



Enabling environment for sustainable growth and development of cable and broadband infrastructures

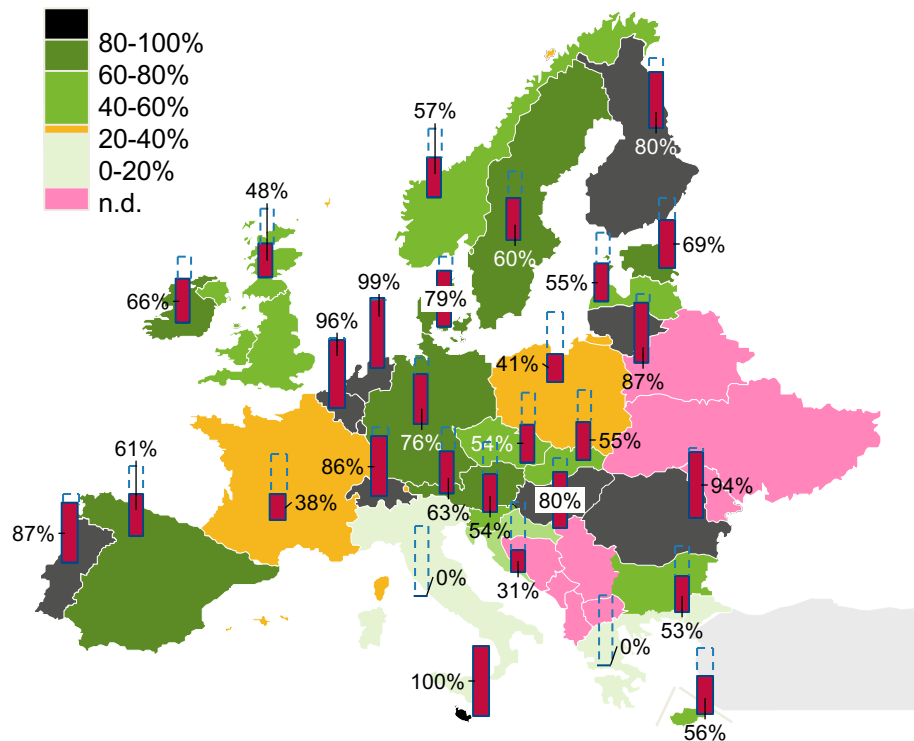
Matthias Kurth

Geneva – 25 January 2018

Cable operators reach more than half of European households and constitute a major actor in the European digital landscape

Overview of the Cable companies place in the EU digital landscape - 2014, EU 28 -

% of homes passed by cable per country



- 26 markets in Europe with 119 M homes passed – 54% of EU28 homes (63% when excluding Italy and Greece)



- 56 M subscribers accessing TV via cable
- 32 M subscribers connected to internet via cable

