

European FTTH Forecast, 2012-2017

Graham Finnie, Chief Analyst Heavy Reading

Presentation to the FTTH Council Europe Conference,
20 February, 2012

www.heavyreading.com

finnie@heavyreading.com

Introduction

- **Based on individual analyses of 21 countries, and brief reviews of a further 22 countries**
- **Covers a total of just over 310 million households, 197 million in the EU and 105 million outside the EU**
- **Overall forecast up on last year**
 - Strong progress, and updated information on current penetration, in Bulgaria, Finland, Russia and Sweden, among others
 - Some major incumbent deployments, e.g. In Portugal and Spain, on track
 - Steady progress in others, including Denmark and the Netherlands
- **Gap between best and worst performers is widening**
 - Very slow progress in major Western European countries including Germany, Italy and the UK, as well as smaller territories such as Belgium, Austria and Switzerland, mean that these countries are 5-10 years behind the best
 - Though there are exceptions, non-EU doing better than EU, in general: forecast for EU area is actually down on the previous year.

LEADING INDICATOR	DEVELOPMENTS OVER THE PAST 12 MONTHS	POTENTIAL DEVELOPMENTS OVER THE NEXT 12 MONTHS
Demand-Oriented Indicators		
Marketing and take-up of third generation broadband services (at 20Mbit/s +)	Positive: Average speed per household continues to rise rapidly, paving the way for FTTH. Speedtest showed average downstream speed at around 17Mbit/s, up around 25% on the year	Neutral: We expect the rise in average speed will continue in 2013, though there was some evidence to suggest that the speed of the rise has been slowing
Consumer electronics—PCs, digital cameras, HDTV, etc	Neutral: 2012 was a slow year for PCs and TVs, but this was offset by the tablet boom and by rapid growth in devices per home, as well as generally high growth in device ownership in some eastern countries	Neutral: number of devices per home will continue to multiply, but no great impact from 3DTV or other higher bandwidth devices is likely in the near term
Services that drive higher-speed broadband	Neutral: downstream services based on VDSL can support all current services, but the rise in uploading of photos, videos and Cloud services is driving a need for more symmetrical bandwidth	Neutral: although there is no killer app for FTTH in sight, the rise in upstream demand will likely continue.
Supply-Oriented Indicators		
Stated attitudes and plans of incumbent telcos	Neutral: Generally very slow in many large Western countries, but things are improving, with the Netherlands Spain, Portugal and Turkey leading a new incumbent charge,	Neutral: The picture will continue to be very mixed, with other incumbents gradually joining the FTTH move but some sticking with VDSL for now
Competitive and entrepreneurial telco plans and their impact	Positive: New entrants have had a big impact in Russia, Turkey, Bulgaria, Romania and many of the most dynamic markets, and growth in these countries will continue	Positive: we expect continuing good growth through the next few years in these countries
Muni and utility plans and their impact	Positive: municipal and utility deployment in Denmark, Netherlands (now KPN), Norway and Sweden all saw good growth in homes connected in 2012, and Germany also began to make some progress	Neutral: while there will continue to be growth in existing projects, we do not expect major new projects in other countries.
Impact of cable MSOs	Neutral: Cable MSOs had a big impact in 2011 and 2012 with 50-100Mbit/s + products; many incumbents have responded with VDSL, but it may push some to FTTH	Neutral: the VDSL build-out continue for now, but ultimately cable MSOs are likely to force many incumbents to build a true FTTH network
Impact of mobile broadband	Neutral: Some substitution of fixed broadband, and diversion of capital, but counterbalanced by need for fiber backhaul	Neutral: No major change in current situation is foreseen
Green-field housing and construction	Negative: House-building has been hit hard by the recession and remains far below its peak.	Negative: no sign house building will pick up enough in the near term to make any real difference for FTTH
Other Indicators		
Impact of equipment cost and construction trends	Neutral: Although cost of both construction and electronics continues to fall slowly, it is probably not enough to have a major impact	Neutral: Costs will continue to fall, but without having a major impact on network builder behavior
Impact of copper-based DSL developments	Negative: DSL vectoring, bonding and other developments are leading some operators to consider DSL anew and postpone FTTH	Neutral: Vectoring has still to deliver on its promise to make a real impact here
Regulatory and political changes at European and national level	Negative: Despite positive moves at both regional and national level, regulation has failed to have a continent-wide impact yet, and the €9bn CEF facility was cut to €1bn	Positive: the barriers that have held back many plans are steadily being removed
Macro-economic environment	Neutral: despite the poor outlook, operators in some badly affected territories like Portugal and Spain have continued to build	Neutral: on balance, 2013 seems likely to see a gradual improvement, but the situation is not yet clear
FTTH development outside Europe and its political & commercial impact	Neutral: although some European countries are falling far behind other world regions, it has had only a muted effect on European politicians and the public to date	Neutral: little sign yet that this is about to really explode as a political issue

