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ITU Regional Seminar on the Economic and Financial aspects of telecommunications/ICTs – Latin America and the Caribbean

The Italy and Spain NGA cases from a commercial and regulatory point of view

19 March 2013 • Joan Obradors

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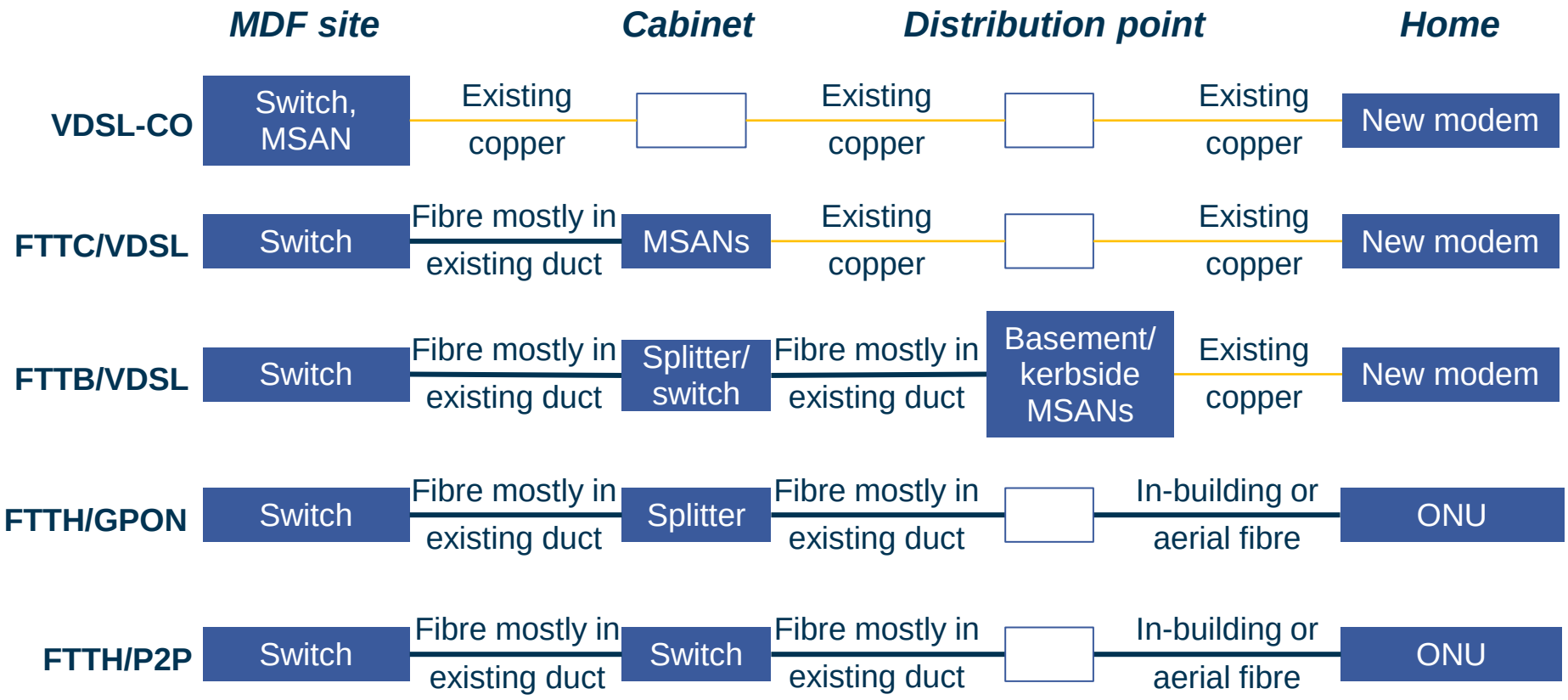
There are several architectures that can be used to deploy NGA networks

Copper and fibre based architectures to deploy NGA networks



Source: Analysys Mason Research

Note: Cable-based access technologies (e.g. DOCSIS 3.0) can also be used to deploy NGA networks

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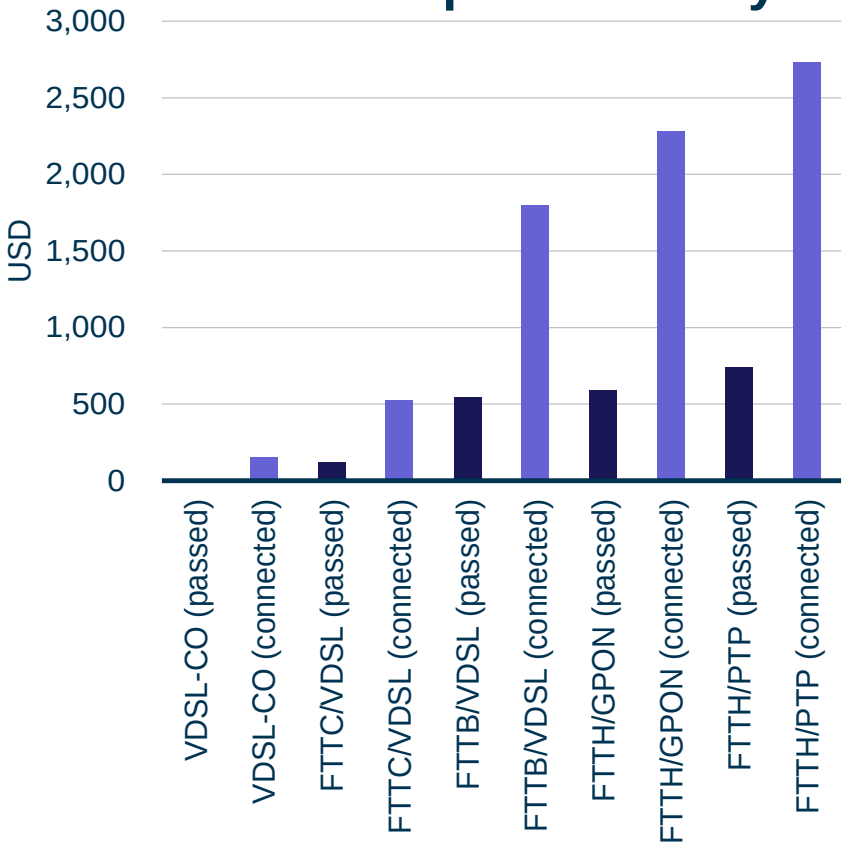
FTTH deployment costs are about five times greater than FTTC deployment costs

- FTTx capex can be divided into the following two types of deployments:
  - horizontal deployment (premises passed):
    - for VDSL, FTTC/VDSL and FTTB/VDSL, this means the cost of rolling out fibre as far as the MSAN cabinet
    - for FTTH, in most areas this means roll-out to the last splitter, in the case of GPON, or to a last node or even to the dwelling, in the case of PTP
  - vertical deployment (premises connected)

Example of the NGA unit costs in a Western European country (*)