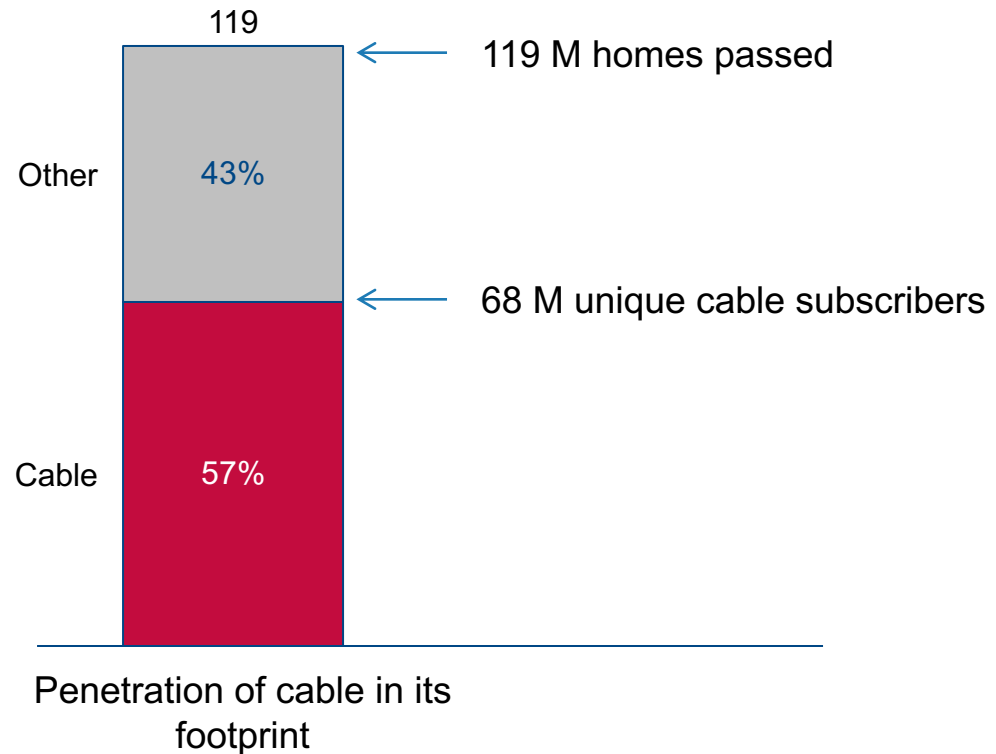


- Total revenues exceeding € 21 bn

Cable is a major actor in its footprint with 57% of the consumers adopting cable for at least one cable service

Penetration of cable in its footprint
- 2014, EU 28 -

% of homes passed

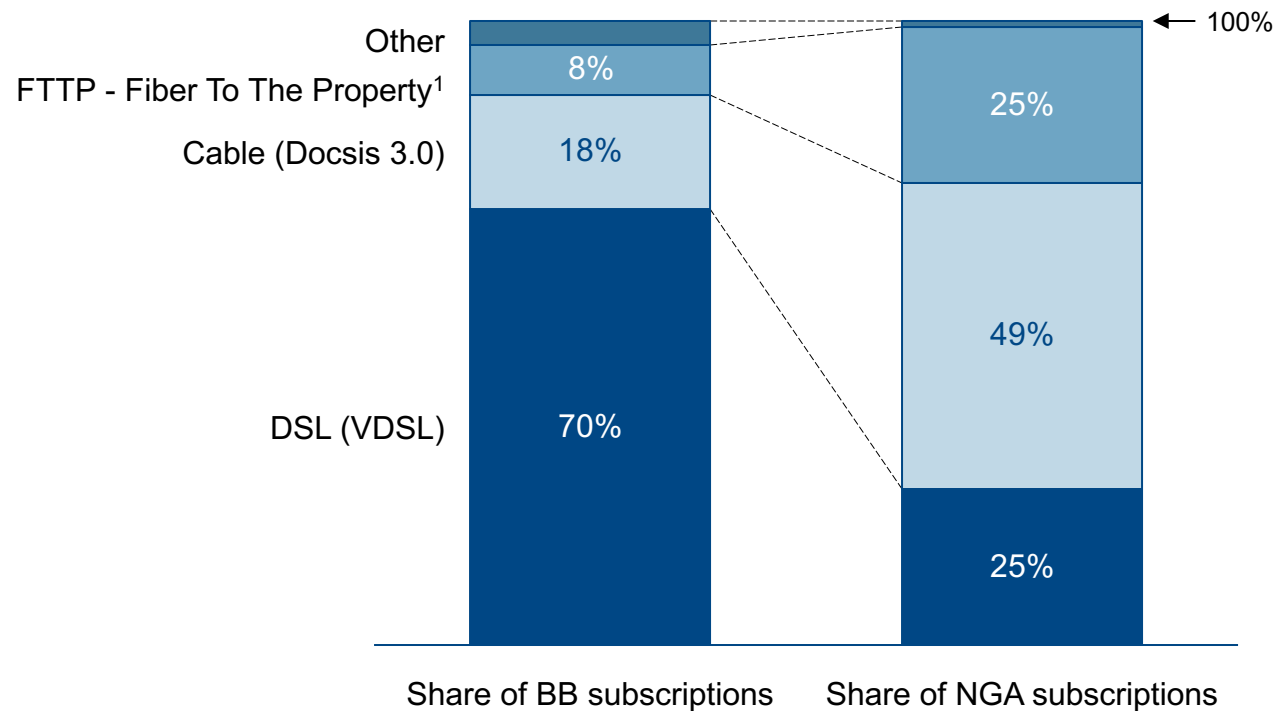


Source: Arthur D. Little analysis, European Commission Digital Agenda, IHS, cable companies websites & annual reports, press releases, Screendigest 2011, WiK, Credit Suisse, jcta

