GRUPPO TELECOM ITALIA

Access network between technology and regulation

The next-generation access network : transition from copper to fiber optics

L'Aquila –January 19th 2011

Gianfranco Ciccarella

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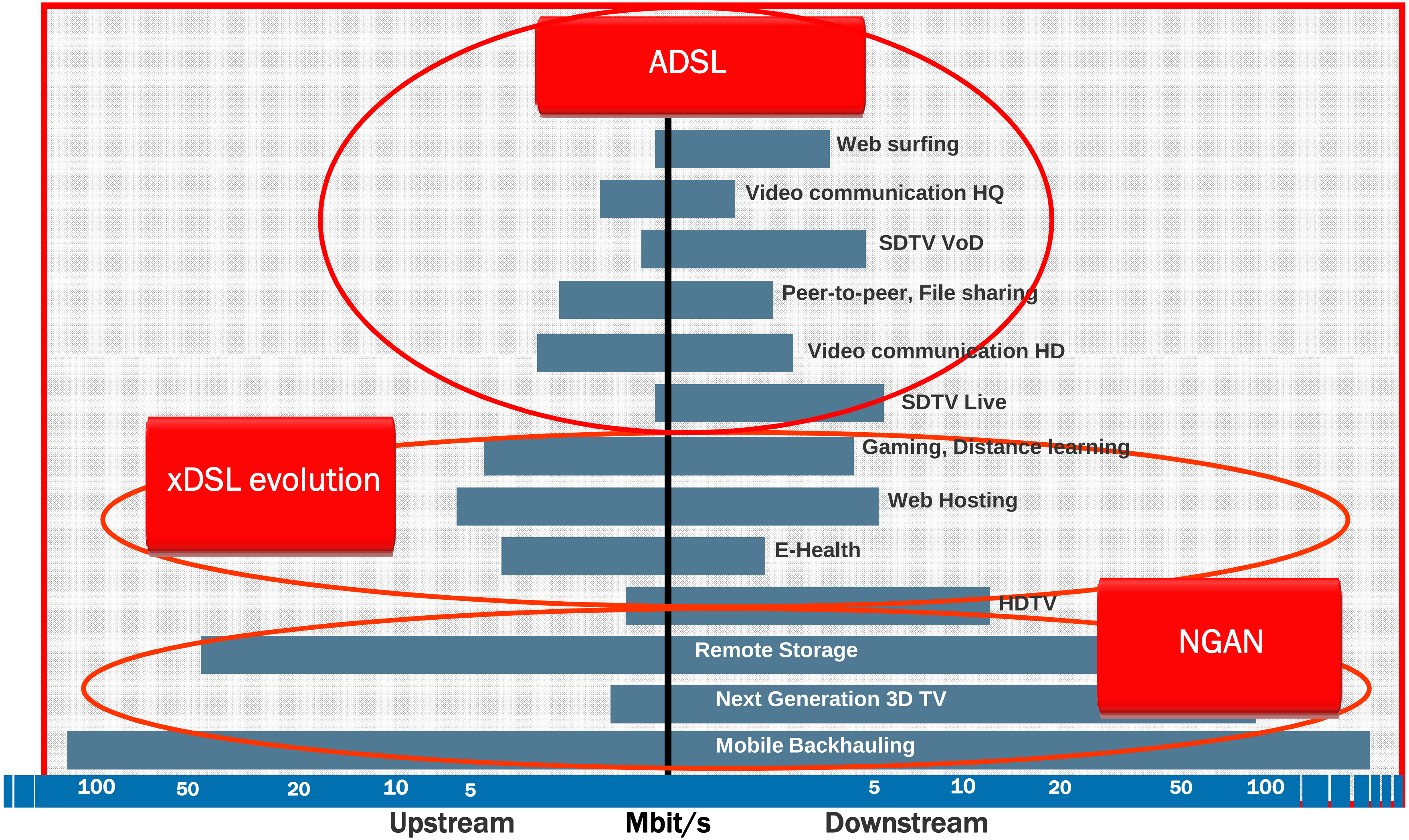
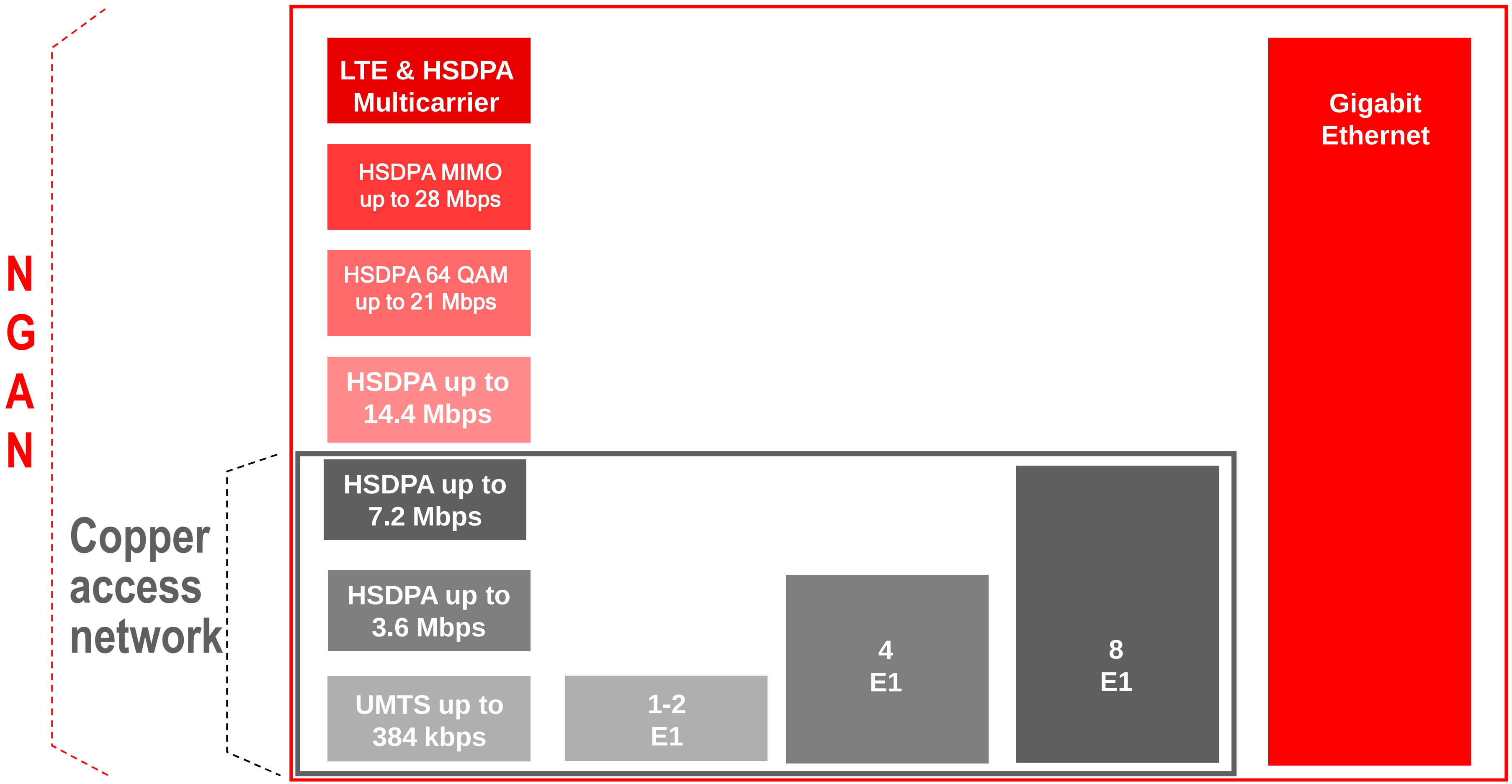
- NGAN Drivers
- Challenges in the deployment process
- Telecom Italia Approach
- Final Remarks