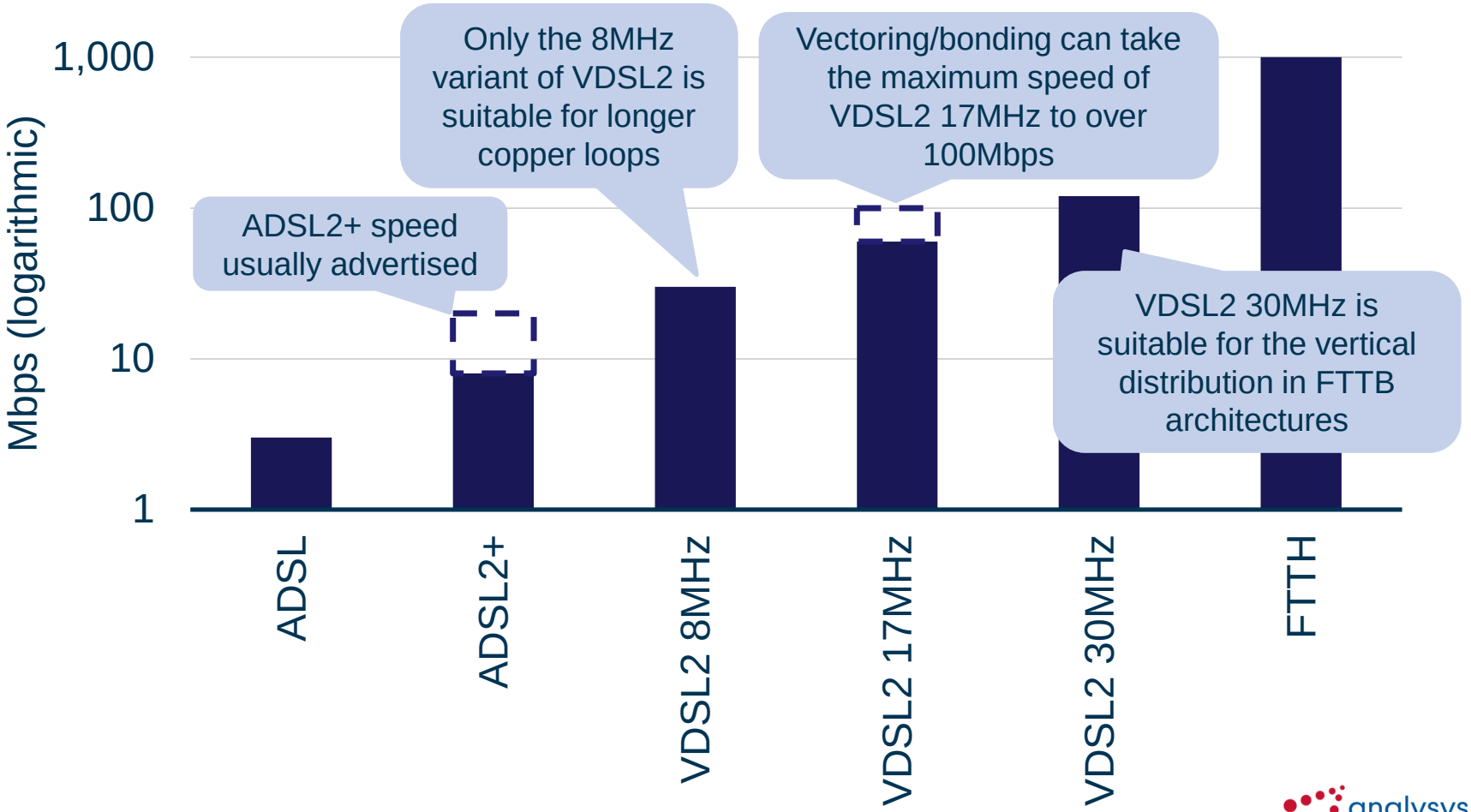


Source: Analysys Mason Research

(*) Benchmark from a Western European country, in which between 20% and 25% of the population live in MTU and the take up of the service is 33%. Costs will vary depending on different factors (e.g. take up of FTTH, number of households per dwelling, etc.)

Accelerated DSL can take copper access to above 100Mbps, but still below than FTTH

Typical downstream speeds per access technology



Source: Analysys Mason Research

In-building wiring can be the last hurdle in the roll-out of NGA services

- The cost of cabling a building of 20 dwellings varies widely, but has been estimated between EUR5000 and up to EUR15 to 20 000 per building* (i.e. from c. EUR250 to a maximum of EUR1000 per home in a 20 home MDU**)
  - Pre-wiring of the building can result in significant savings, ranging from 20 to 60% of the retro-fitting cost
- In Spain, builders are obliged to equip all new buildings with high-speed Internet (100Mbit/s) vertical distribution network (ICT)
  - About 20% of the existing buildings now have ICT
- In Italy there is no obligation of cabling new buildings with fibre
  - However, high-level figures are broadly aligned with the benchmarks (i.e. EUR750-1000 per dwelling passed)
- Both countries are now proposing symmetric obligations to the vertical segment of the NGA network

(*) Low end figure from wiring a new building in a big-5 EU country. High end figure from retrofitting an existing building