Cable is currently the largest provider of Next Generation Access (NGA) despite its lower share in broadband subscriptions

Broadband subscription and NGA penetration by technology - 2014, EU 28 -

% of broadband and NGA subscriptions (NGA; ≥ 30 Mbps)

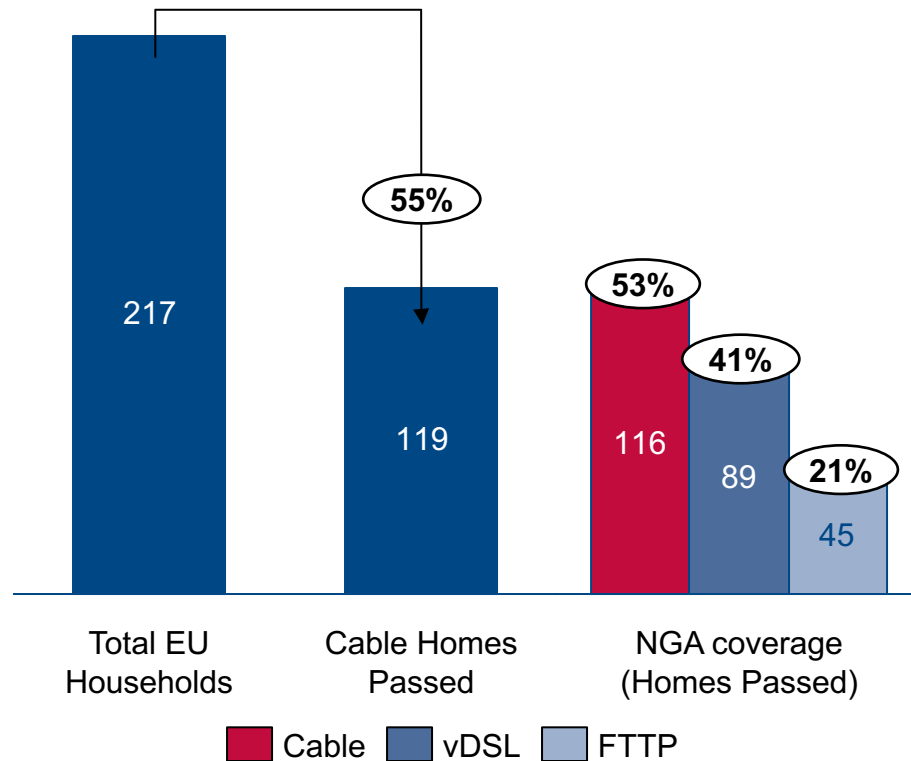


Source: Arthur D. Little analysis, European Commission Digital Agenda. 1. Includes Fiber To The Home (FTTH) and Fiber To The Building (FTTB)

Cable is the technology most able to connect a large base of the population with next-generation very high speed access in Europe

