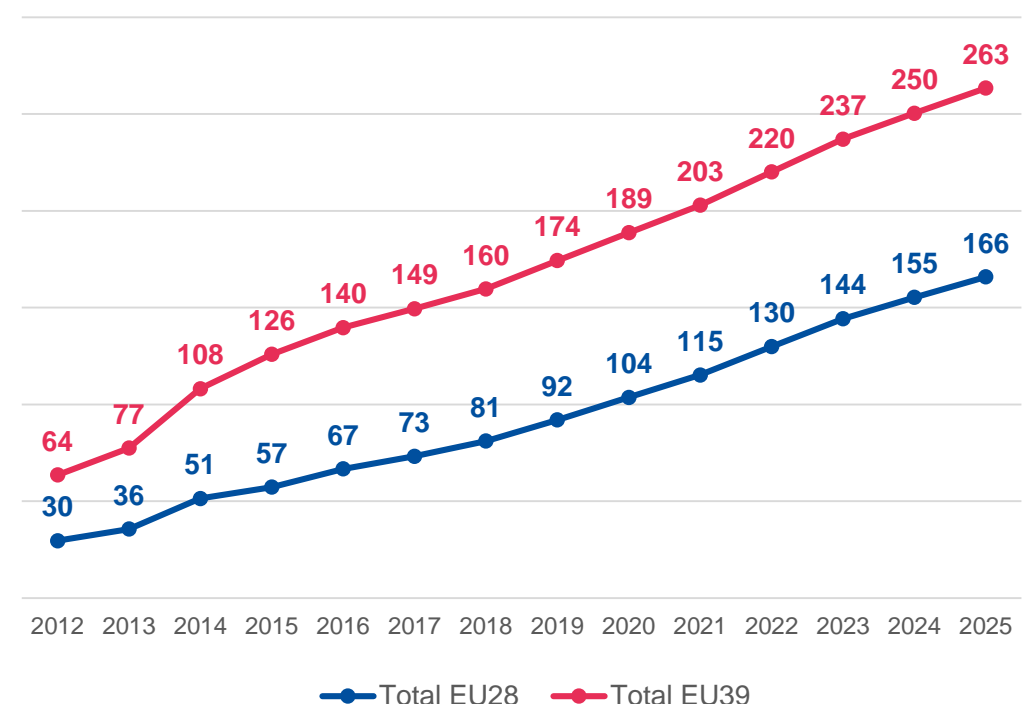
FTTH/B Subscribers Forecasts (million)

Comparison EU28 / EU39



Evolution of FTTH/B Homes Passed (million)