Positive Leading Indicators In 2012/2013

- Massive drive to FTTB in Eastern Europe will continue, driven by competition, strong demand and low costs
- High penetration/conversion rate encouraging some to build out further
- Average broadband line speed continues to grow fast, priming the market for FTTH
- The case for FTTH is strengthening as costs continue to fall and as the evidence for lower opex and energy costs grows
- Devices per home increasing; user-generated video and photography helping to drive higher upload demand

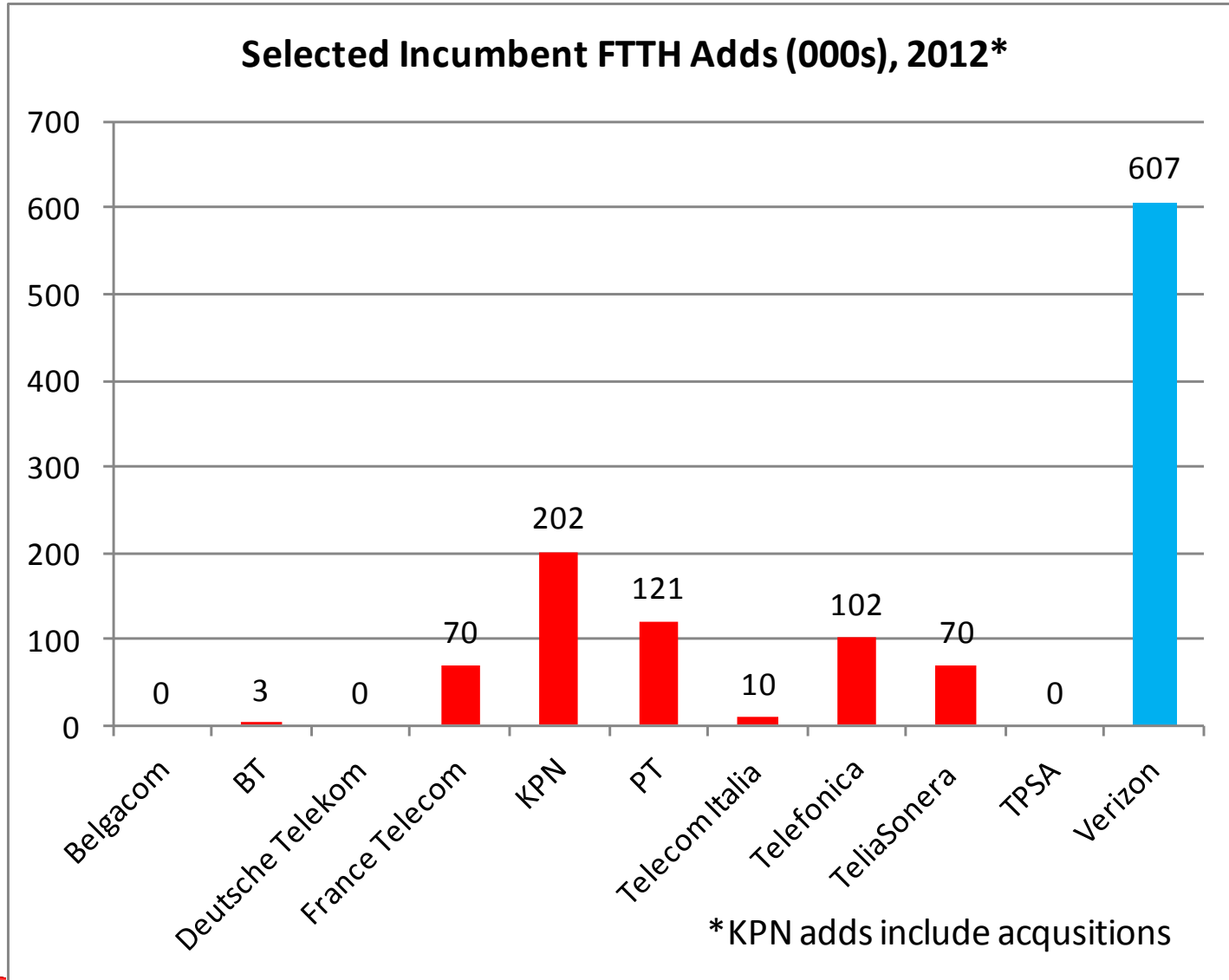
Secrets of Success: The Ten Percent Club