Bandwidth demand... for Services

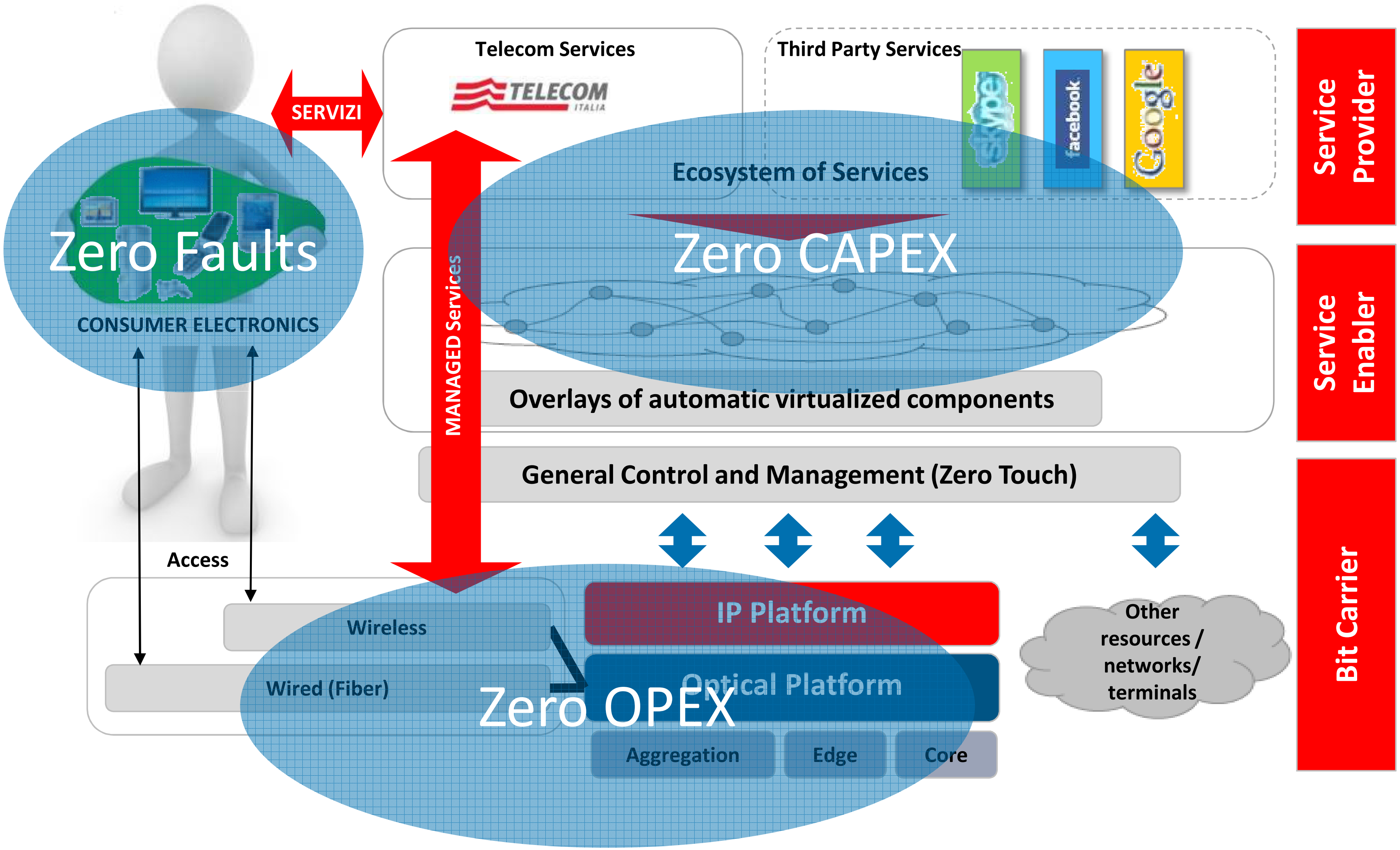


Bandwidth demand... for Mobile

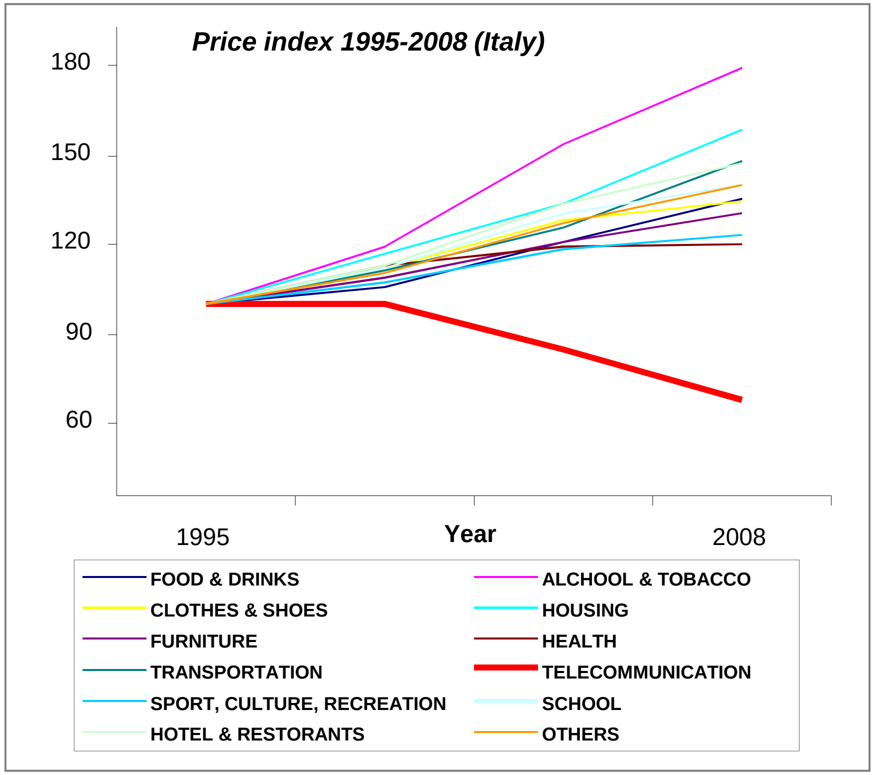
"The backhauling rule": *Ultra-BB mobile services require Ultra-BB fixed network*