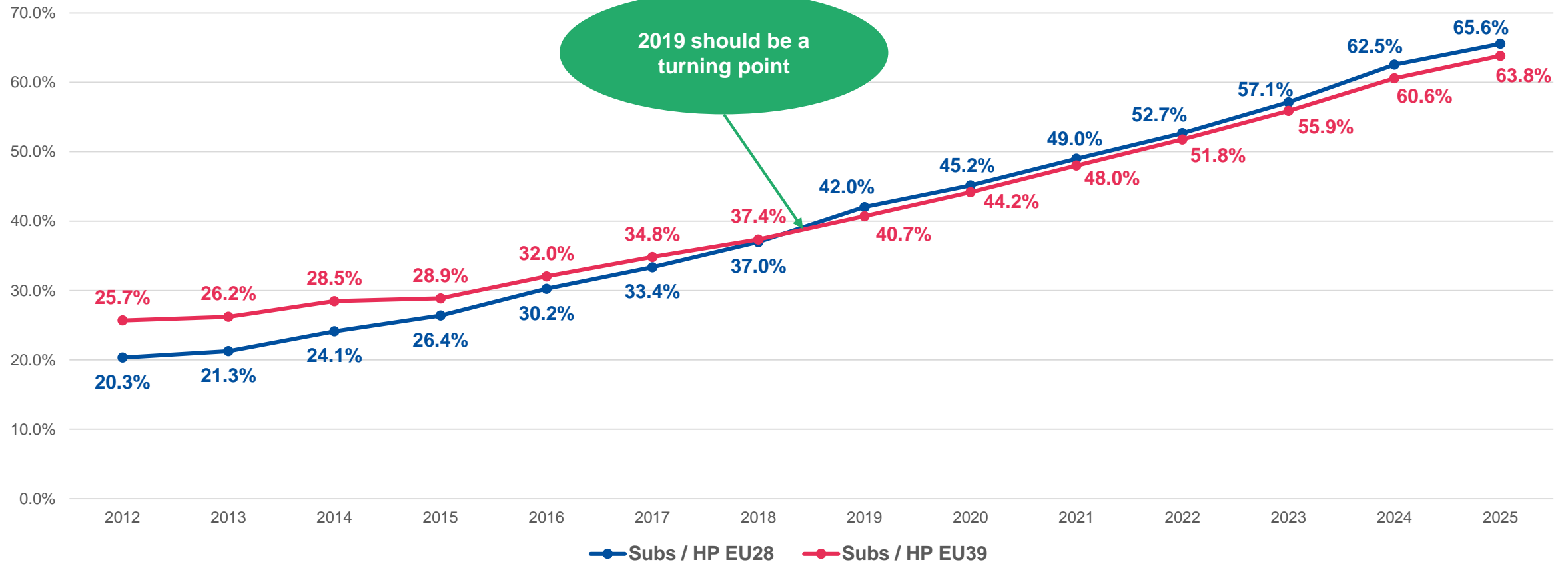
Comparison EU28 / EU39



European FTTH/B Forecasts (2012-2025)

FTTH/B Take-up Rates Forecasts (Subs over Homes Passed, in %)

Comparison EU28 / EU39



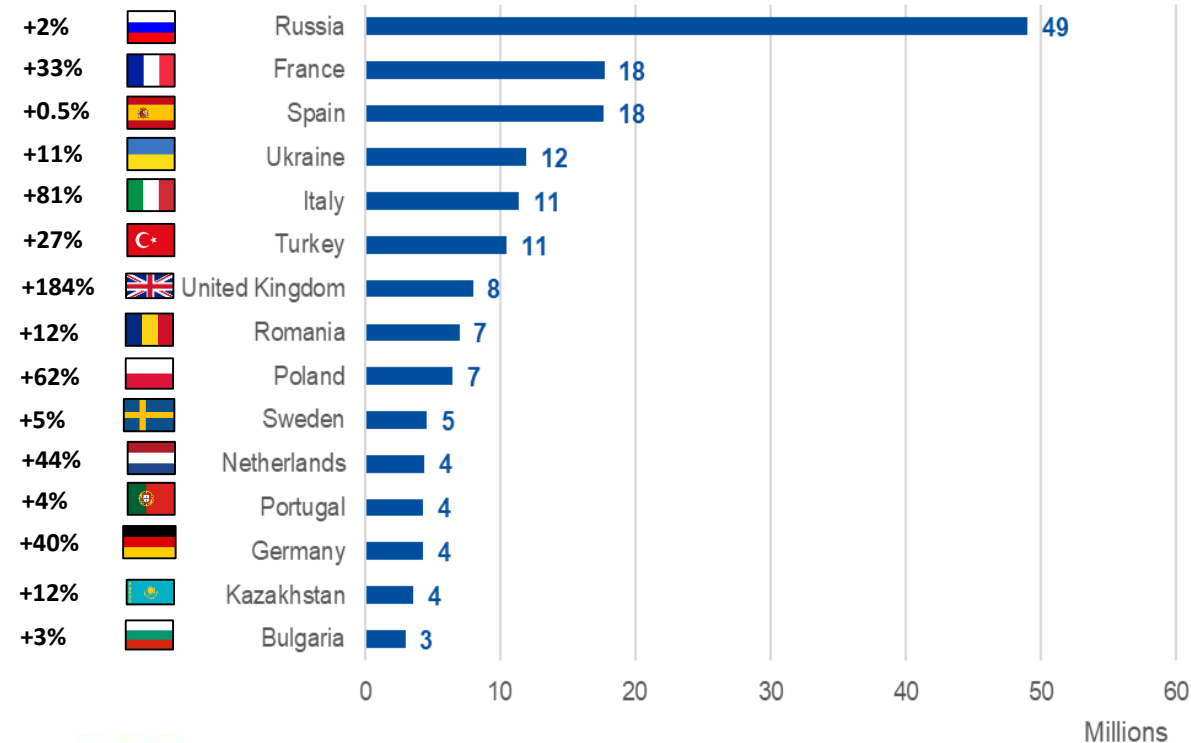
Top 15 Countries by FTTH/B Homes Passed in 2020 & 2025