NGA coverage by technology - 2014, EU 28 -

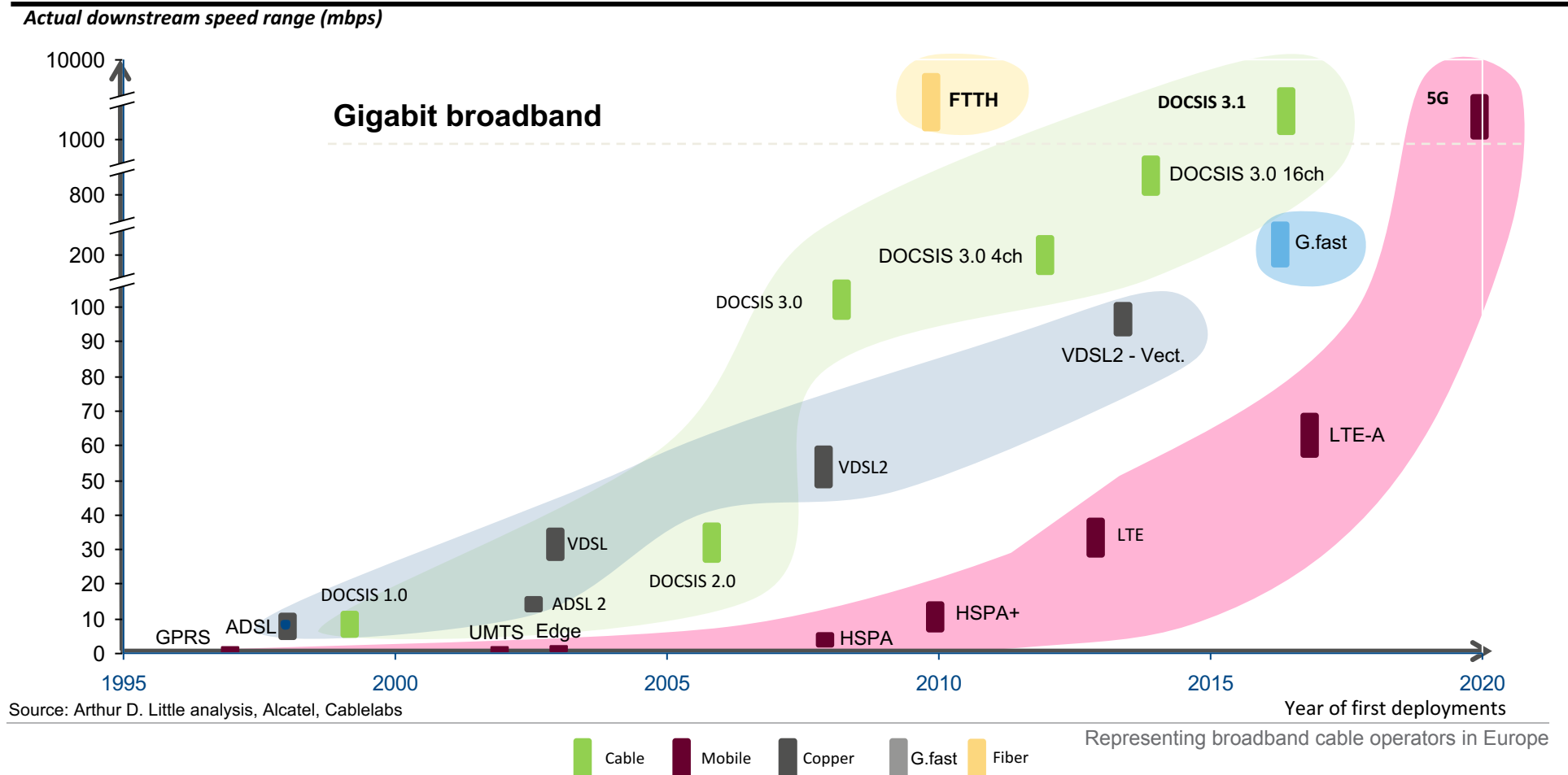
M or % of home passed



- 98% of the cable network is upgraded with DOCSIS 3.0
- 71% of European homes are passed by at least one NGA
- Compared to other technologies, Cable has the highest coverage of Next Generation Access (NGA; ≥30 Mbps) in Europe
 - 53% of EU 28 households passed by cable NGA (63% when excluding Italy & Greece)
 - 41% for VDSL
 - 21% for Fiber To The Property (including FTTH and FTTB)

Cable operators are at the forefront of high-speed access and keep investing in a future-proof technology, which will progressively deliver performance expected from FTTH and 5G