COUNTRY	H-HOLD FTTH PEN, END 2013 (EST)	FACTORS DRIVING SUCCESS
Bulgaria	20.2%	Strong entrepreneurial Ethernet LAN sector; little DSL; low deployment costs; private sector investment
Denmark	14.2%	Strategic decision by regional electricity utilities to invest in FTTH
Estonia	13.2%	Incumbent (owned by TeliaSonera) took strategic decision to shift to FTTH
Latvia	18.6%	Incumbent took strategic decision to shift to FTTH
Lithuania	33.2%	Incumbent took strategic decision to shift to FTTH; multiple other players also building rival fiber networks
Norway	21.6%	Alternative utility-owned telco created highly successful high ARPU triple-play model
Portugal	13.4%	Early entry by two CLECs impelled major shift to FTTH by incumbent; successful build model based on low deployment costs
Russia	16.8%	Very low cost build model based on FTTB and cheap Ethernet switches; little DSL; multiple well-funded entrepreneurial builders
Slovakia	15.1%	Strong competition between incumbent and a well-funded rival
Slovenia	14.8%	Strong competition between incumbent and rival
Sweden	27.5%	Led by municipalities and housing associations, as well as some early entrepreneurial builds; incumbent also now involved

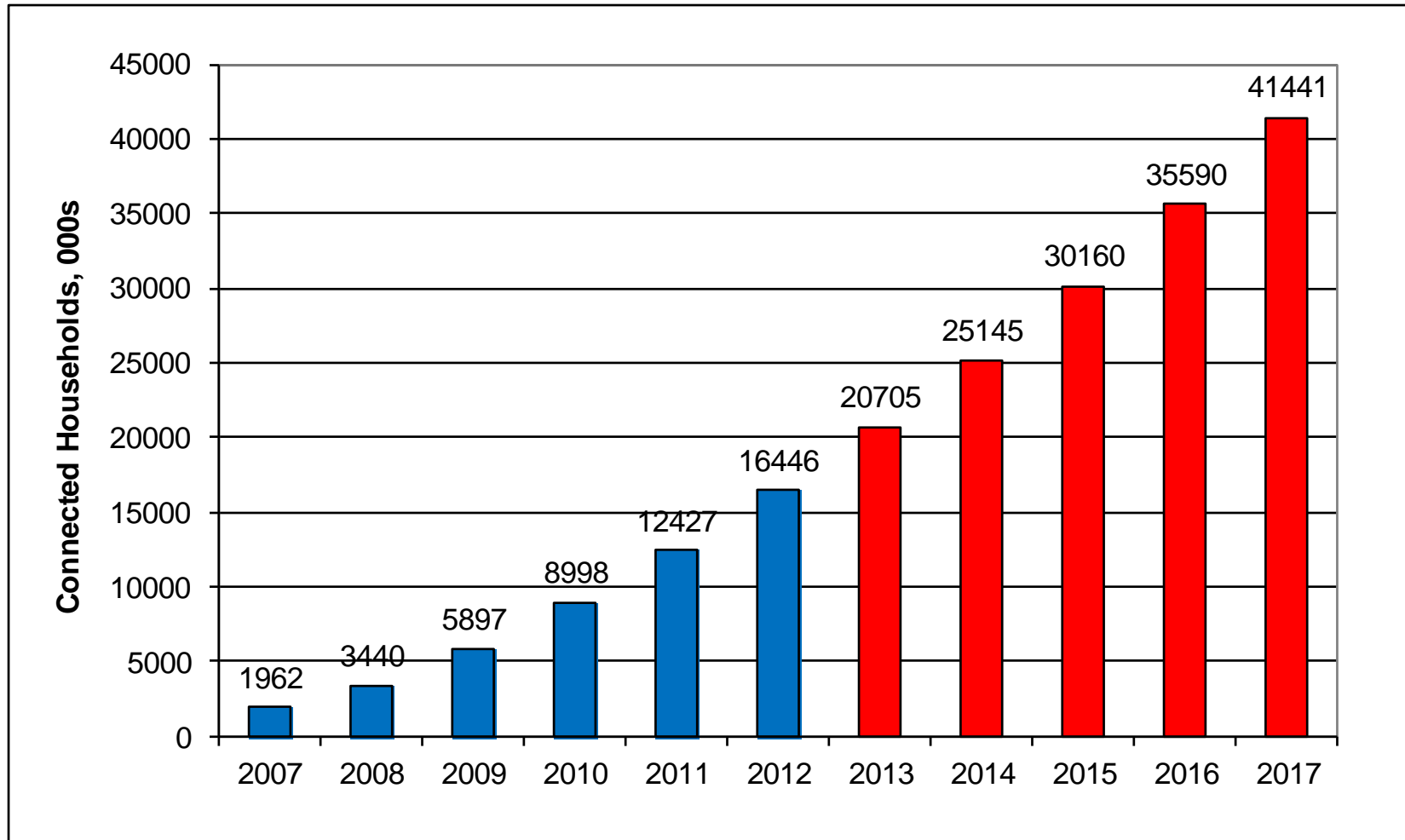
Negative Leading Indicators In 2012/2013