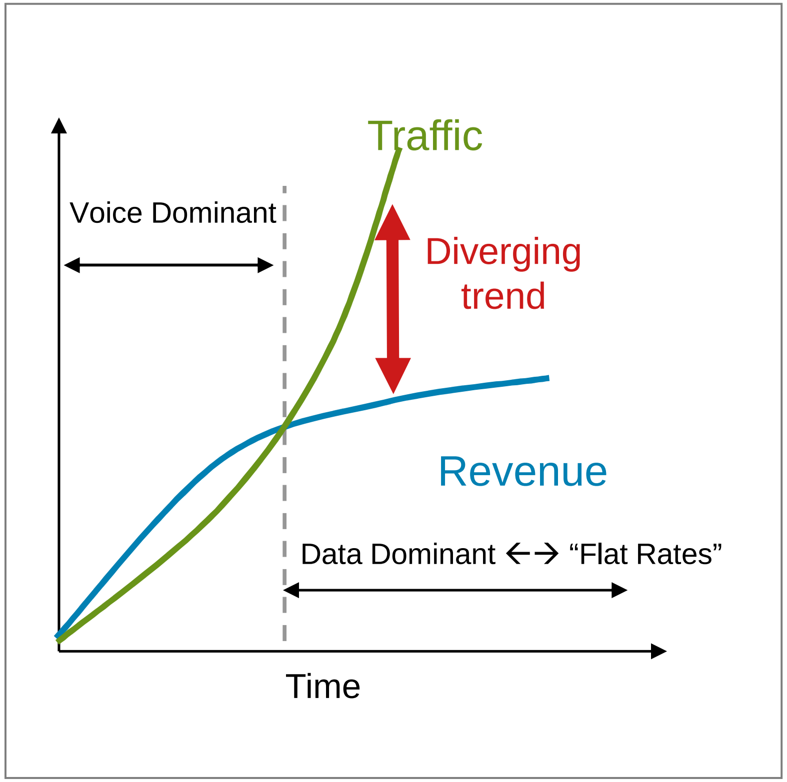


"3-Zeros" Network



Traffic / Costs / Revenues Trends





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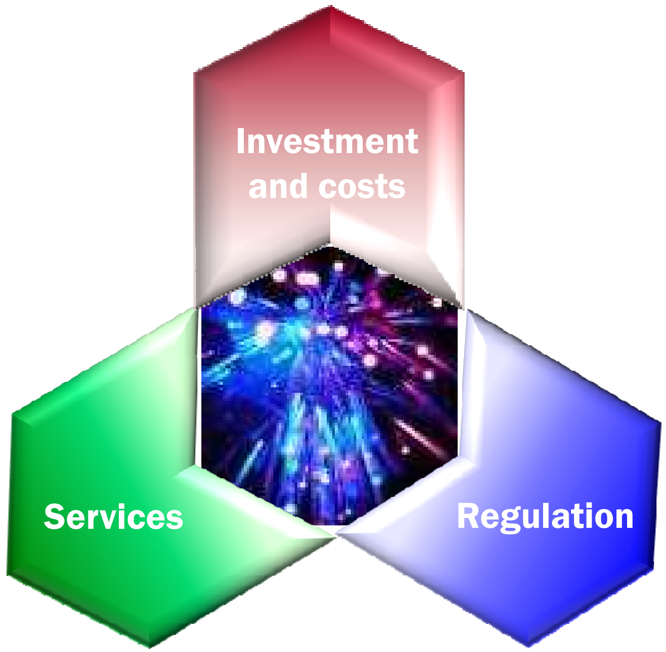
The Fiber dilemma

Fiber access network is the evolutionary path, but…



Focus on **sustainable** deployment

Investment and costs

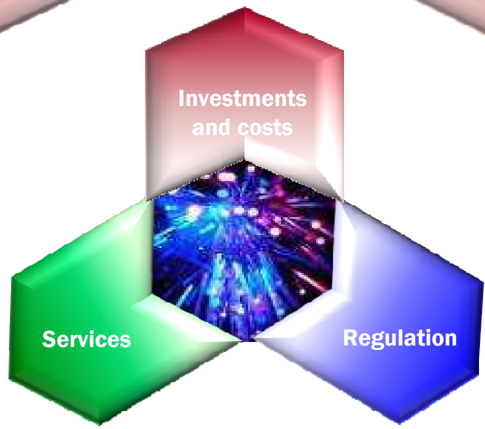
Very huge effort

Long term investment on Access Network

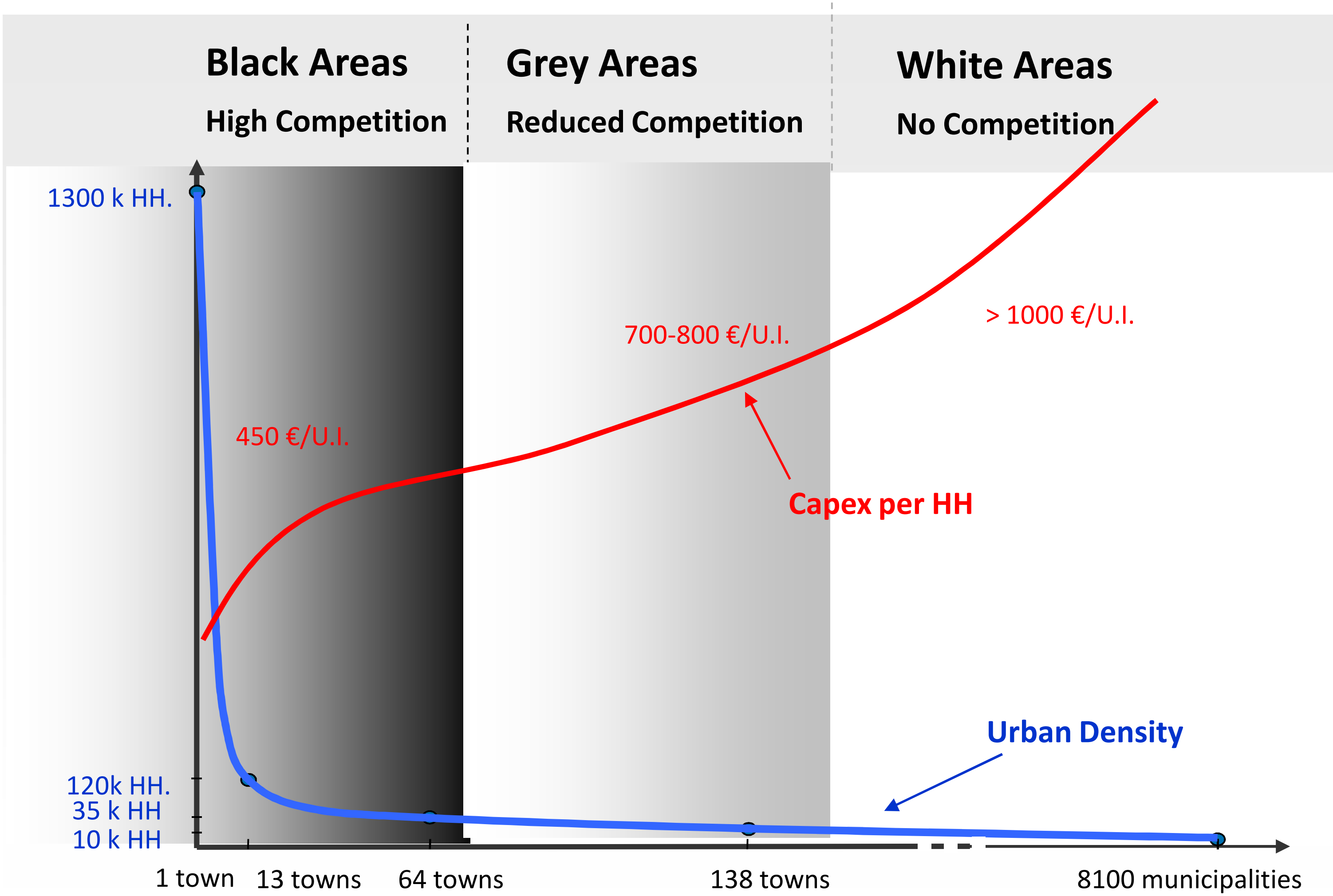
High impact on processes, personnel skills and Systems