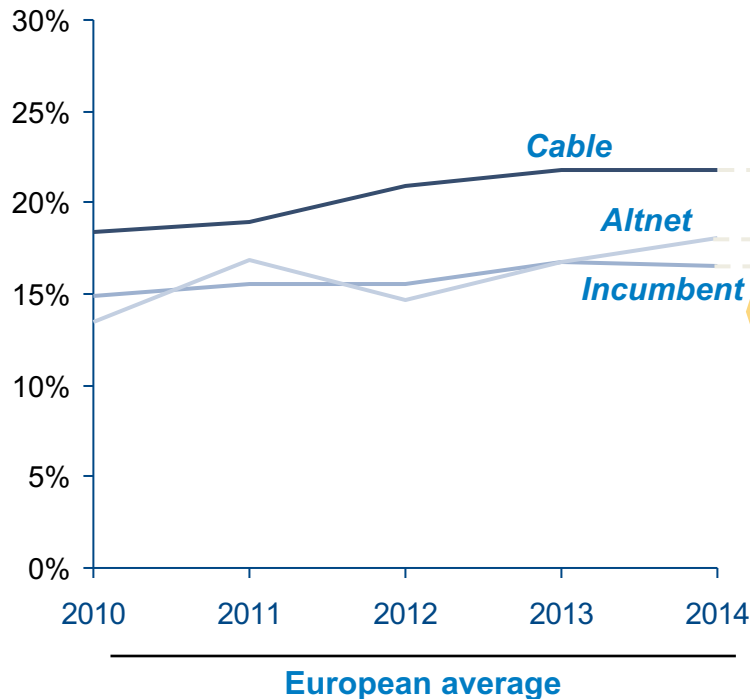
Broadband access technology roadmap (actual downstream speed range)



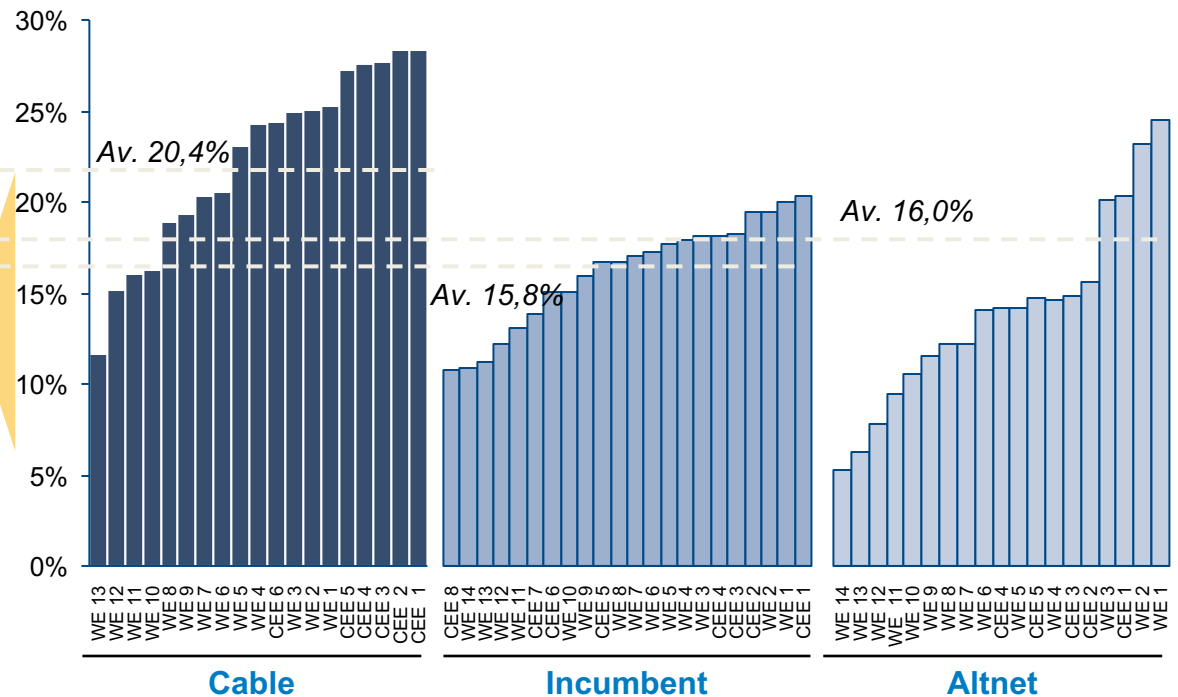
Cable operators have been continuously investing in their networks over the last 5 years and will continue to do so: CableCos have higher capex/sales ratio than other operators

Capex to sales by operator type (evolution and split by country) - 2010 - 2014, EU 28 -