European ranking in terms of FTTH/B Homes passed (in million homes)

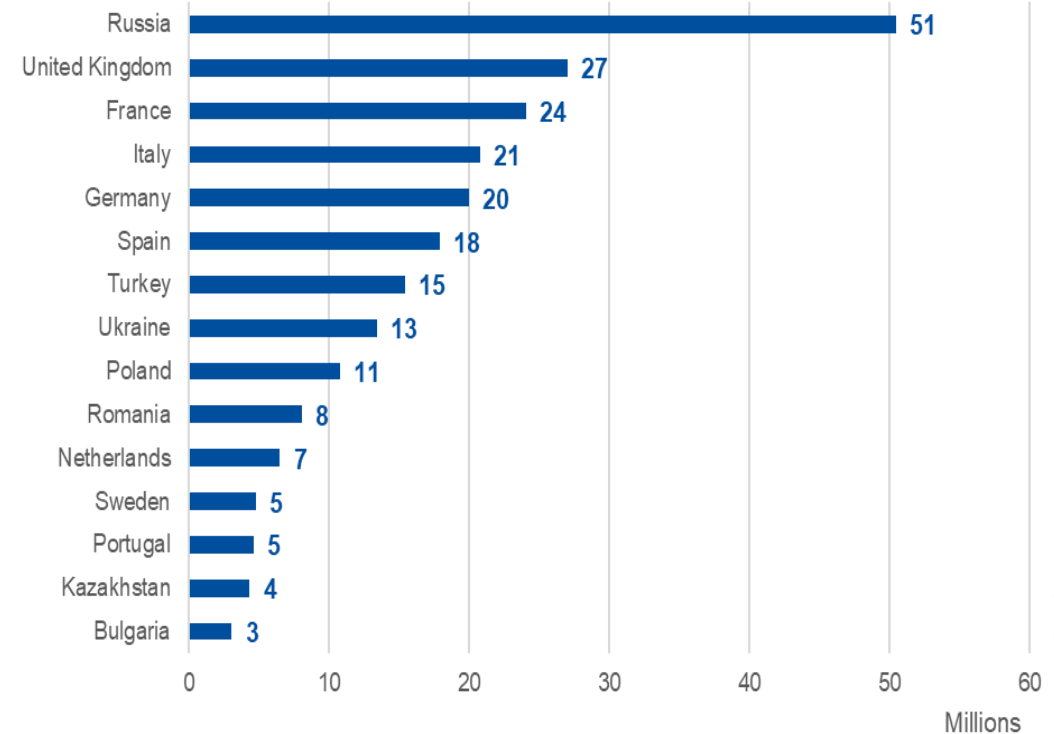
2025 Forecasts
EU28 : ~166m FTTH H.P.
EU39 : ~263m FTTH H.P.