High cost of In-Building Cabling

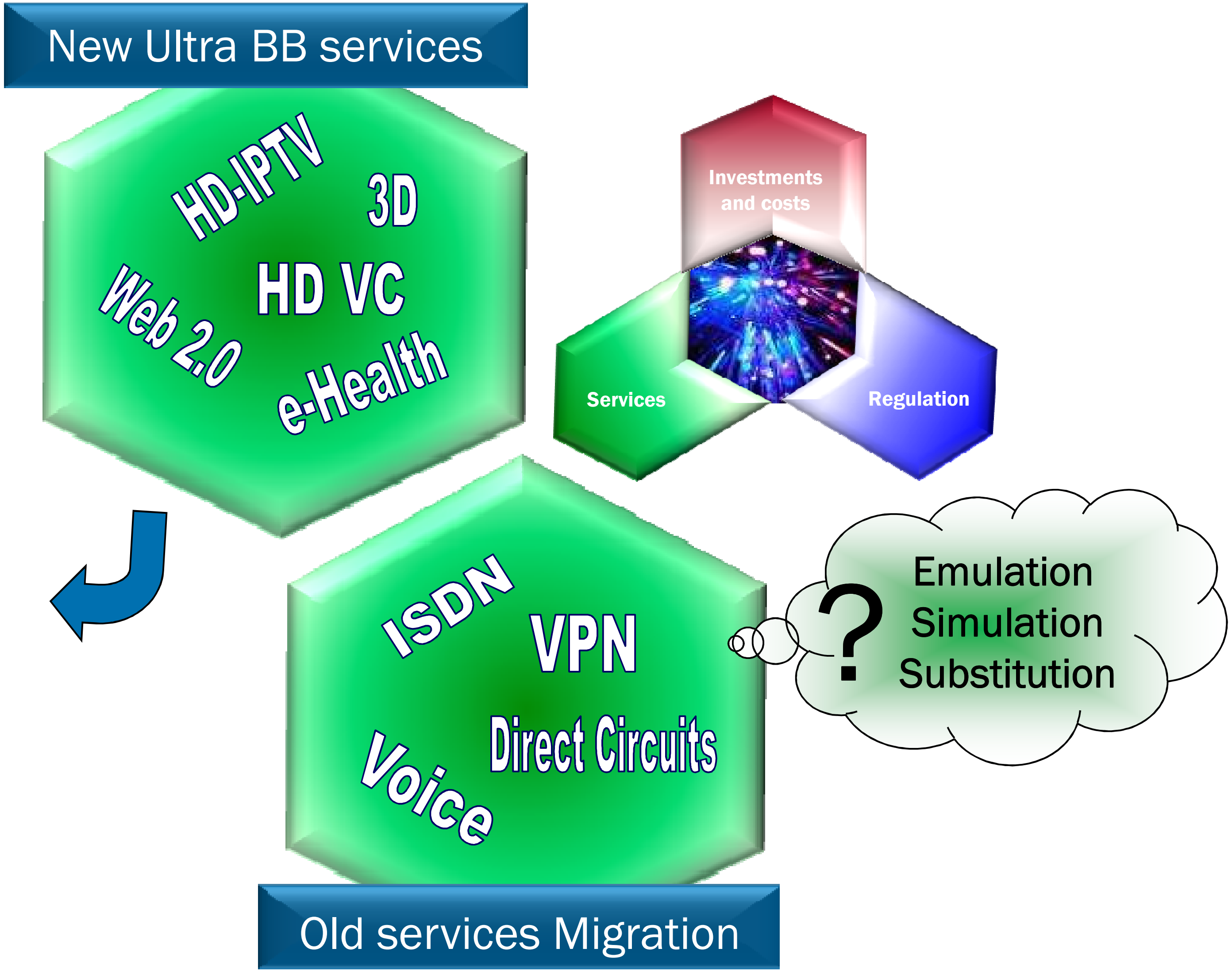
Geographical differentiation



Different costs for different urban area



Services

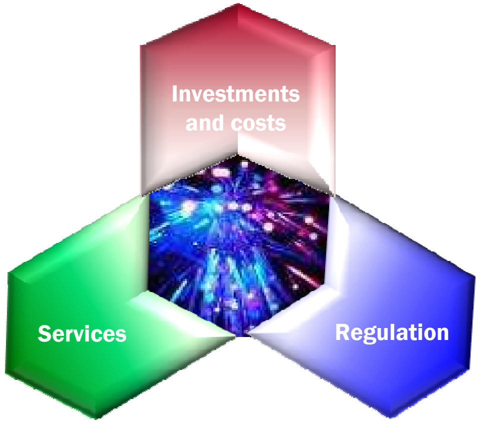


- Demand Uncertainty
- Low Delta ARPU expected
- Huge investments

Very Long term ROI expected

Regulation

Clear regulatory rules are required



Infrastructure competition and co-investment

Geographical differentiation of obligation and pricing

Symmetrical obligation for access to passive infrastructure

Telecom Italia Positioning on regulatory aspect is consistent with EC Recommendation on NGAN

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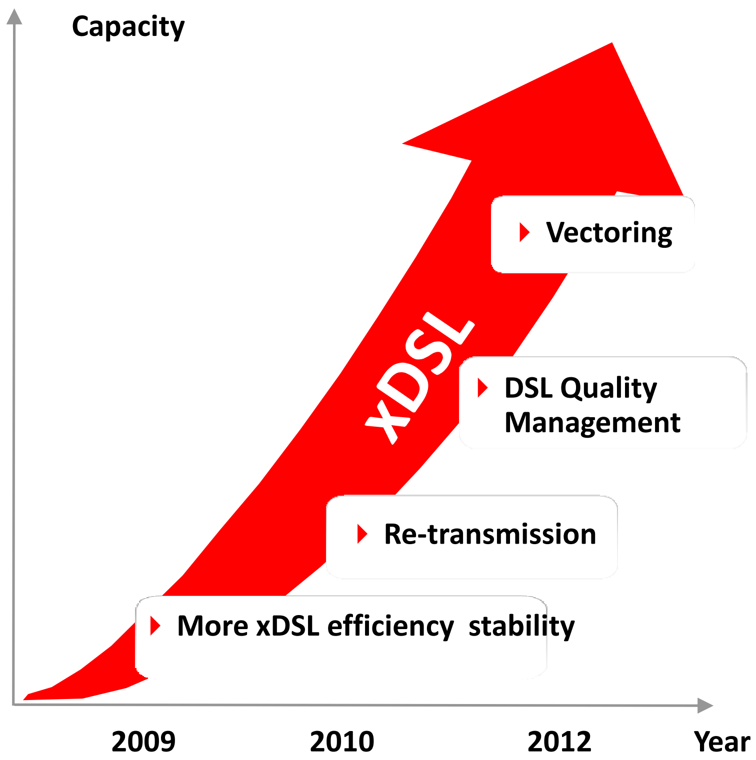
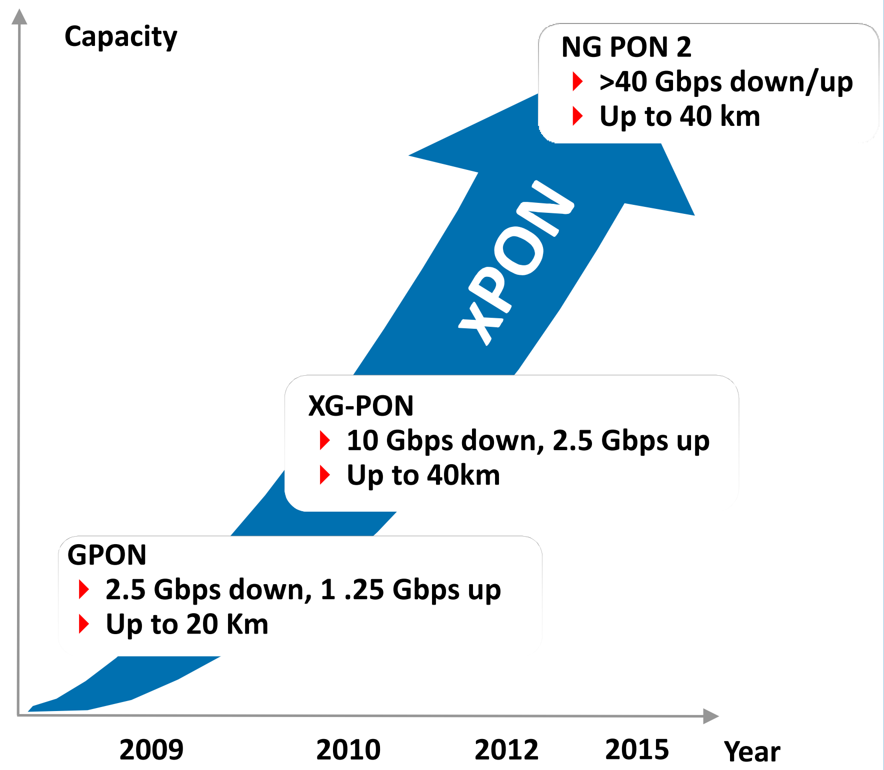
Copper and fiber will co-exist

