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# **The impact of regulation and the new EU framework on investment in NGN**

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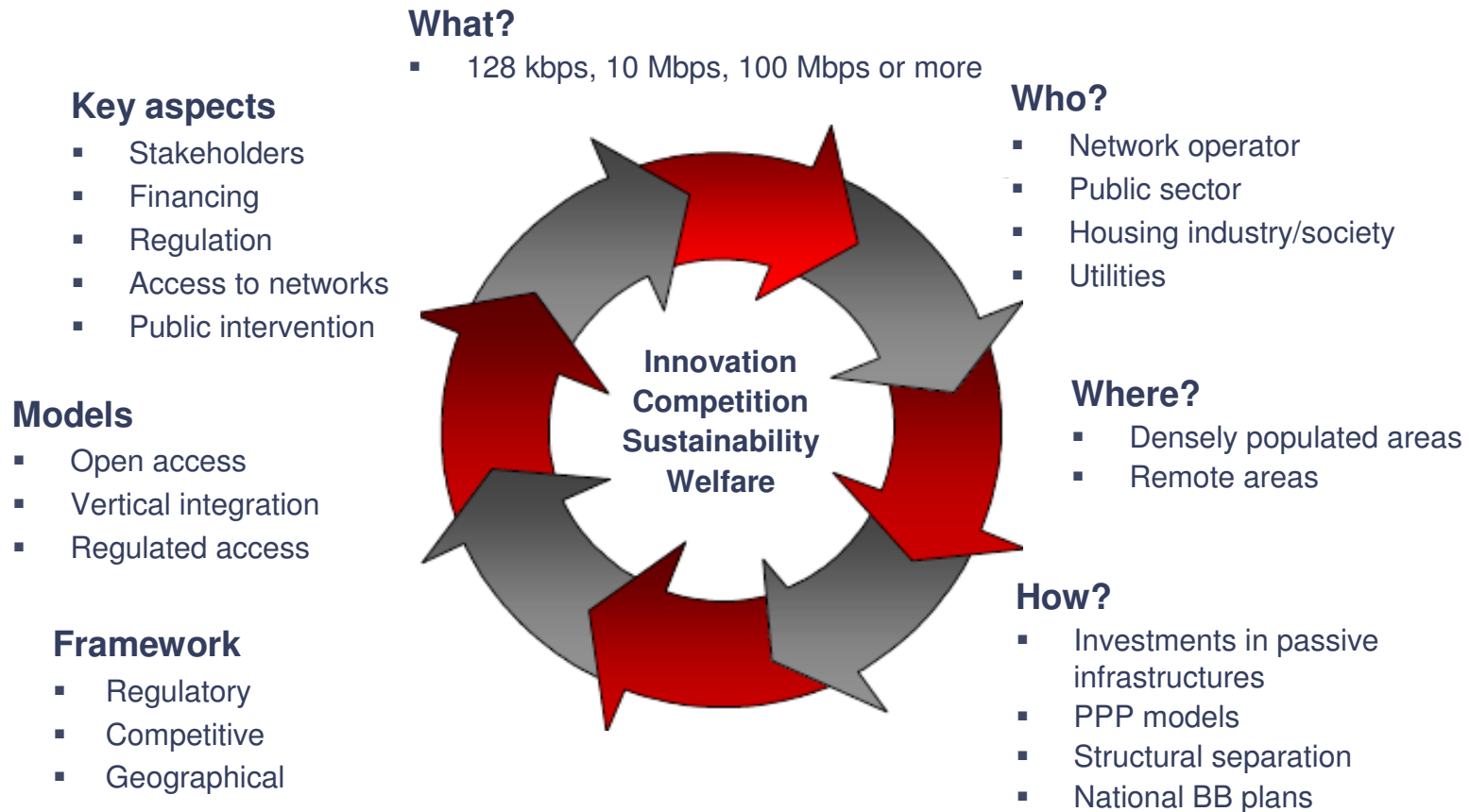
**Paper presented at 8<sup>th</sup> European Telecoms Investment Forum,**