(**) Multi-dwelling Unit

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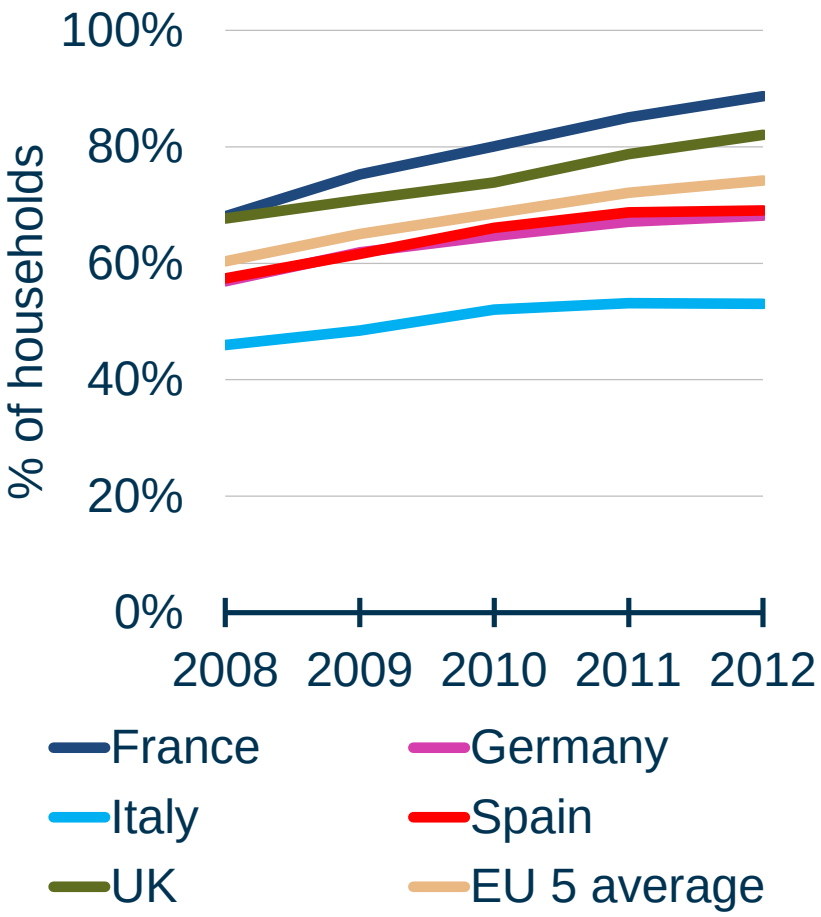
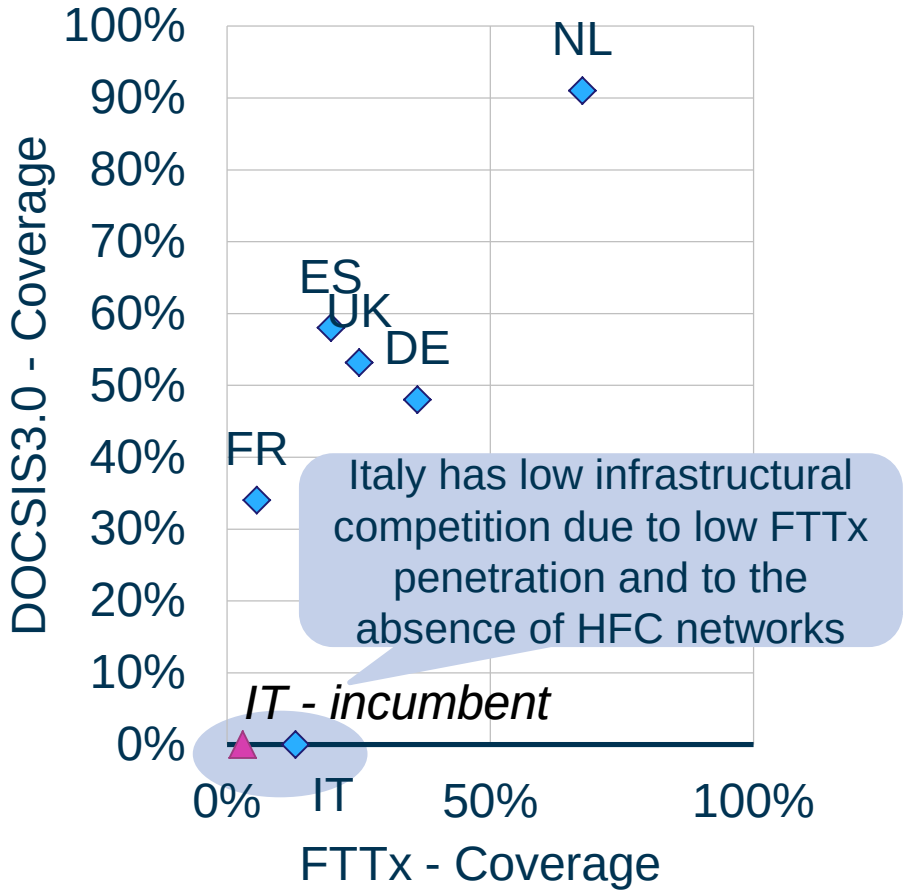
Italy's fixed broadband penetration is lower than in the other EU5 countries

Fixed broadband penetration



Premise coverage (2011)



Note: FTTx coverage includes the premises passed with FTTH/B technologies and the premises passed with VDSL where no FTTH is available

Source: Analysys Mason Research, CMT

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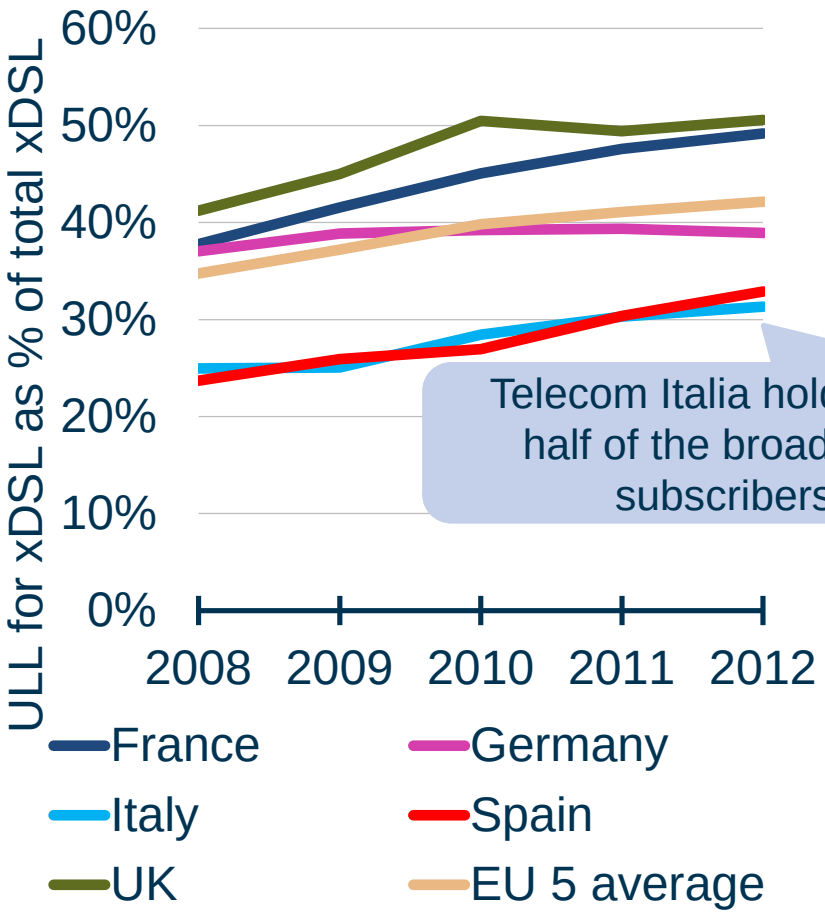
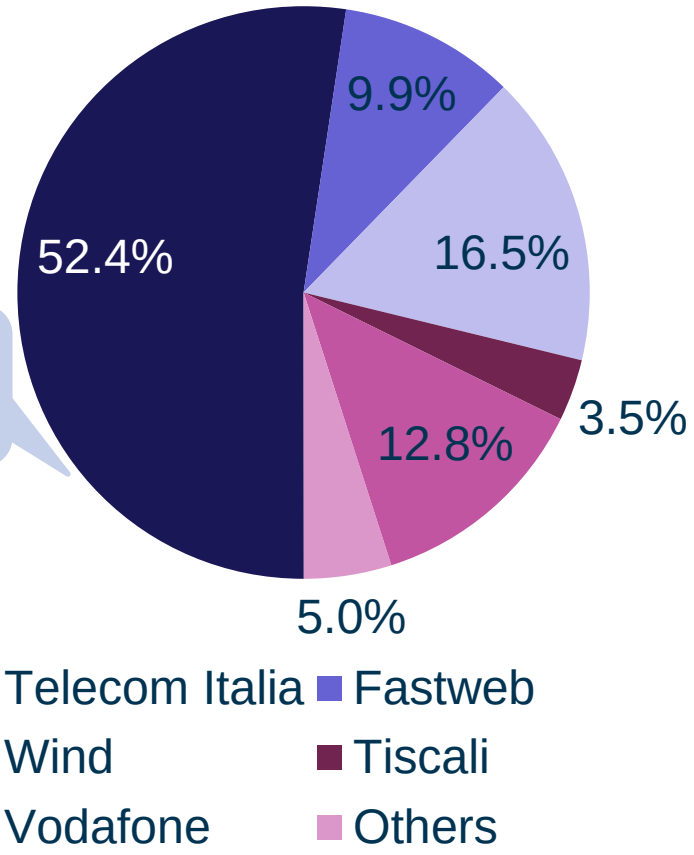
The low share of unbundled local loops allows the incumbent a high market share …