% Evolution 2018
/ 2020

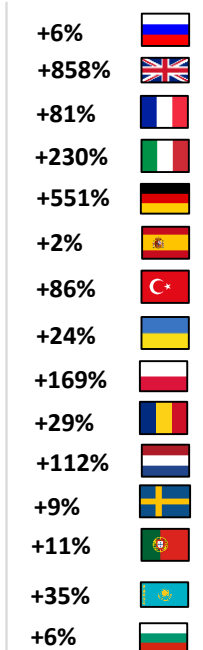
2020 Forecasts



2025 Forecasts

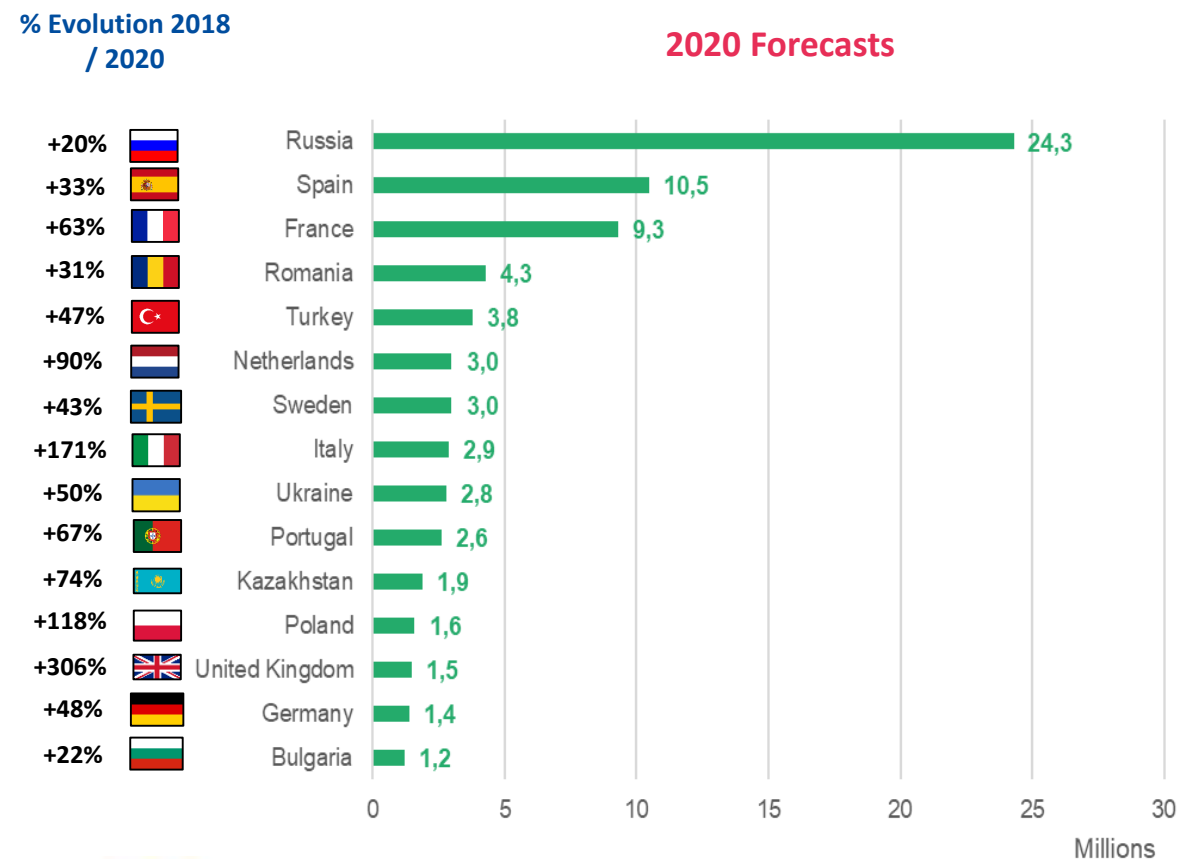


% Evolution 2018
/ 2025