Fixed capex to sales¹ in %, by operator type



Fixed capex to sales in %, 2010-2014 average of main EU operators, by operator type



Source: Arthur D. Little analysis, Ovum, Credit Suisse, Bank of America, Broker reports, Annual reports, New Street Research. 1. Computed by taking weighted average capex and sales figures

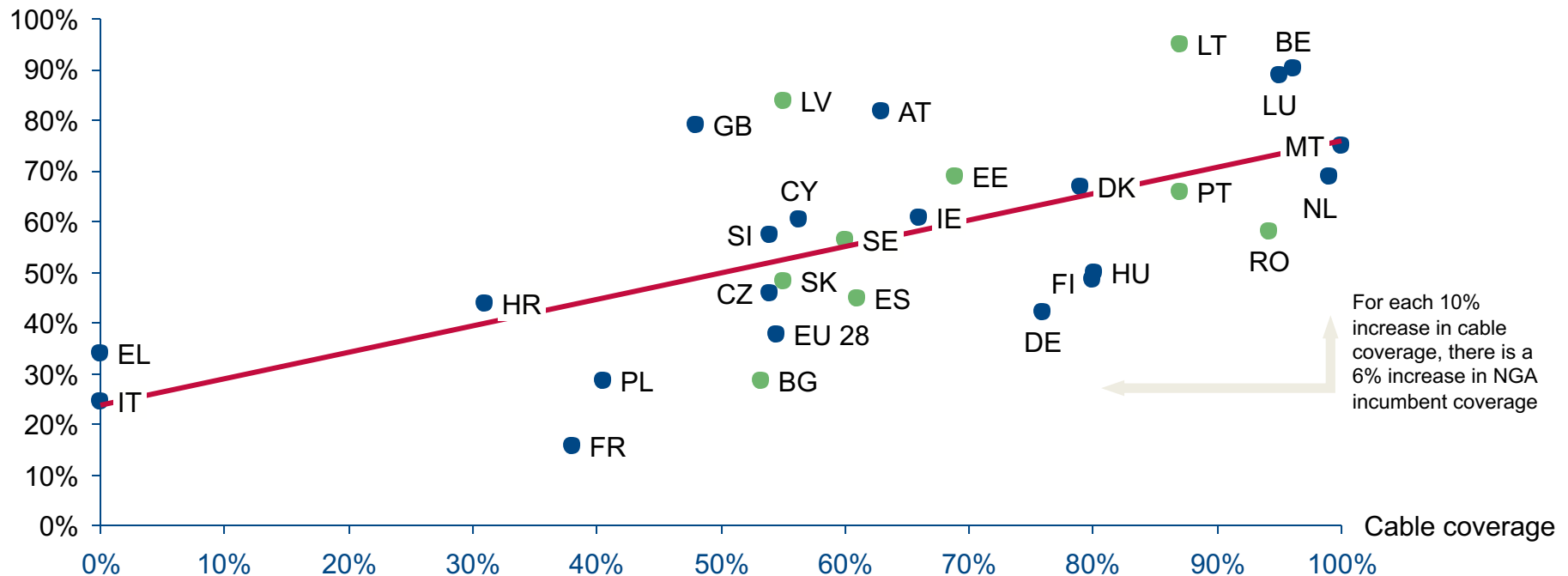
Cable operators fuel infrastructure-based competition and play a key role in the competitive dynamics of EU digital markets (1/2): CableCos push incumbents to deploy NGA technology