- No really compelling application yet that requires a fiber connection; poor year for new PC and TV sales
- Many Western European incumbents are still sceptical about business case for FTTH, and technologies like VDSL vectoring are leading to further postponements
- Poor conversion rate in others such as France
- Muni movement making slow progress in some countries, especially Germany
- EU severely cut CEF, which might have helped kick-start broadband in some territories

The Incumbent FTTH Gap

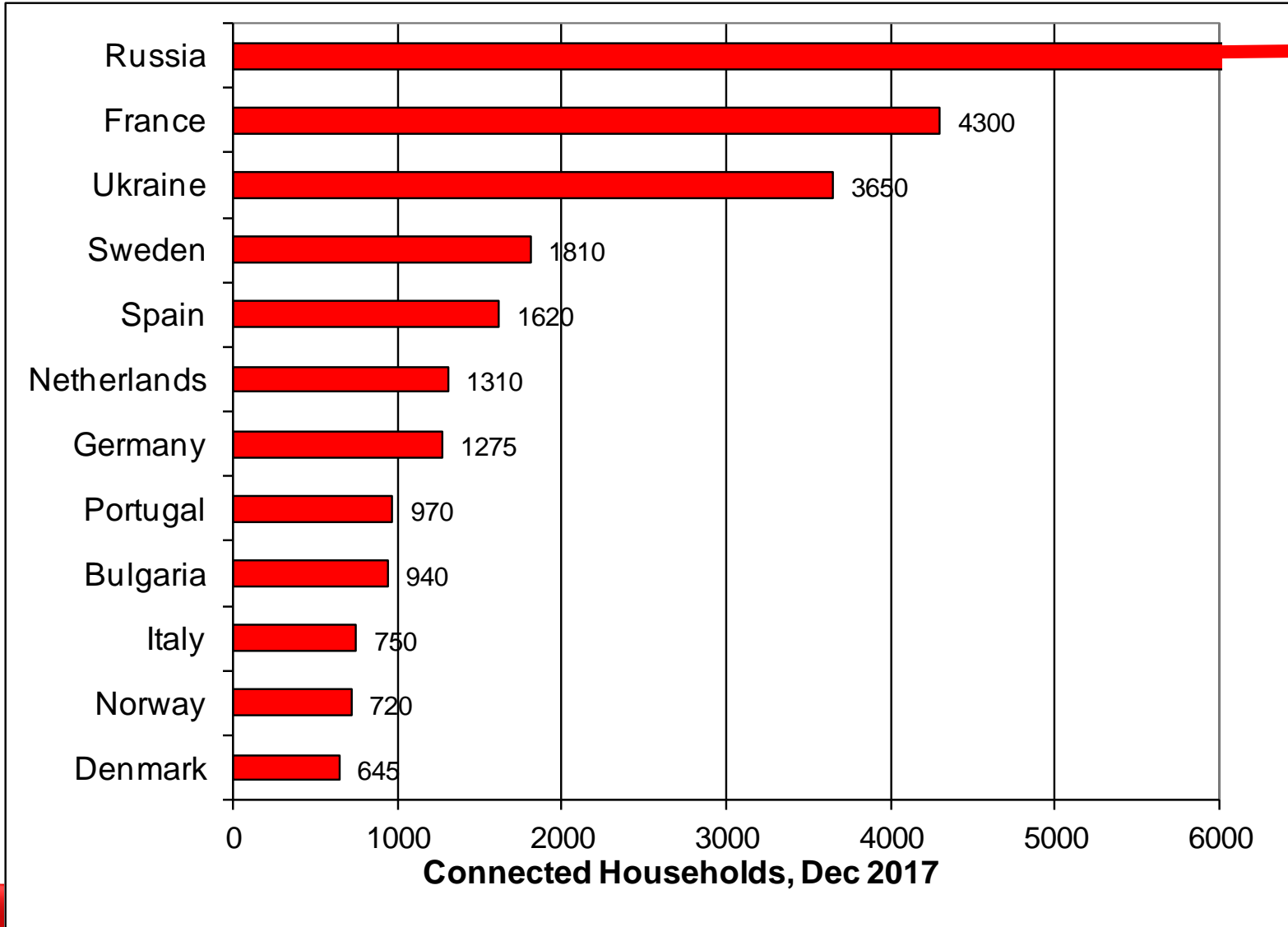


European Region FTTH Forecast



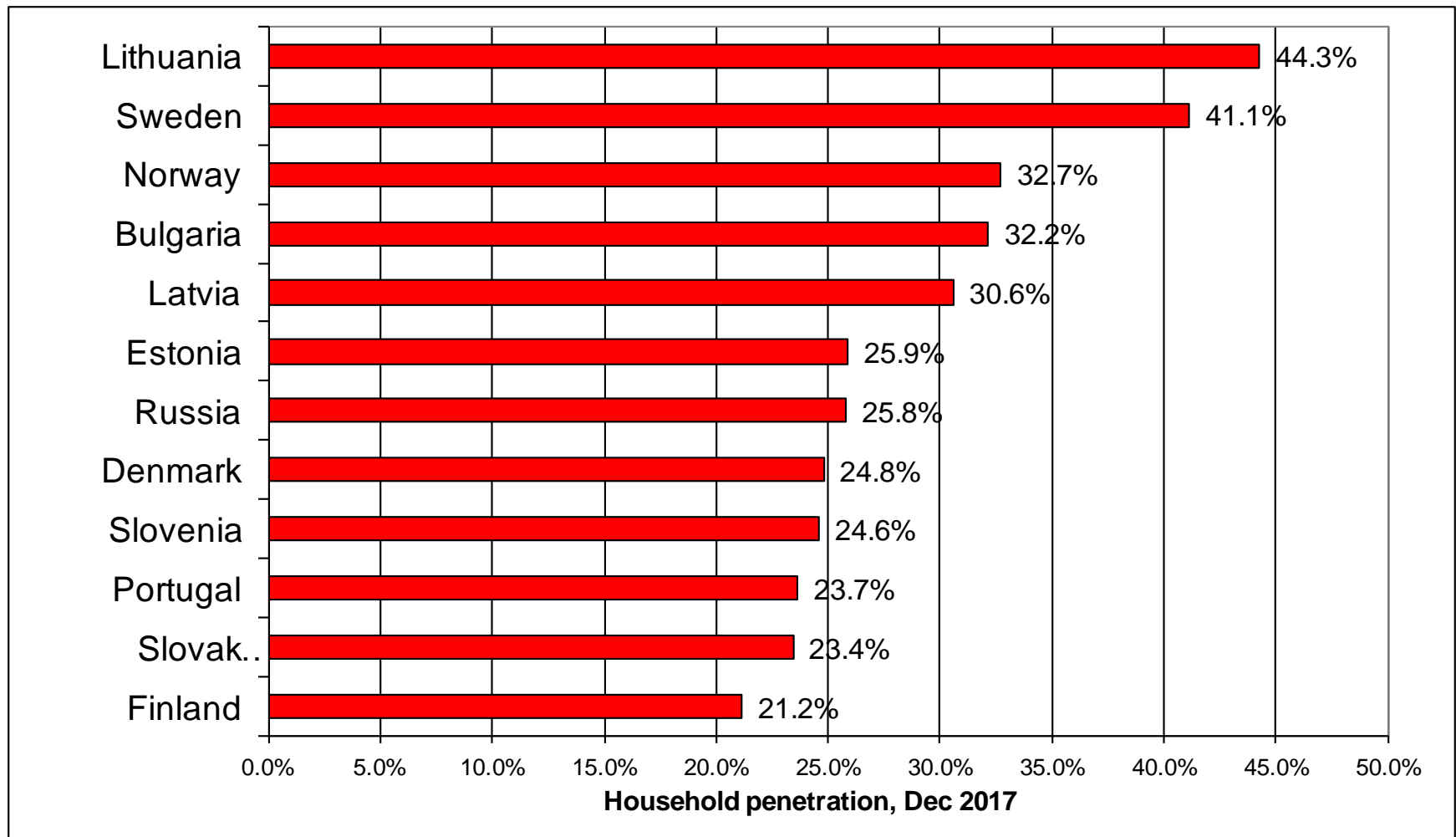
Note: Households connected directly to fiber and apartment connected via basement fiber termination (FTTB)