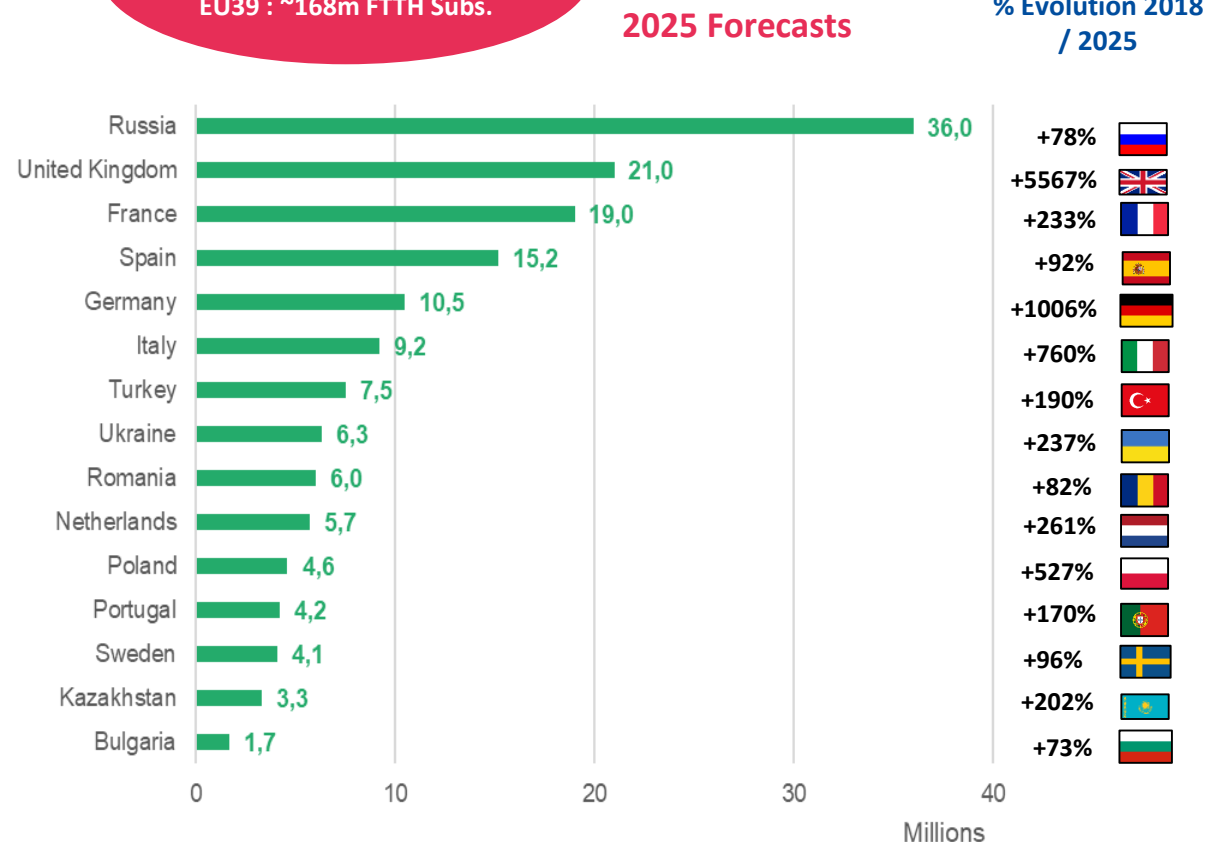


Top 15 Countries by FTTH/B Subscribers in 2020 & 2025

European ranking in terms of FTTH/B Subscriptions (million)