Share of unbundled local loops



Telecom Italia holds over half of the broadband subscribers

Shares of BB subs. 3Q 2012



Source: Analysys Mason Research

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… since the premium xDSL products are *de facto* available in the LLU areas only

- The current structure of the Italian copper access network allows broadband nominal speeds up to 20 Mbit/s
  - higher speeds are reached only by Fastweb through its FTTH network in 7 municipalities
- However, in the rural areas the length of the copper local loop is too high to allow high speeds
- The strongest competition is then in the LLU areas, where OLOs can leverage on shorter copper loops and own infrastructure to provide premium services

Broadband speeds and ARPUs

Operator	Nominal speed Mbit/s	Monthly ARPU* EUR/subs
Telecom Italia	20	18.9
Fastweb	100	52.5
Wind	20	18.9
Tiscali	20	30.0
Vodafone	7	18.8

- The broadband monthly ARPU in Italy is about EUR22.6
- Fastweb's ARPU is significantly higher than average due to its premium retail offers (100 Mbit/s over fibre) and a more business-oriented customer base

** 3Q 2012*

Source: Analysys Mason Research

All the 3 main fixed players have a NGA plan

Telecom Italia

- Coverage: 125 towns (30% pop.), of which 30 by mid-2013
- Architecture: FTTC

Fastweb

- Coverage: 19 towns (5.5 million families) in 2 years
- Architecture: FTTC
- Investment plan: EUR0.4 billion*

F2i/Metroweb

- Coverage: 30 towns (18% pop.) by 2015 (current operations: Milan only)
- Architecture: FTTH
- Investment plan: EUR5.4 billion

The operators' NGA plans

** Largely in co-investment with Telecom Italia*

Source: operator presentations and press releases

The regulatory process for NGA regulation in Italy is currently on-going

Obligations for NGA networks in Market 4 and 5 in Italy

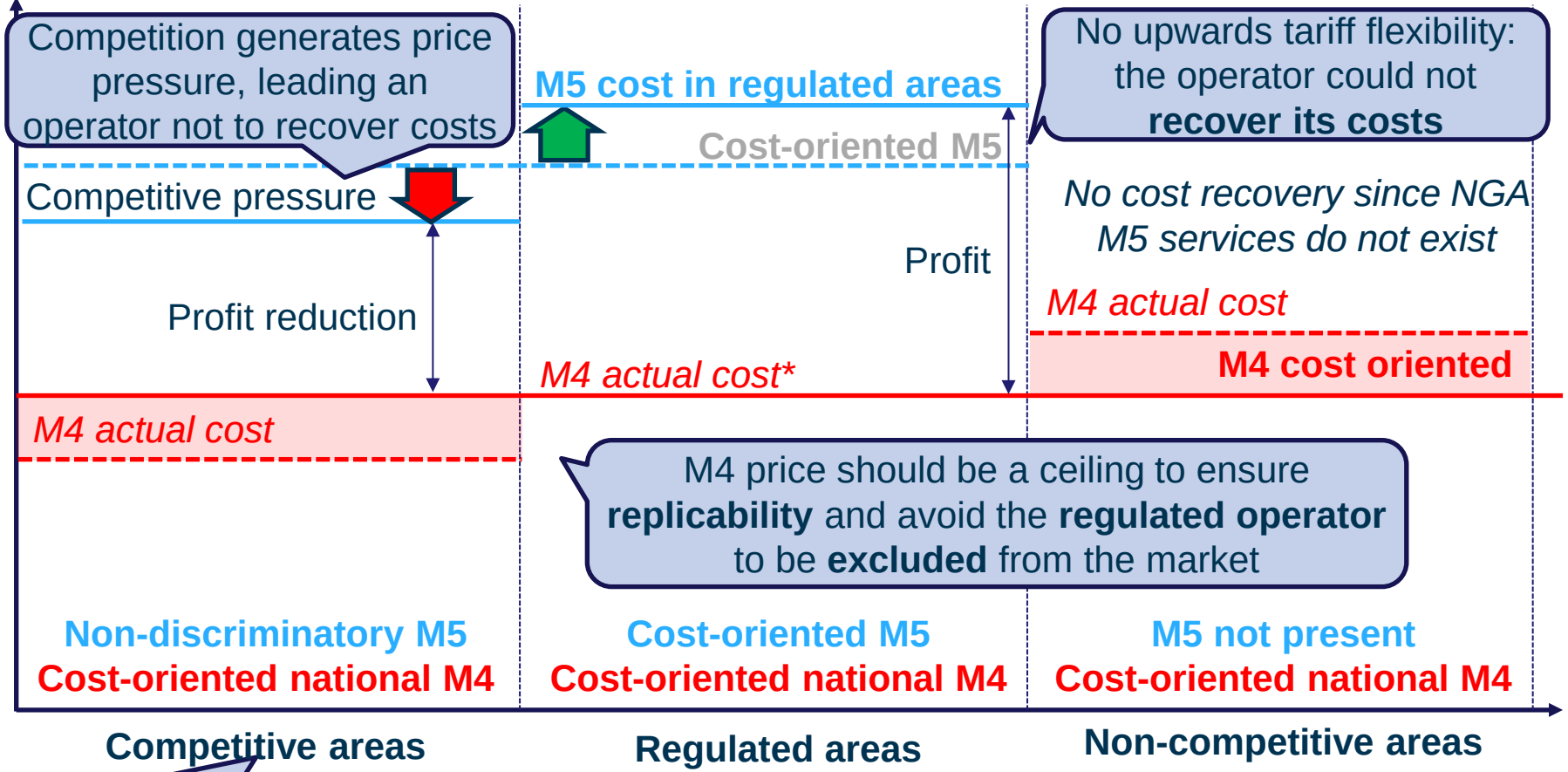
Guidelines	▪ **Market 4** – obligation of access to Telecom Italia's physical passive infrastructure (including ducts) ▪ **Market 5** – obligation of wholesale bitstream access provision for Telecom Italia with geographical price differentiation
Costing and pricing	▪ **Cost-oriented prices**, based on a **BU-LRIC** methodology including a **risk premium** ▪ The regulatory process aiming at defining Telecom Italia's Reference Offer for NGA services for 2013 is currently on-going – the expected price regulated services are **access to ducts**, **dark fibre**, **VULA** (both FTTC and FTTH) and **vertical** segment, as well as NGA backhaul (to 1st and 2nd level) ▪ The process is also aiming to assess the right value for the WACC (and for the risk premium), the appropriateness of a market geographical segmentation and the impact of vectoring*

** which needs full control of the local sub-loop, thus preventing the provision of wholesale services like shared access*