Top FTTH Countries In 2017*, By Number Of Connected Households



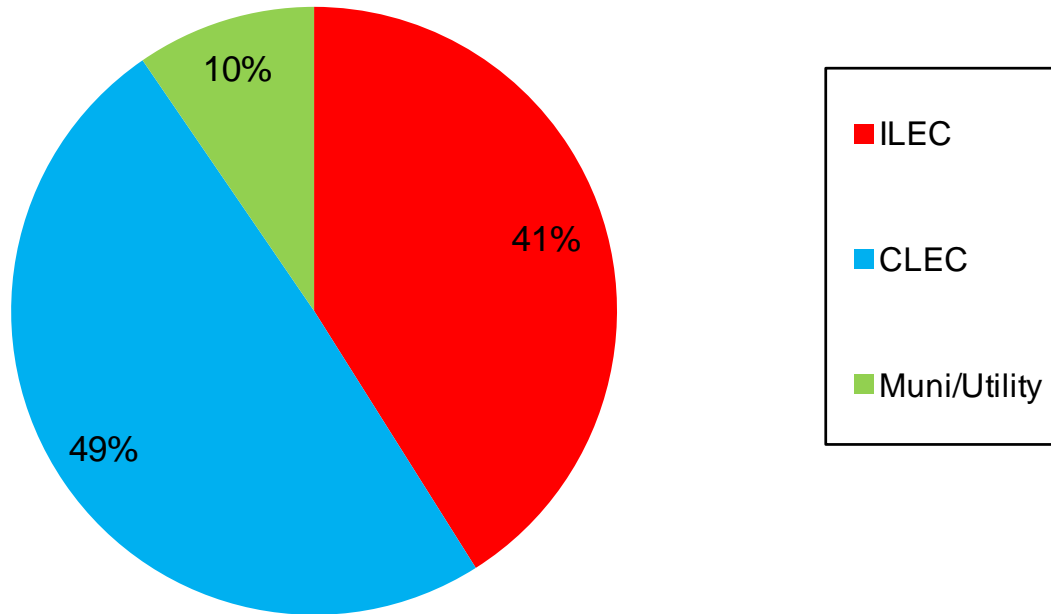
*Among the 21 countries analyzed in detail