Correlation between Cable coverage and VDSL / FTTP coverage - 2014, EU 28 -

Technology coverage in %, by country

Highest coverage of VDSL or FTTP

● VDSL ● FTTP

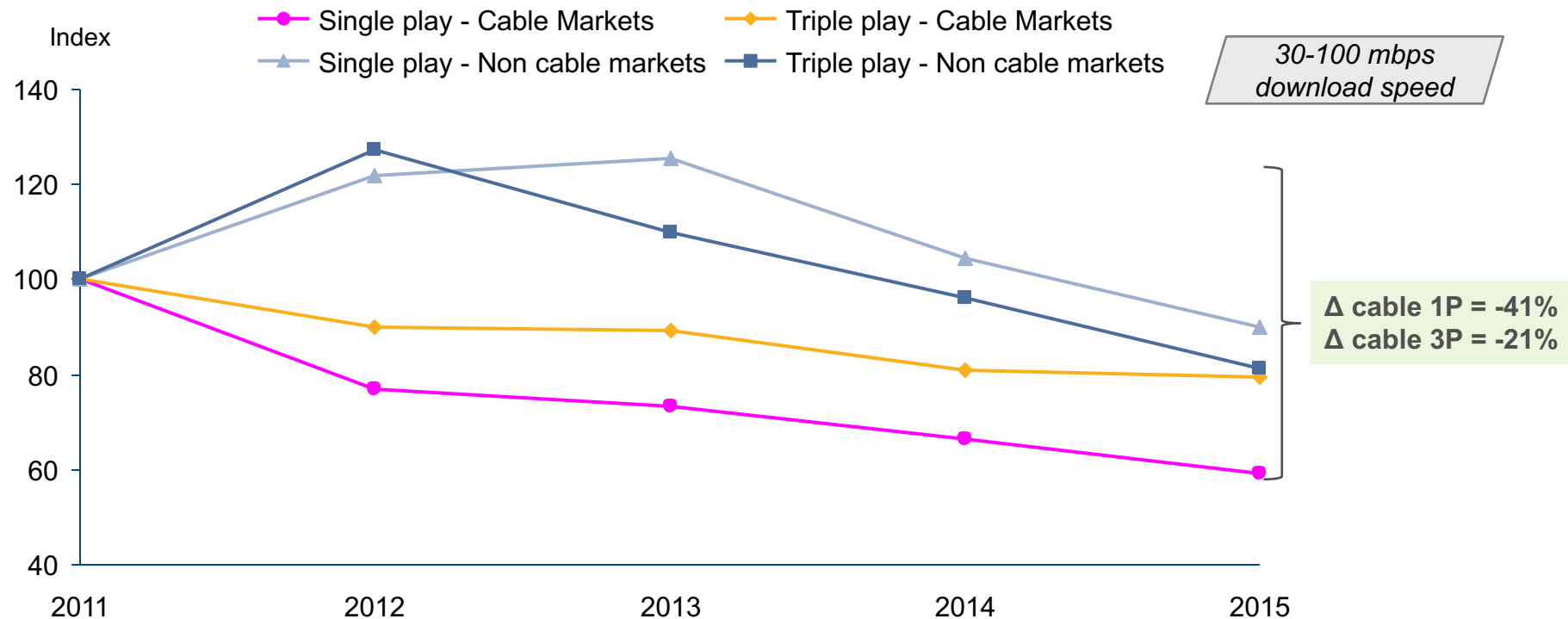


Source: Arthur D. Little analysis, European Commission - Study on broadband coverage in Europe in 2014. Note: The VDSL/FTTP coverage per country is that of the technology (VDSL or FTTP) that has the highest coverage

In cable markets, operators broadband retail prices have been decreasing by 29% over the 2011-2015 period

Evolution of broadband retail price¹ - 2011 - 2015, EU 28 split by cable and non cable market² -