Source: Agcom

Geographical segmentation is not a negligible point

Impact of cost-oriented prices vis-à-vis geographical areas



M5 costs should exclude competitive areas

** It is likely that M4 cost in regulated areas be aligned with the national average cost*

Source: Analysys Mason

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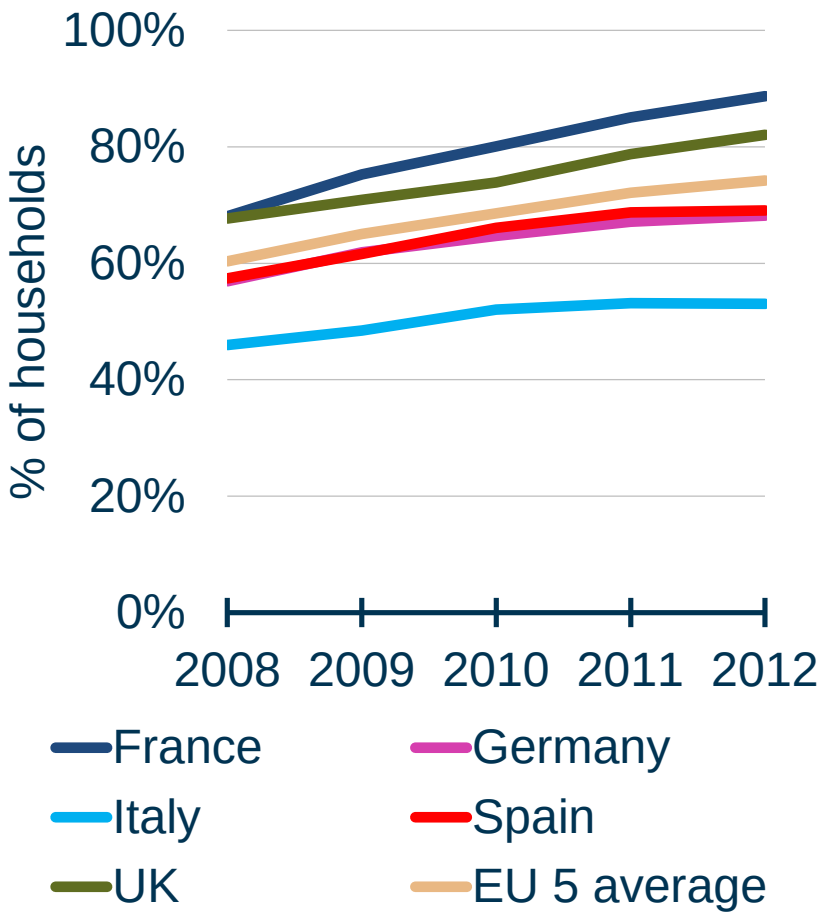
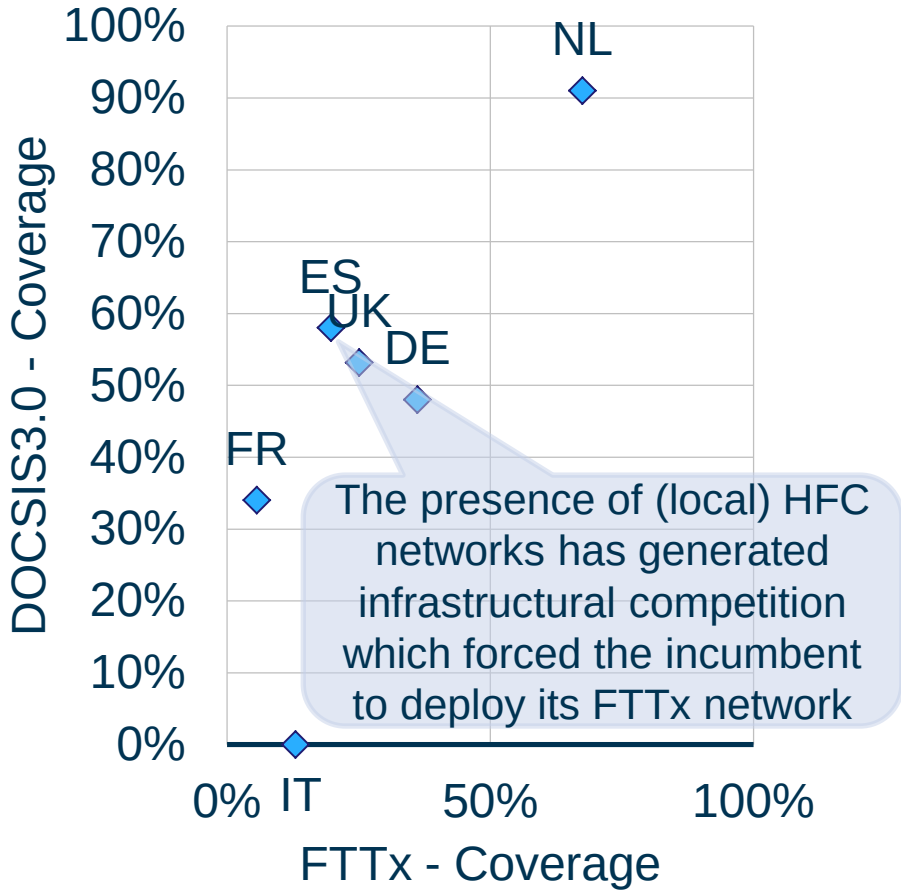
Fixed broadband in Spain has been boosted by the presence of cable networks

Fixed broadband penetration



Premises coverage (2011)



Note: FTTx coverage includes the premises passed with FTTH/B technologies and the premises passed with VDSL where no FTTH is available

Source: Analysys Mason Research, CMT

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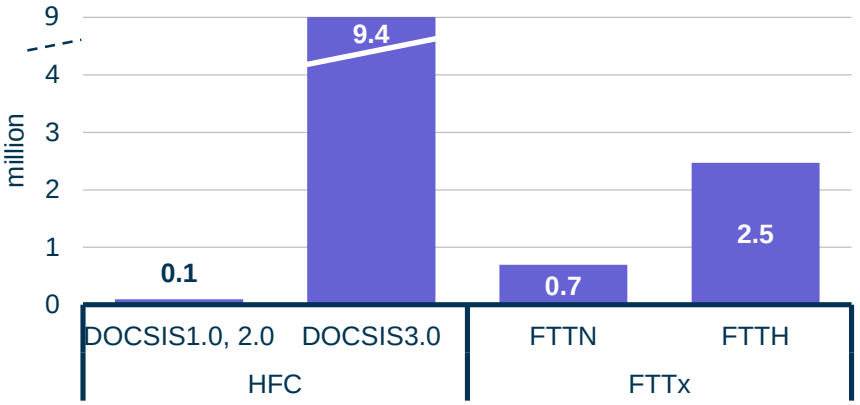
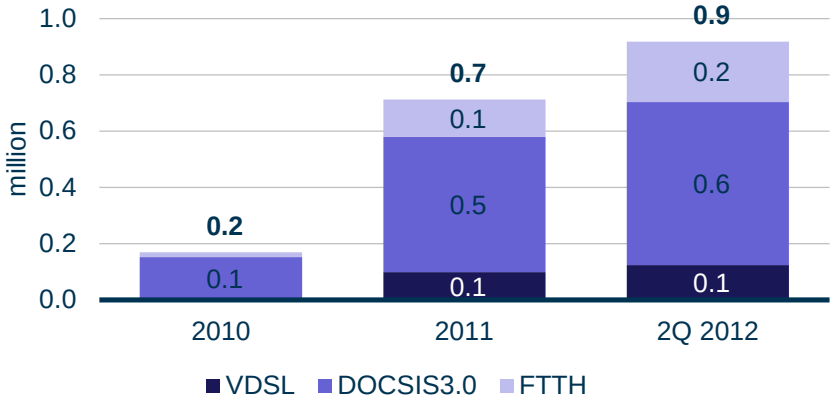
The deployment of NGA network is driving an increase of ultra-broadband connections