Broadband evolution



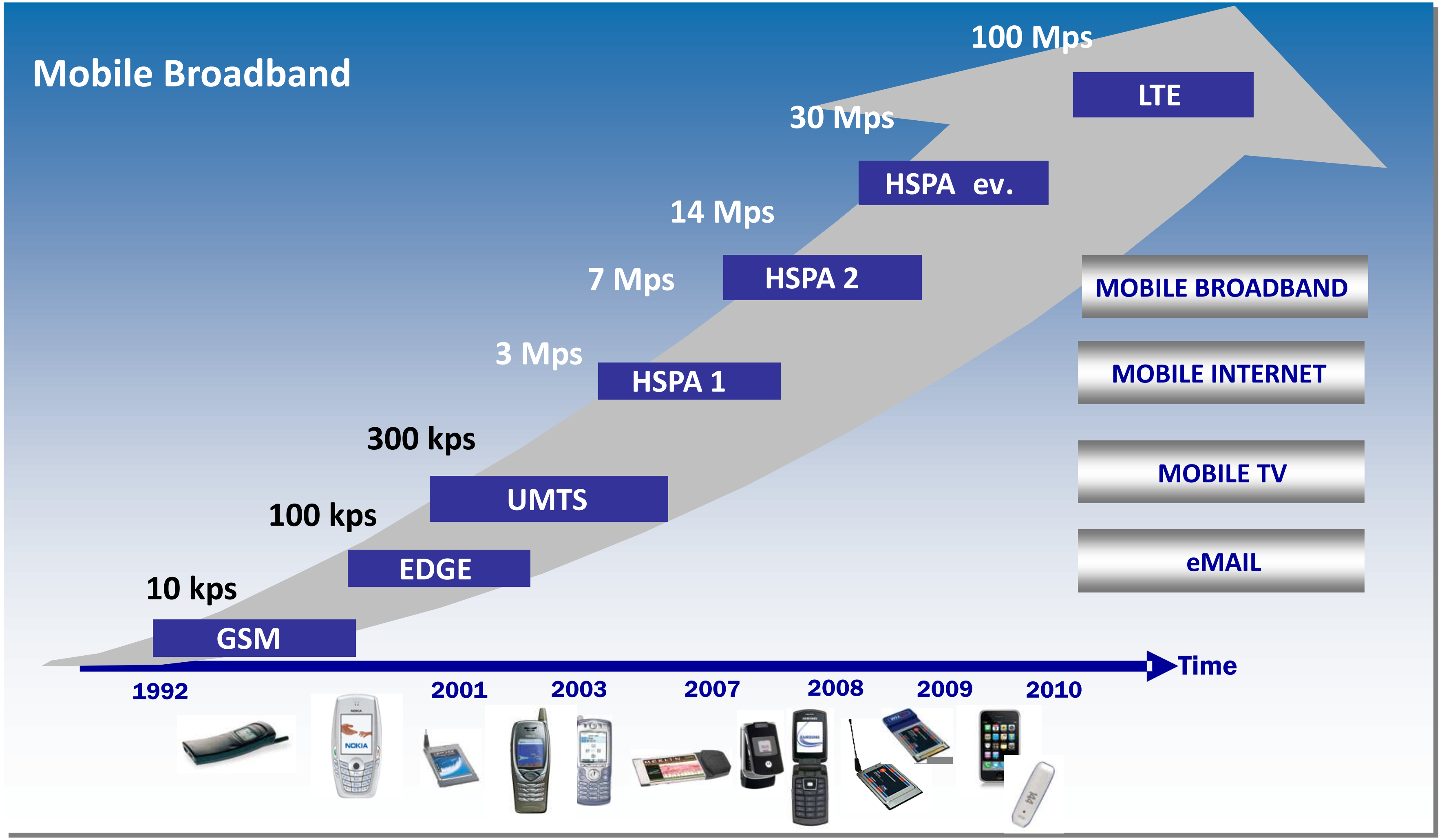
- Copper: increase performance and robustness

Ultra broadband evolution



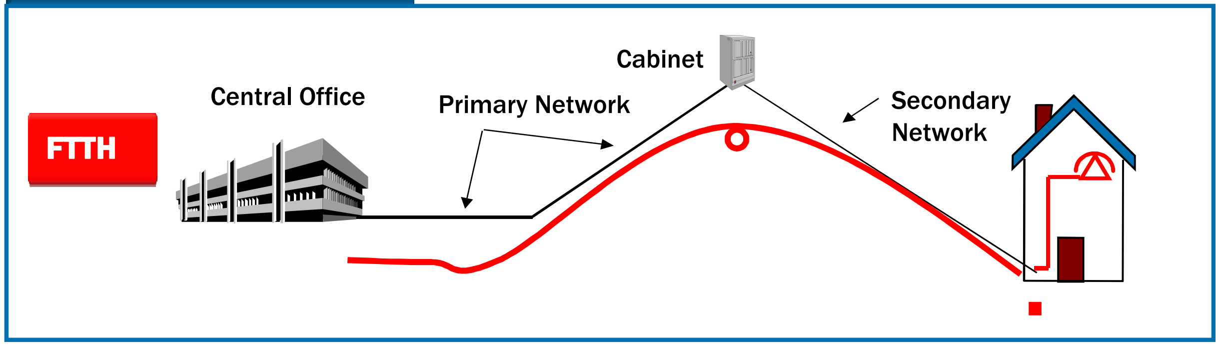
- Fiber: from 100 Mbps to symmetric Gbps