2025 Forecasts
EU28 : ~109m FTTH Subs.
EU39 : ~168m FTTH Subs.

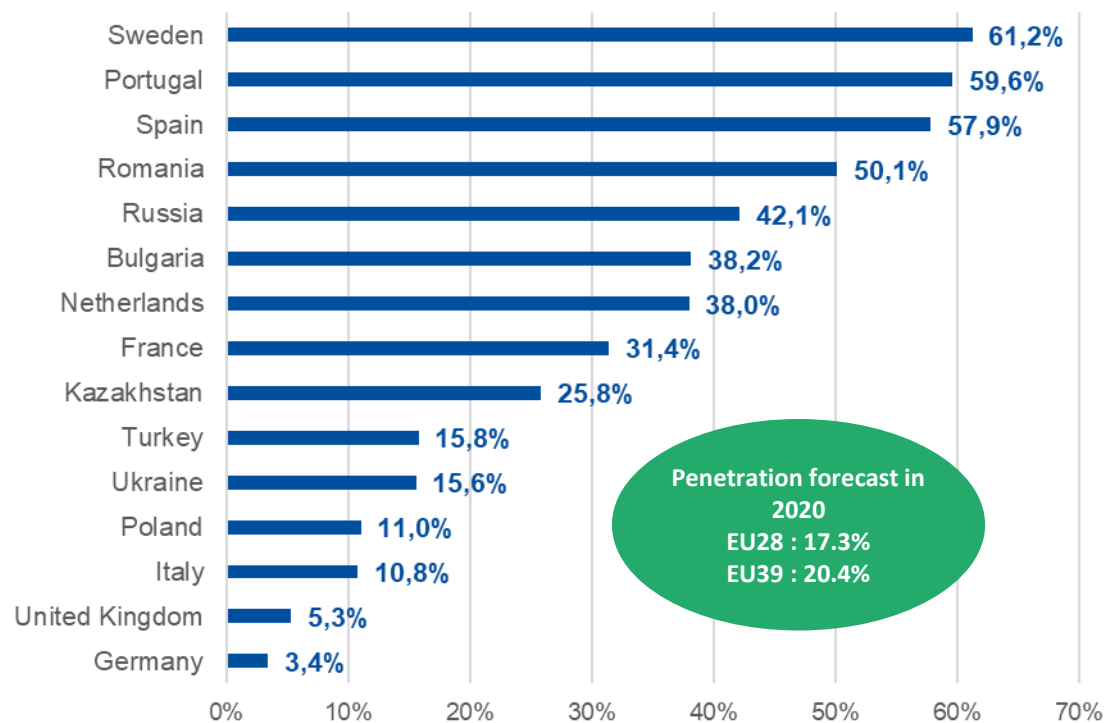


Top 15 Countries by Household penetration

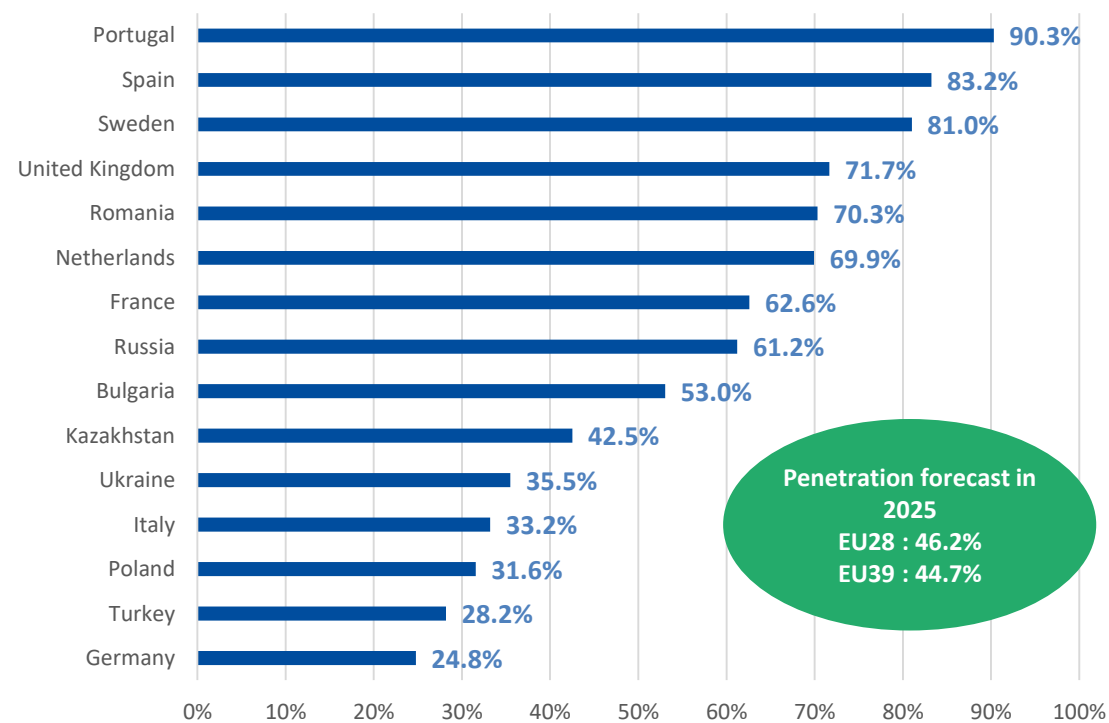
European ranking in terms of Household penetration