- According to the CMT, the Spanish NRA, by June 2012 over 99% of cable accesses (i.e. over 9 million accesses) was linked to a DOCSIS 3.0 node, allowing speeds higher than 100 Mbit/s
  - at the same moment, the total number of FTTH installed accesses reached 2.5 million
- This roll-out has enabled an increase in the number of ultra-broadband connections, which at June 2012 was about to exceed one million

Cable and fibre accesses



Ultra-broadband connections



Source: CMT

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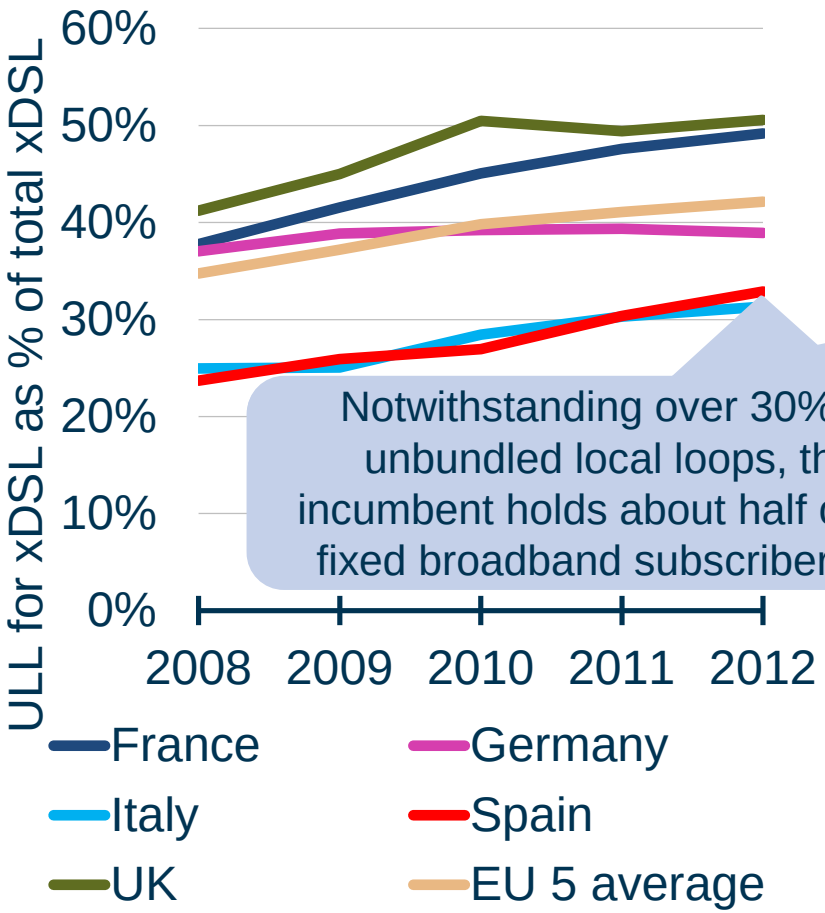
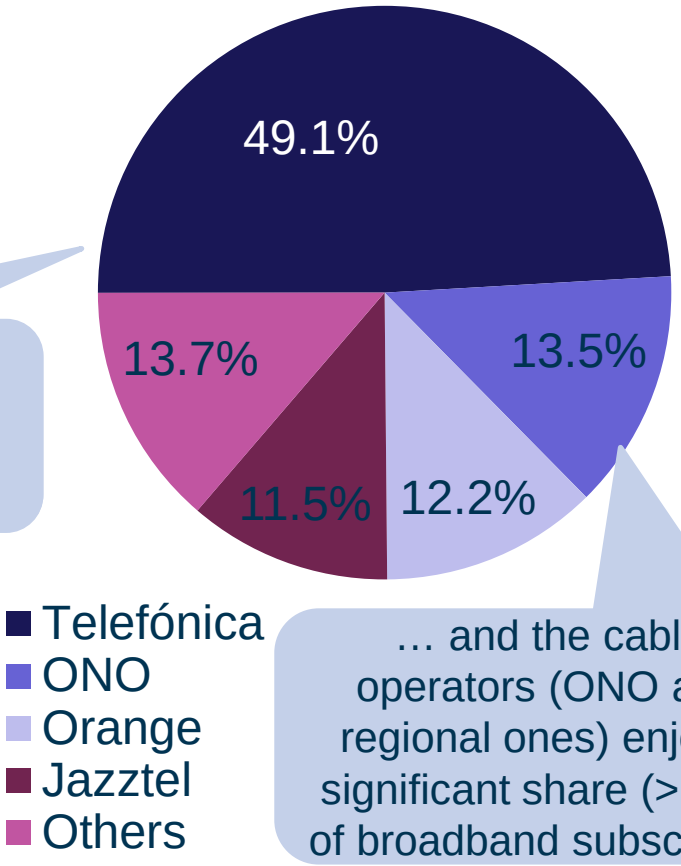
The regional cable operators hold together a significant share of broadband subscribers

Share of unbundled local loops



Notwithstanding over 30% of unbundled local loops, the incumbent holds about half of the fixed broadband subscribers …

Shares of BB subs. 3Q 2012



… and the cable operators (ONO and regional ones) enjoy a significant share (>18%) of broadband subscribers

Source: Analysys Mason Research

The broadband ARPU in Spain, even if declining, is higher than the Italian one

- Thanks to the upgrade to the DOCSIS 3.0 technology, cable players are now able to offer download speeds of 100 Mbit/s
  - the same is occurring for Telefónica, which is deploying its FTTx network in several municipalities
- The players are then able to offer higher performance services, which help them sustain their revenues
  - indeed, the broadband market monthly ARPU in Spain is about EUR26.7

Broadband speeds and ARPUs

Operator	Nominal speed Mbit/s	Monthly ARPU* EUR/subs
Telefónica	100	28.3
ONO	100	29.1
Orange	20	23.9
Jazztel	30	34.4

The main players are being able to keep their broadband ARPUs higher than the Italian players' ones also due to more performing services

** 3Q 2012*

Source: Analysys Mason Research

After the deployment of DOCSIS3.0, the OLOs are now focusing on FTTH

OLO's NGA timeline

2010

- **Q1.** Orange tests FTTH in Madrid and Barcelona
- ONO begins to update its cable network to DOCSIS 3.0
- **Q2.** Jazztel launches VDSL-2 30 Mbit/s services

2011

- **Q4.** ONO completes upgrade to DOCSIS 3.0 (7m households)