Mobile Access: from BB to UBB

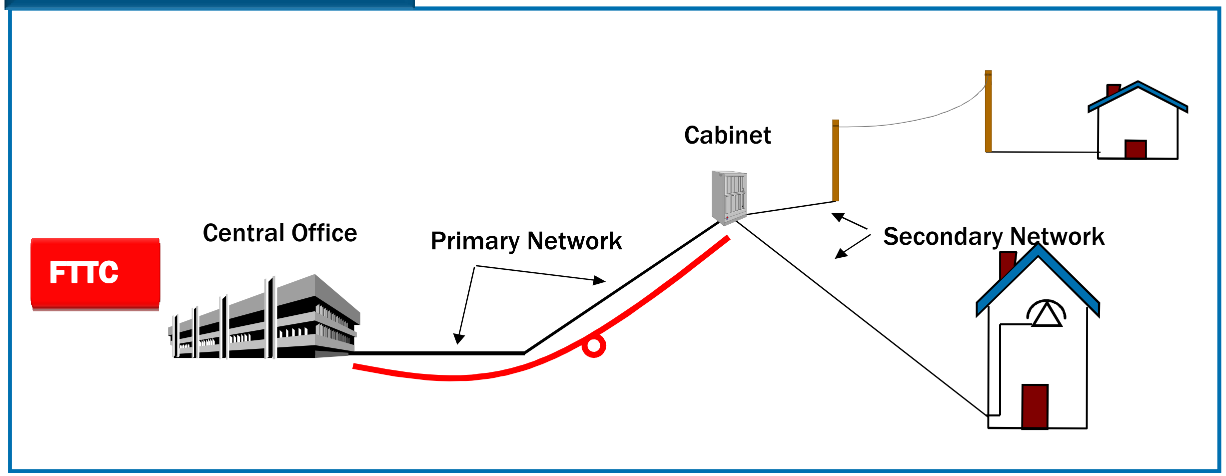


Reference Architecture and Technology

VERY DENSE AREAS

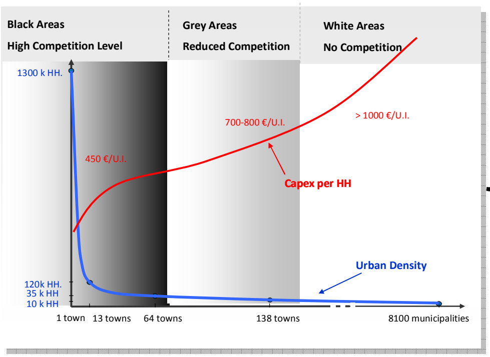


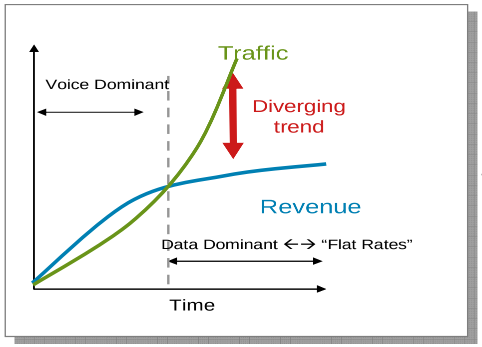
LESS DENSE AREAS

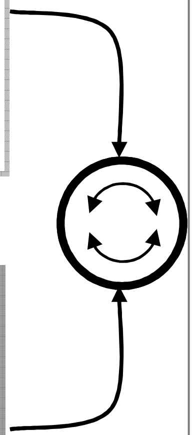


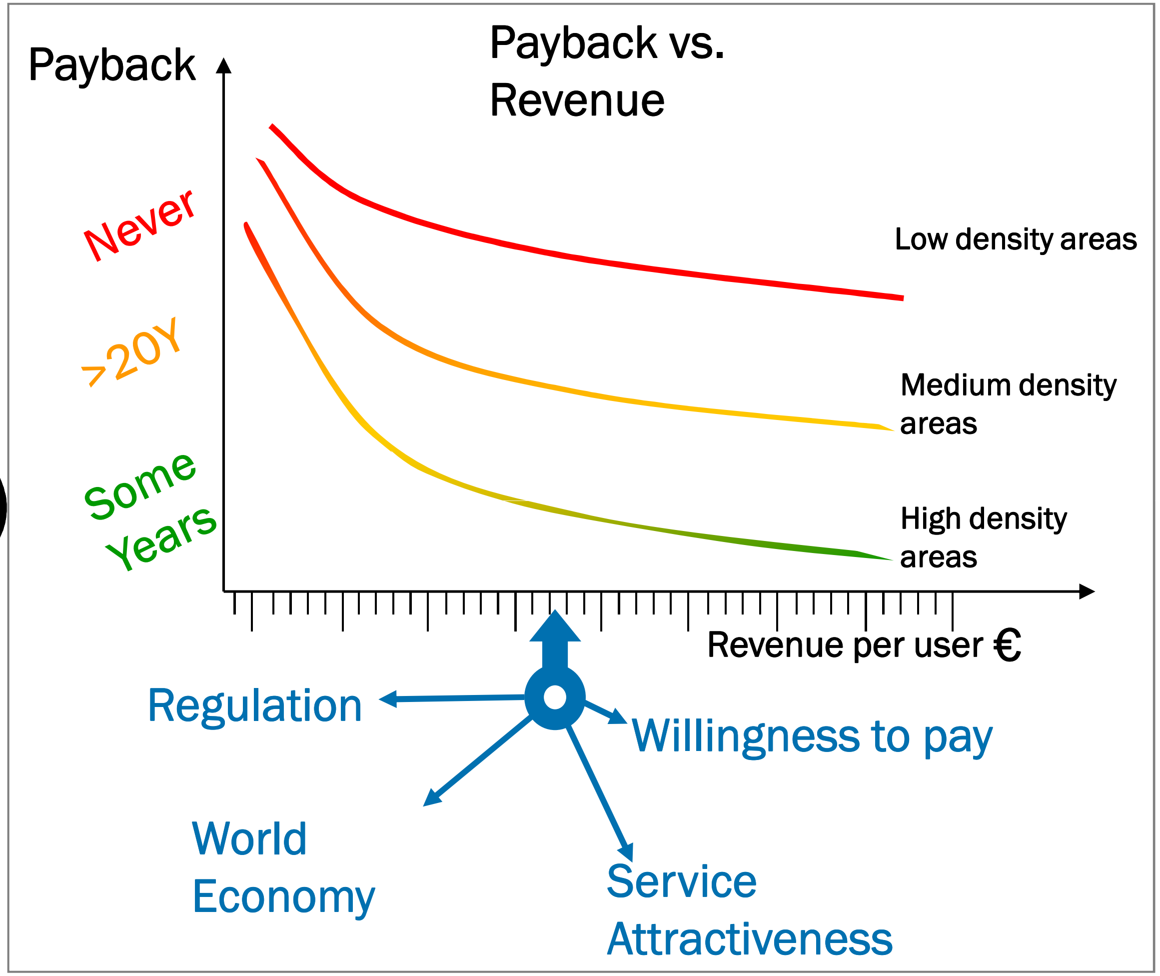
GPON technology

Deployment Sustainability



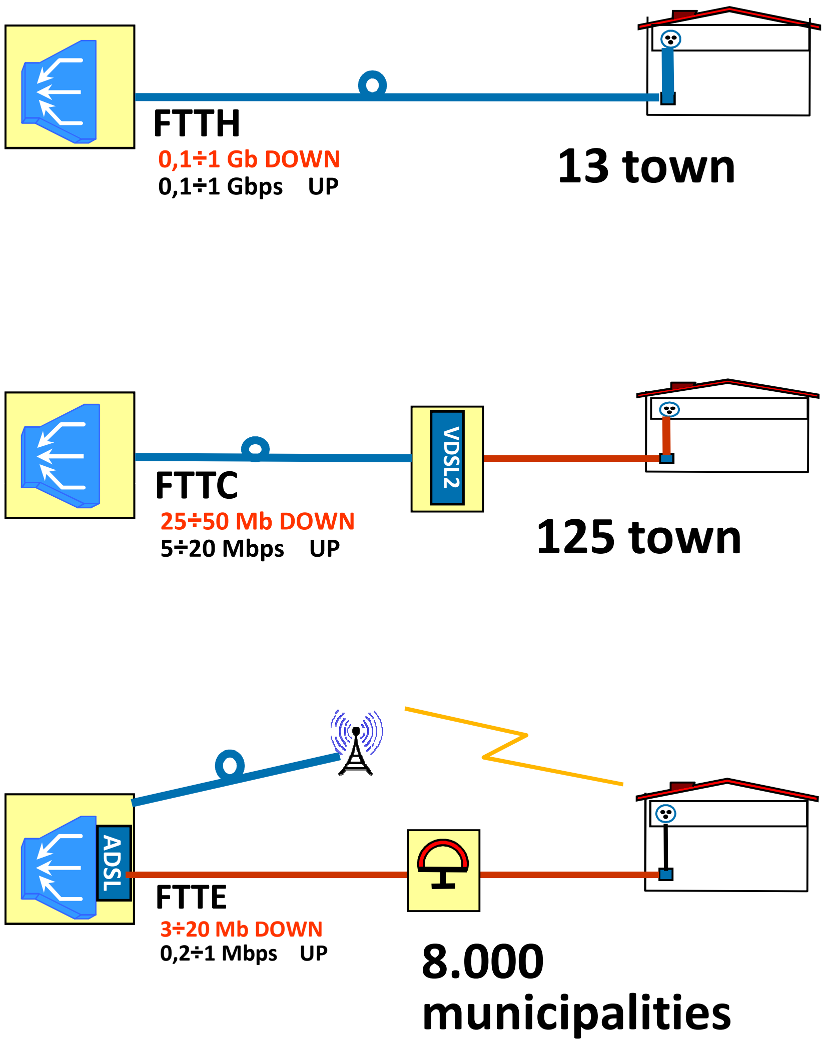






Telecom Italia NGAN Deployment

Fiber Copper

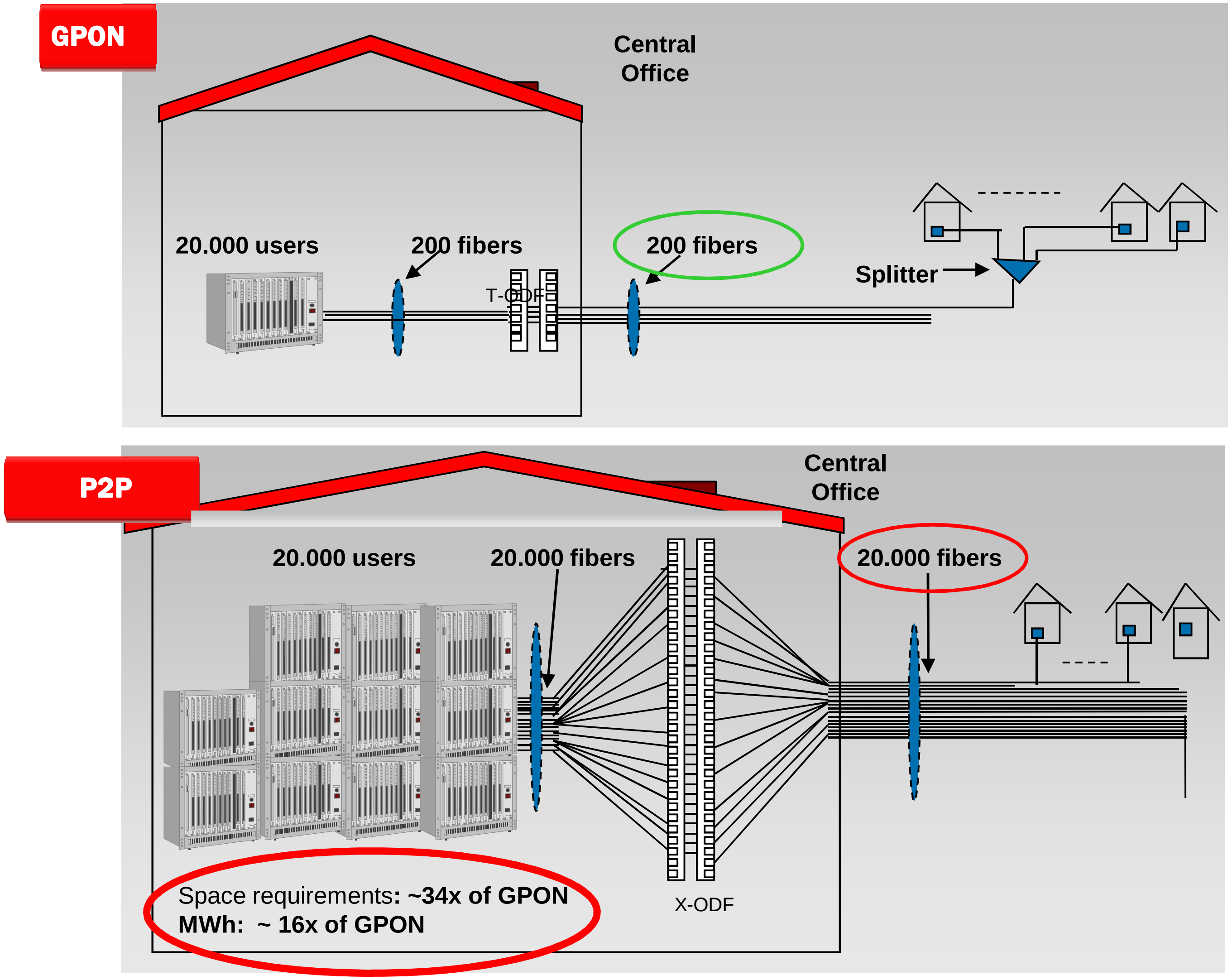


- Start deployment in 13 towns by the 2012:

- Start deployment in 125 towns by the 2018:

- End of Digital Divide
- UBB Mobile solutions

P2P vs GPON



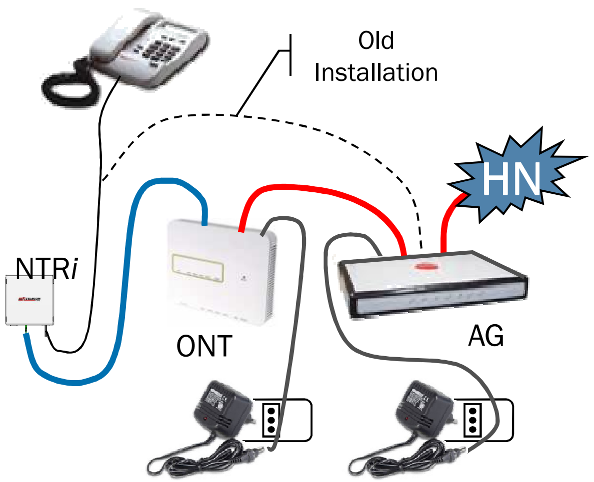
P2P vs GPON

CAPEX Increase (Passive Infrastructure only) in the range +35%-55%

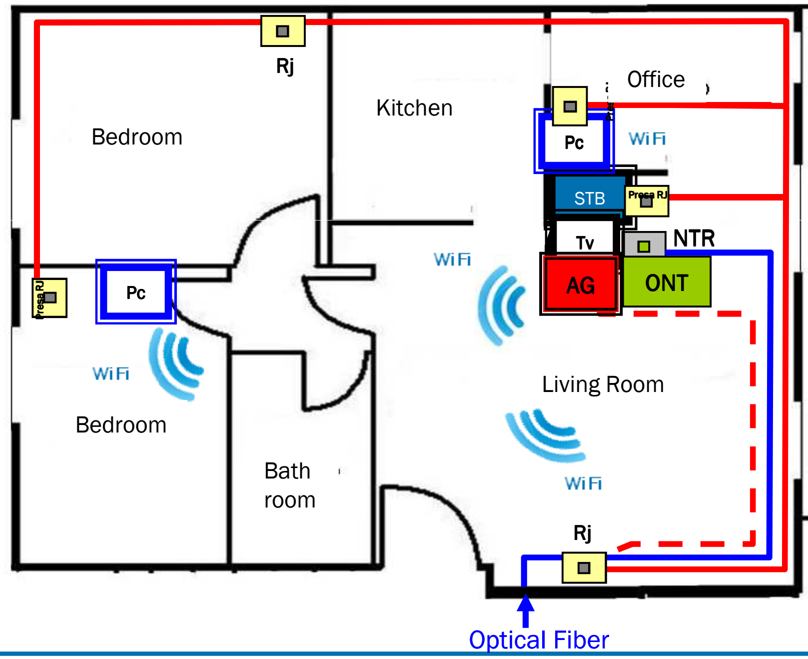
CAPEX Increase (Passive Infrastructure and Equip.) in the range +60-90%

Home Networking

More than one new Home Component



Indoor installation sometimes not so easy…



HN is a very complicated issue to solve for broadband customers …
… and a real challenge to solve for narrowband customers.