Top FTTH Countries In Europe, 2017*, By Household Penetration



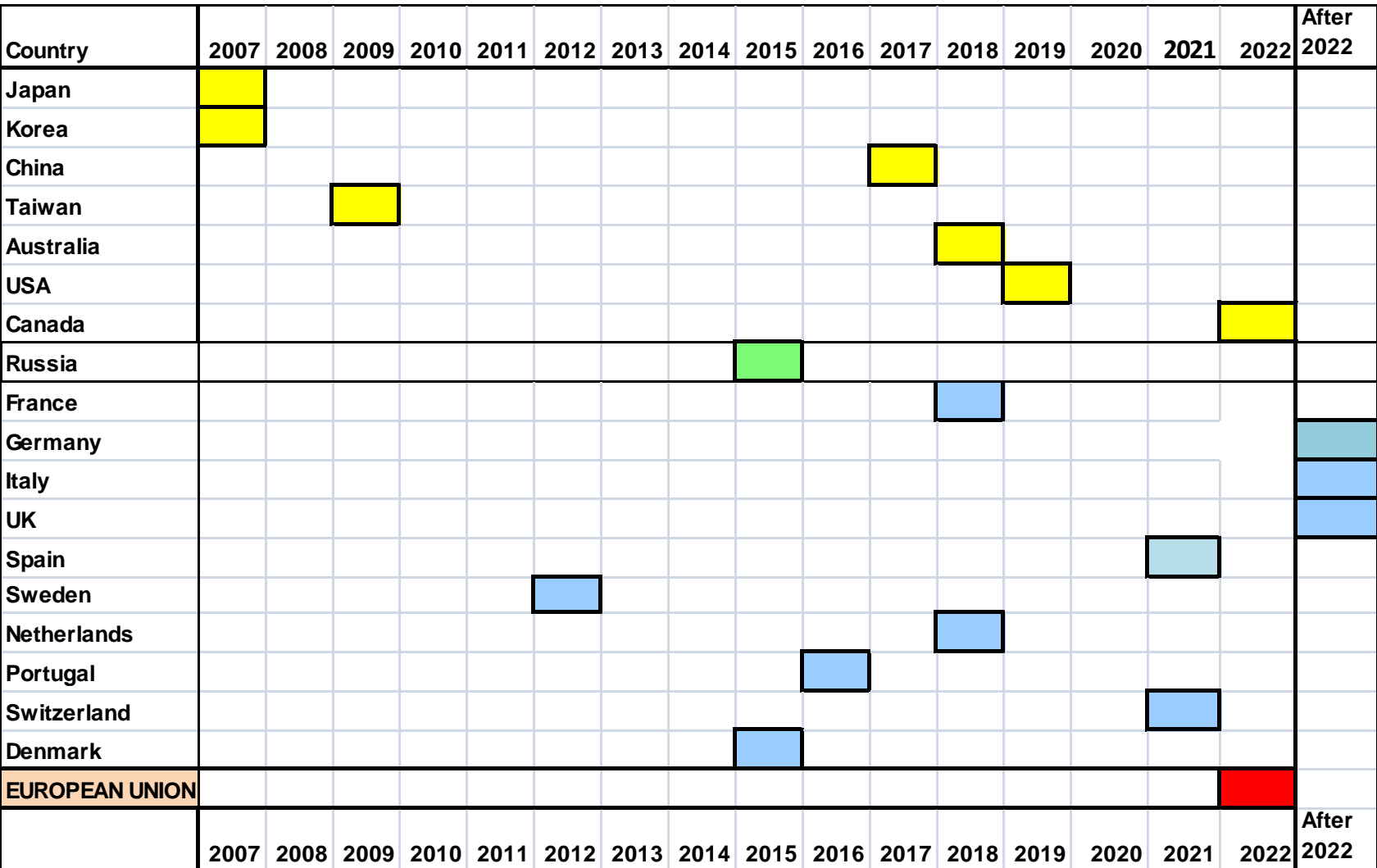
***Among the 21 countries analyzed in detail**

FTTH Connections In Europe, 2017, By Type Of Builder



Note: ILEC = former incumbent monopoly telco (PTT). CLEC = competitive or alternative telco or broadband provider. Muni/Utility = network built by municipal local authority or by a power utility

The Race To FTTH Maturity



Note: chart shows the year in which each territory is expected on **current trends and plans** to achieve “FTTH maturity”, defined here as 20% household penetration of FTTH or FTTB

Summary

- Almost 41.5m households are expected to be connected to FTTH or FTTB at the end of 2017 in the countries covered by this forecast– this is about 13.3% of all homes in the region
- In the EU only, the total is forecast to be just over 19m, or 9.7% of all homes
- 12 of the 21 nations individually analyzed should achieve “fiber maturity” (20% penetration) by 2017– Lithuania, Sweden, Norway, Bulgaria, Latvia, Estonia, Russia, Denmark, Slovenia, Portugal, Slovak Republic and Finland
- Our forecast projects that 5 of the 21 nations will still be under 10% penetration at the end of 2016–UK, Italy, Germany, Switzerland, and Austria
- Though the case for FTTH and actual deployment both improved markedly in 2012, the gap between different countries in Europe, and between EU and non-EU area, is still widening