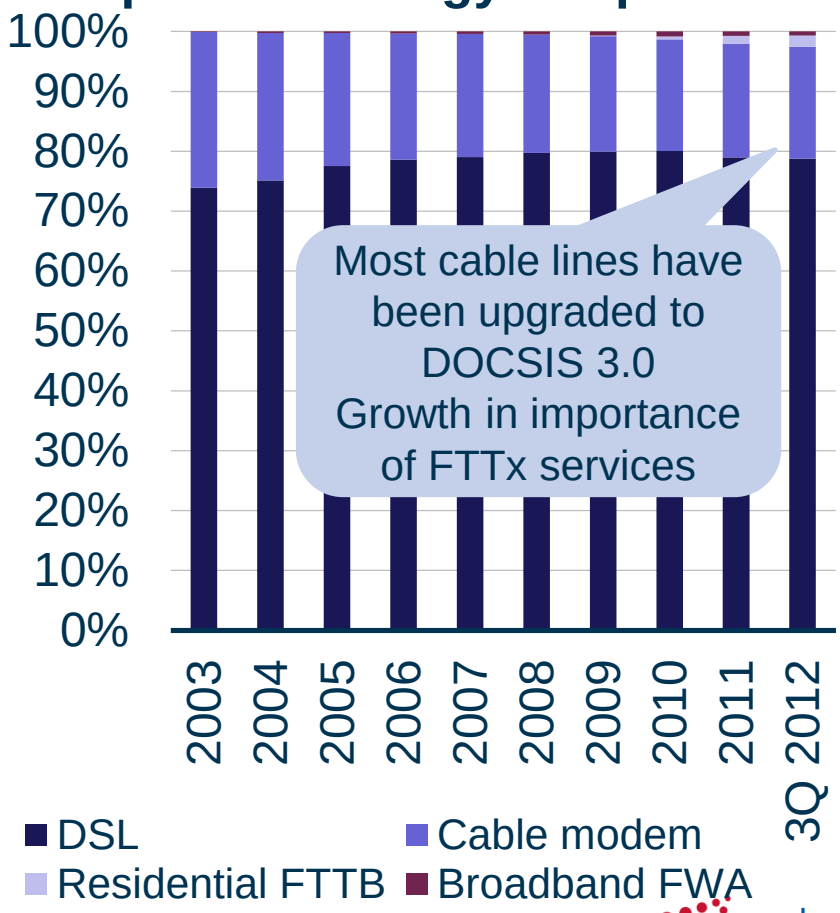
2012

- **Q2.** Orange announces plans to invest 300m EUR in a FTTH nationwide roll-out
- **Q4**. Vertical co-investment agreement between Jazztel and Telefónica

2015

- Orange expects to cover 1.5m households in the major cities

Proportion of broadband lines per technology in Spain



Source: Analysys Mason Research

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Telefónica is also investing on fibre, but it is still behind from OLO's NGA customer base

Telefónica's NGA timeline

2006
- Telefonica provisions 1b EUR for the FTTx network update

2009
- **Q1.** Telefónica slowed its NGA plans because of the recession
- **Q4.** Commercial launch of FTTH services

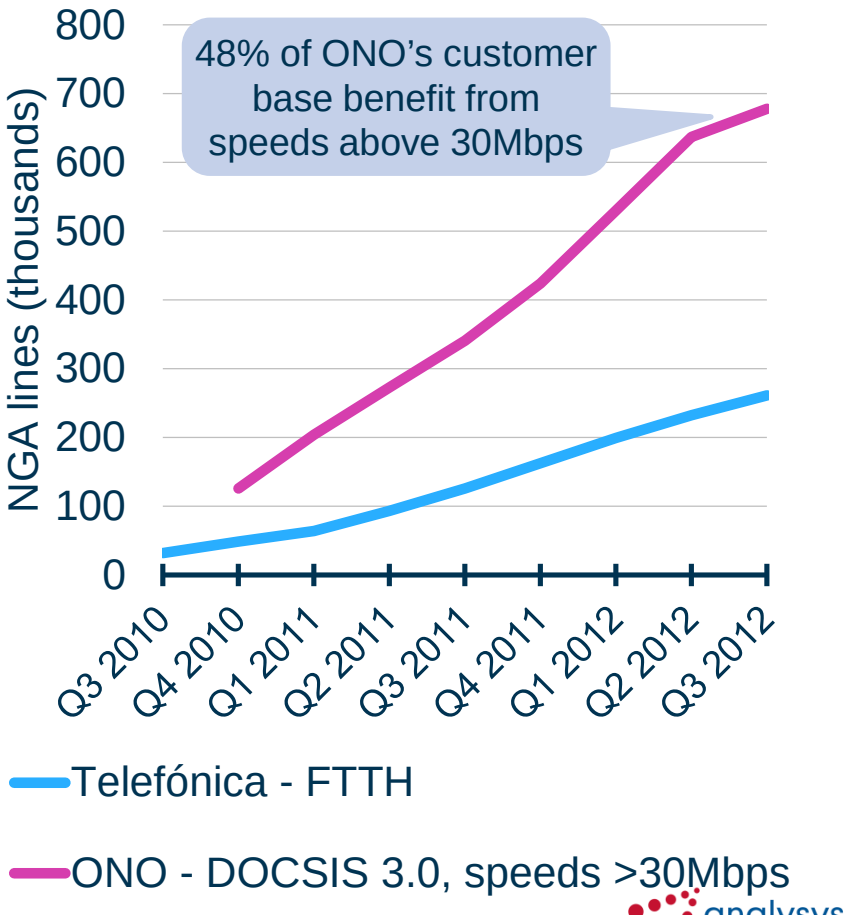
2010
- **Q2.** 300 000 households passed

2011
- **Q1.** Launch of 100 Mbit/s FTTH services

2012
- Telefonica invests 200m EUR in Madrid and 90m EUR in Valencia in its fibre network
- **Q4**. 2.2m households passed and 312k connected households

2015
- BBVA estimates 6.5m households passed

ONO and Telefónica's NGA customer base



Source: CMT Trimestral reports, Telefónica, ONO, BBVA Research Services

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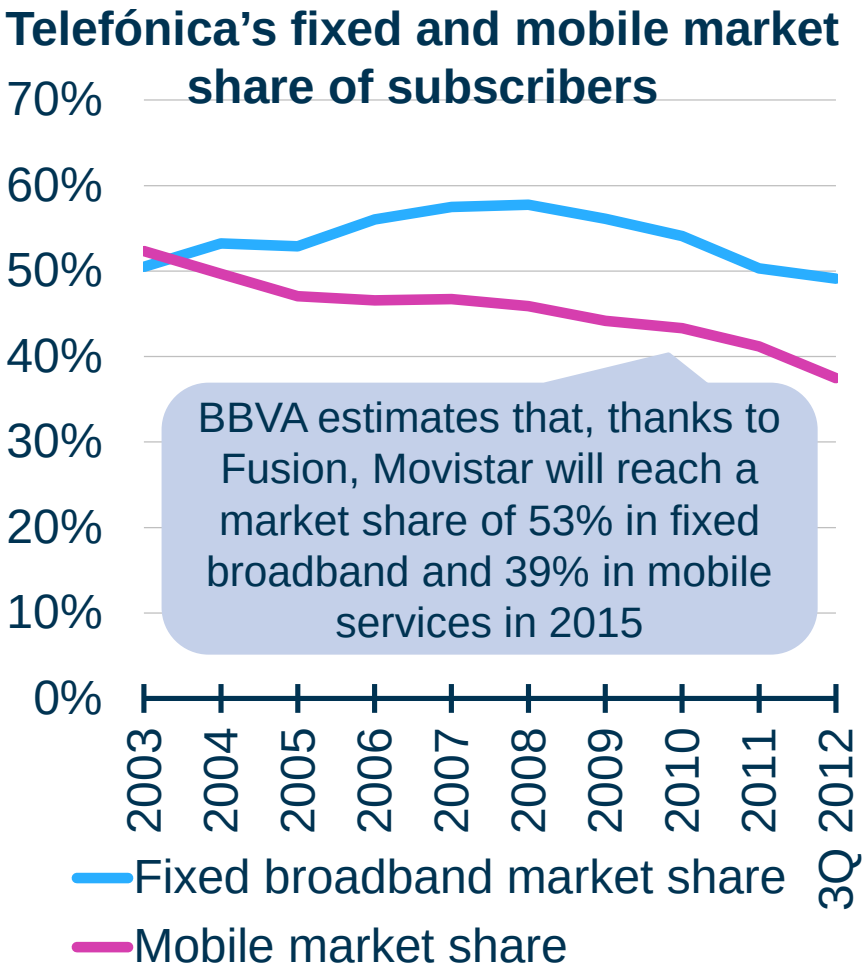
Telefónica has launched a quad-play bundle to offset the loss of market share…