Subscriptions / Households (in %)

2020 Forecasts



2025 Forecasts



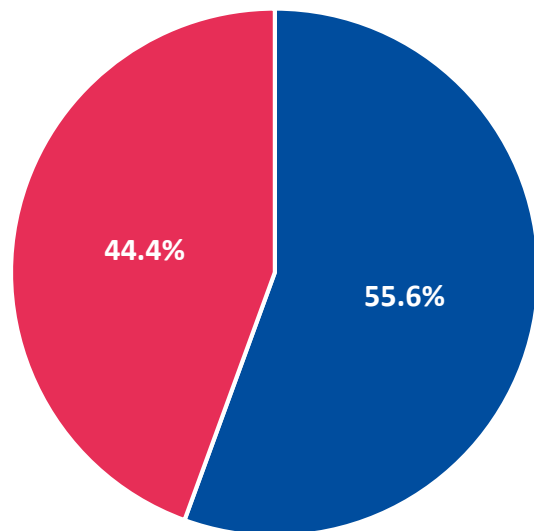
Source: IDATE for FTTH Council EUROPE

FTTH Architecture & Technology trends

FTTH / FTTB architecture

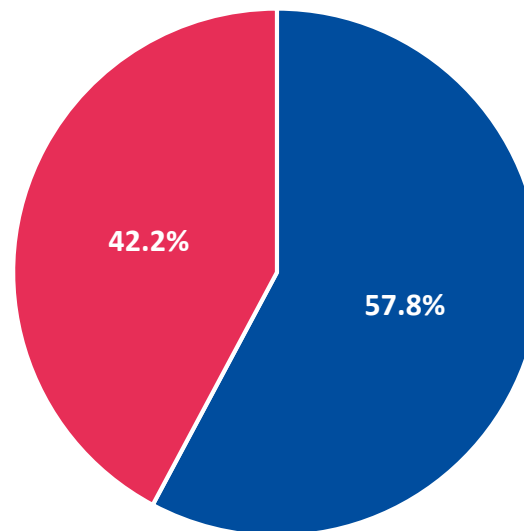
Positive FTTH evolution : Fibre closer to end-users by 2025