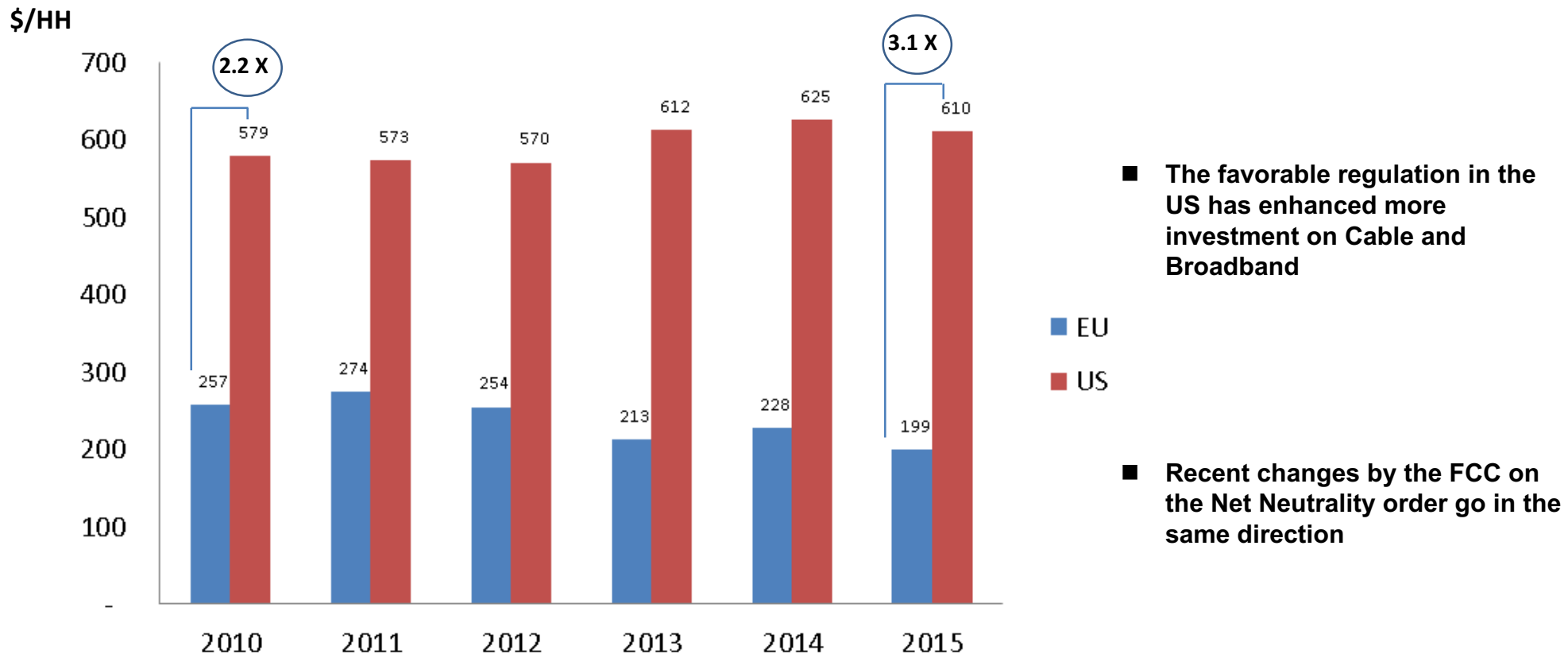
Index of average broadband prices, 2011 = 100, cable market includes countries with cable coverage >60%



Source: Arthur D. Little analysis, European Commission Digital Agenda using Van Dijk data. 1. Correspond to the minimum price between similar offers from incumbent, cable and alternative network operators, corrected using Purchasing Power Parities (PPPs). 2. Cable market include countries with over 60% of cable coverage: Malta, Netherlands, Belgium, Luxembourg, Romania, Finland, Lithuania, Portugal, Hungary, Denmark, Germany, Estonia, Ireland, Austria, Spain, Sweden, whenever corresponding offers were found on the national market

Policy and regulatory environment plays a key role for cable TV and Broadband

Investment per Household in the Electronic Communications Sector in the U.S. and Europe, 2010 - 2015



European commission launched a massive revision of the regulatory framework to foster private investment in cable and broadband infrastructures to reach a gigabit society

Ongoing regulatory legislative processes

The Digital Single Market strategy has delivered the main legislative proposals

specifically in the topics of:

- **telecoms review**
- **audiovisual and media services**
- **e-commerce**
- **ePrivacy + GDPR (enforceable May 2018)**
- **copyright**
- **harmonisation of digital rights**

The present discussion still has controversial topics:

- 1 Joint dominance, duopolies - are two networks enough to enable a competitive market landscape?
- 2 Symmetric regulation – Increase it will endanger investment to modernize infrastructure based competition
- 3 Less access regulation on Very High Capacity (VHC) networks and shift to co-investment of 2 or more private investors
- 4 Easy and innovative copyright rules that follow technology evolution (cross border access to content, portability of content, time-shift tv services, catch-up tv, etc.)
- 5 Level playing field with OTT in data protection and privacy rules
- 6 State Aid has to be limited to white areas (extreme rural) and not finance overbuild of private infrastructures



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