- Movistar commercially launched a quadruple-play package '*Movistar Fusión*' in October 2012
  - *Movistar Fusión* has attained 1.1m customers at the end of January, just three months after the commercial launch of the product
  - more than doubled growth in net additions of fibre subscribers compared to the previous quarter
- Movistar Fusión customers are forecast to grow:
  - BBVA expects 4.4m Fusión customers at the end of 2014
  - BSCH expects 3.9m Fusión customers at the end of 2014



 Source: Analysys Mason Research, BBVA Research Services, Cinco Días

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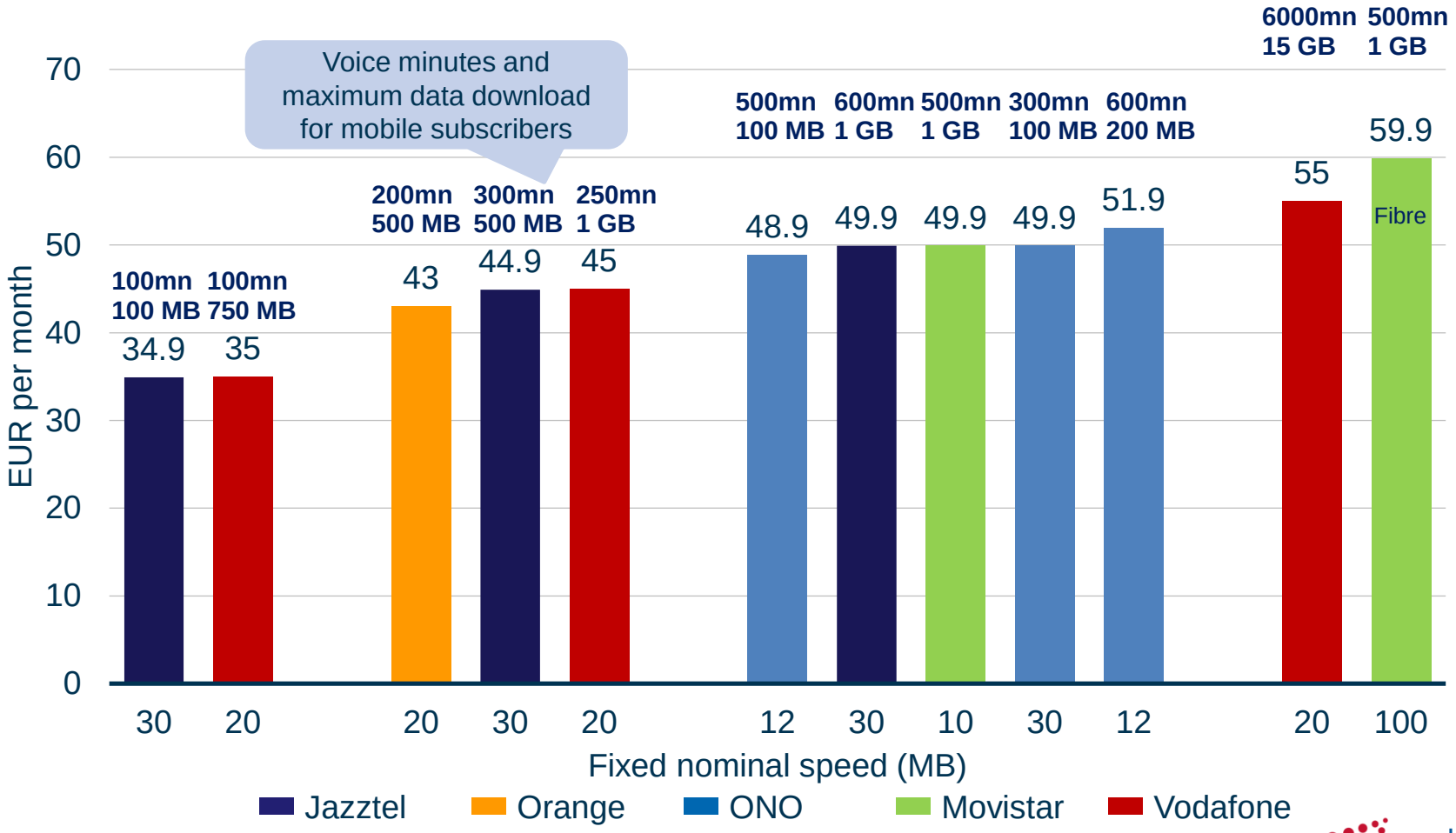
… and so the OLOs do in order to counteract the impact of Movistar Fusión

Quad-play bundle offers in Spain (2012)



Source: BBVA Research Services

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Telefónica is obliged to give access to the loop and passive infrastructure in the copper network…

- In 2009, the CMT reviewed the markets 4 and 5 for Wholesale network infrastructure access and Wholesale broadband access respectively
- The CMT expects to review both markets again in the first half of 2013

Obligations in Market 4 in Spain

FTTH	▪ Operators do not have the obligation to give access to the fibre local loop ▪ However, there are symmetric access obligations in buildings which were not initially built with ICT infrastructure
Legacy copper network	▪ The incumbent operator (Telefónica) is obliged to offer access to: – the copper local loop, i.e. LLU and SLU. (OBA[1]) – passive infrastructure, including ducts and civil infrastructure. (MARCo[2]) ▪ Cost oriented prices
Hybrid network (copper + fibre)	▪ The incumbent operator has the obligation to offer access to the sub local loop, i.e. SLU. (OBA[1]) ▪ Cost oriented prices

[1]OBA (Oferta Bucle Abonado), [2]MARCo (Servicio Mayorista de Acceso a Registro y Conductos)

… and to offer wholesale bitstream services of up to 30 Mbit/s

Obligations in Market 5 in Spain (Wholesale broadband access)

FTTH	■ The incumbent operator (Telefónica) is obliged to offer wholesale bitstream services of up to 30 Mbit/s. (NEBA[1]) ■ Cost oriented prices
Legacy copper network	■ The incumbent operator is obliged to offer wholesale bitstream services of up to 30 Mbit/s. (NEBA[1]) ■ Cost oriented prices
Hybrid network (copper + fibre)	■ The incumbent operator is obliged to offer wholesale bitstream services of up to 30 Mbit/s. (NEBA[1]) ■ Cost oriented prices

[1]*NEBA (Nuevo servicio Ethernet de Banda Ancha)*

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