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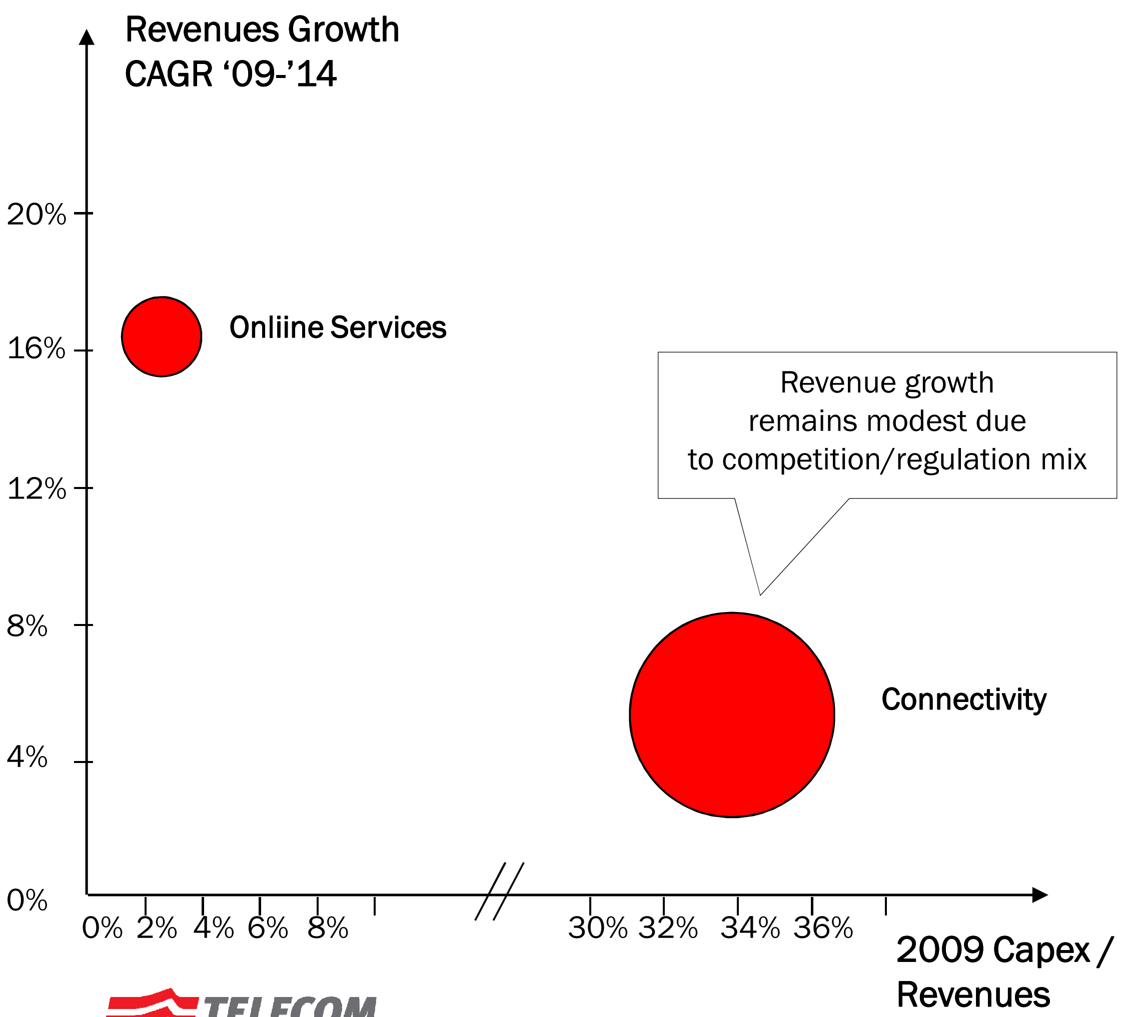
CAPEX intensity vs. revenue growth

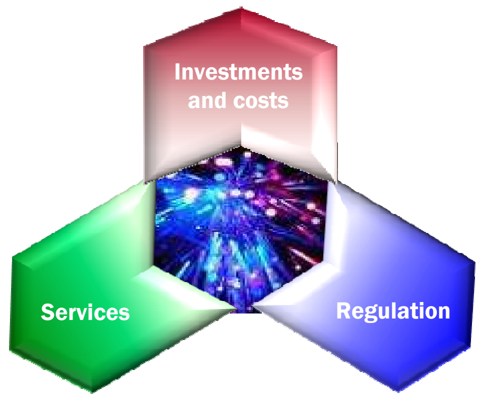


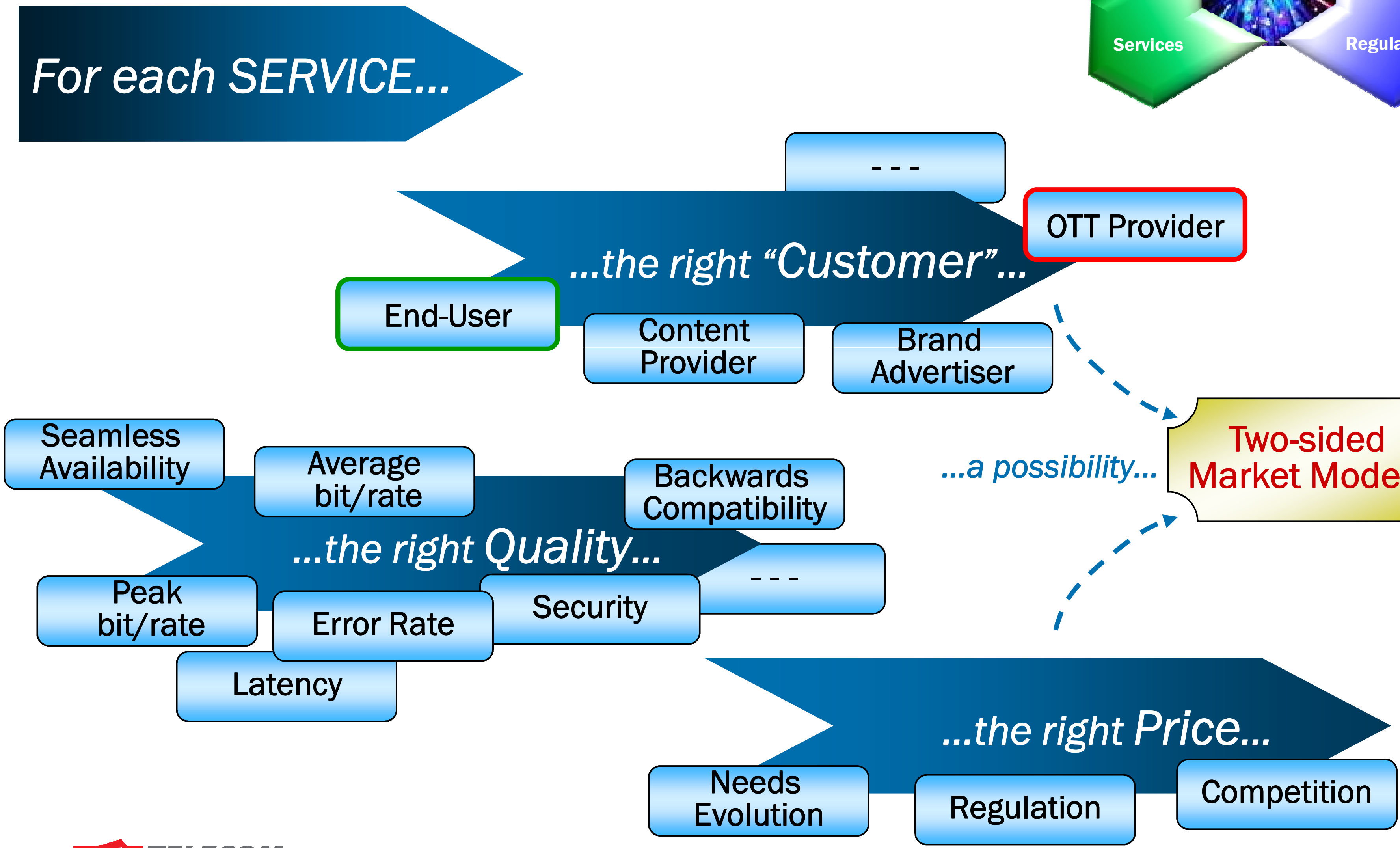
- For connectivity CAPEX intensity remains high driven by usage growth but revenues is stable due to severe price competition and high levels of penetration
- Online Services are expected to see high revenue growth driven by video contents.

2009 value of CAPEX Investment

Bloomberg; A.T. Kearney and TI analysis

→ Focus on sustainable deployment





Internet Access Business Model: a two-sided market