FTTH/B at Sept. 2018



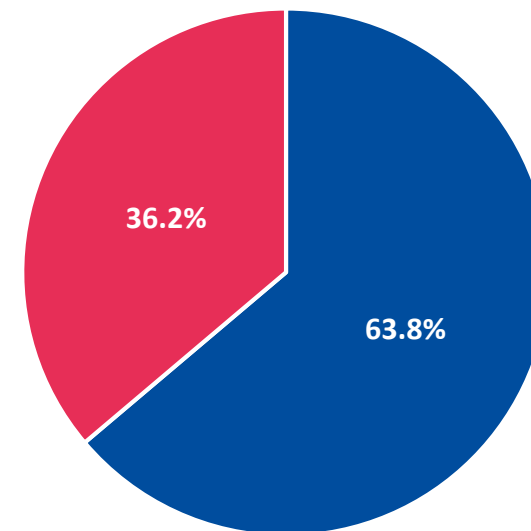
■ FTTH ■ FTTB

2020 Forecasts



■ FTTH ■ FTTB

2025 Forecasts



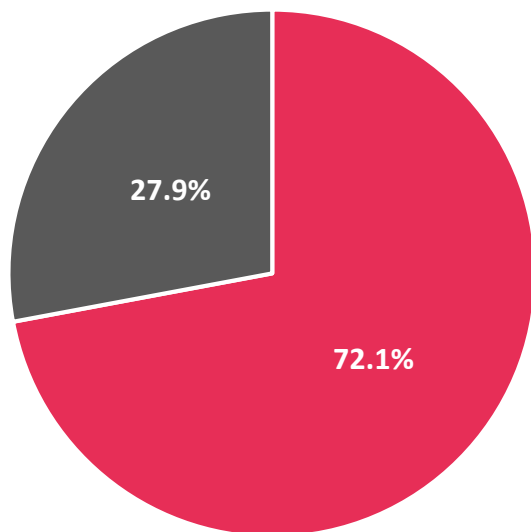
■ FTTH ■ FTTB

FTTH Architecture & Technology trends

MDU / SDU ratio

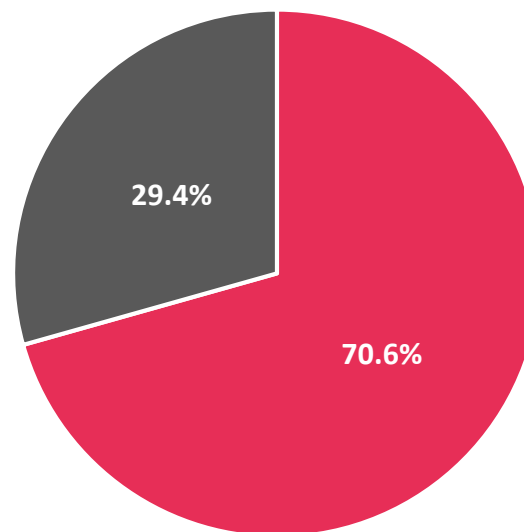
Evolution towards the delivery of individualized fibre services by 2025

MDU / SDU ratio at
Sept. 2018



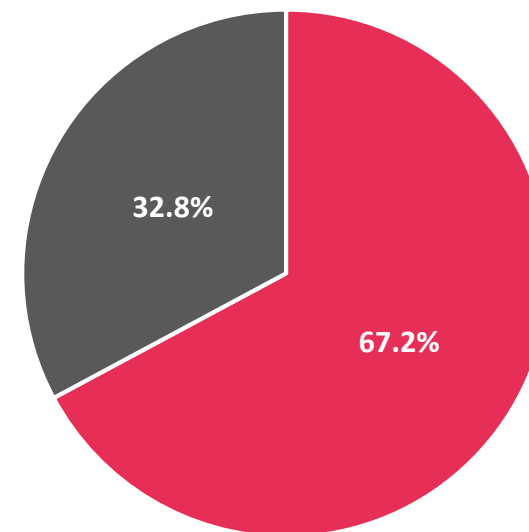
■ MDU ■ SDU

2020 Forecasts



■ MDU ■ SDU

2025 Forecasts



■ MDU ■ SDU

Source: IDATE for FTTH Council EUROPE

Key conclusions

1

GROWTH

- Public incentives towards fibre-based technologies will accelerate FTTH growth throughout Europe
- Some major private players will be migrating from copper-based and cable-based architectures to full-fibre solutions in the coming years (e.g. BT in UK / Deutsche Telekom in Germany). Certainly, these substantial investments will be a key enabler of growth.

2

BUSINESS
EVOLUTION

- Delayed responses by incumbents have led to increased investment in alternative FTTH operators, triggering accelerated network builds by the incumbent (UK, Italy)
- More agreements to deploy FTTH services between private players, utilities companies and local authorities are evolving towards a convergent portfolio where different services can be provided using the same infrastructure (telecom services, smart cities solutions and utilities)

3

TECHNO-
SYMBIOSIS

- Based on recent announcements, 5G will be a key factor for the promotion of fibre deployments and therefore, it will boost investments from public and private players.
- Evolution from previous years have showed that cable-based and copper-based ISPs have started to diversify its core technologies towards fibre. Certainly, many of these players have implemented full fibre solutions and it can be appreciated that FTTH services are now part of its service portfolio.



Thank you for your attention!

www.ftthcouncil.eu



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