**Vienna, 27–28 January 2011**

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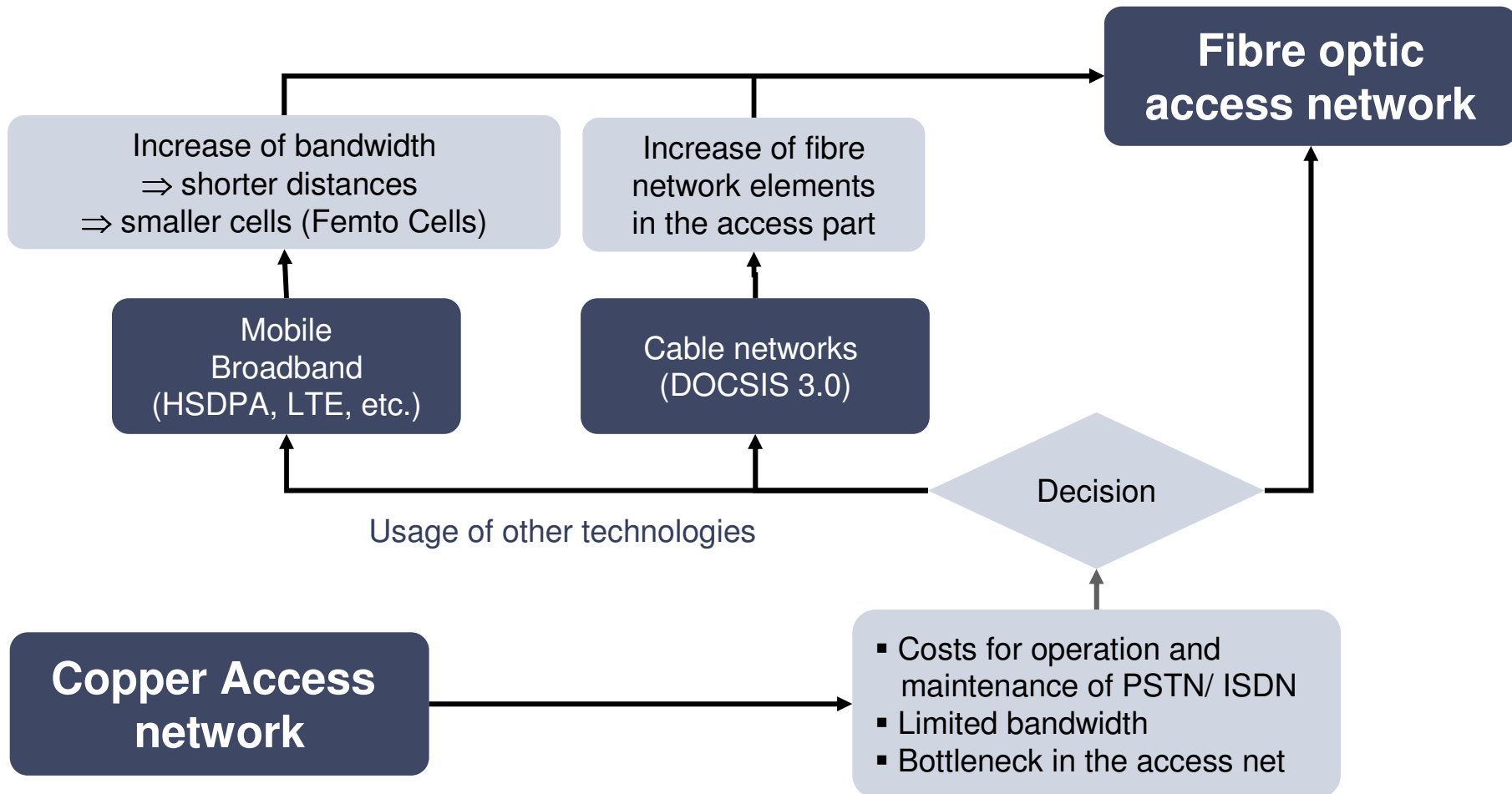
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| <b>1</b> | <b>Background</b>                                      |
| <b>2</b> | <b>Realization Concepts and investments undertaken</b> |
| <b>3</b> | <b>Impact of regulation</b>                            |
| <b>4</b> | <b>Austrian and CEE Broadband Markets</b>              |
| <b>5</b> | <b>Concluding remarks</b>                              |

# The Broadband Investment Discussion

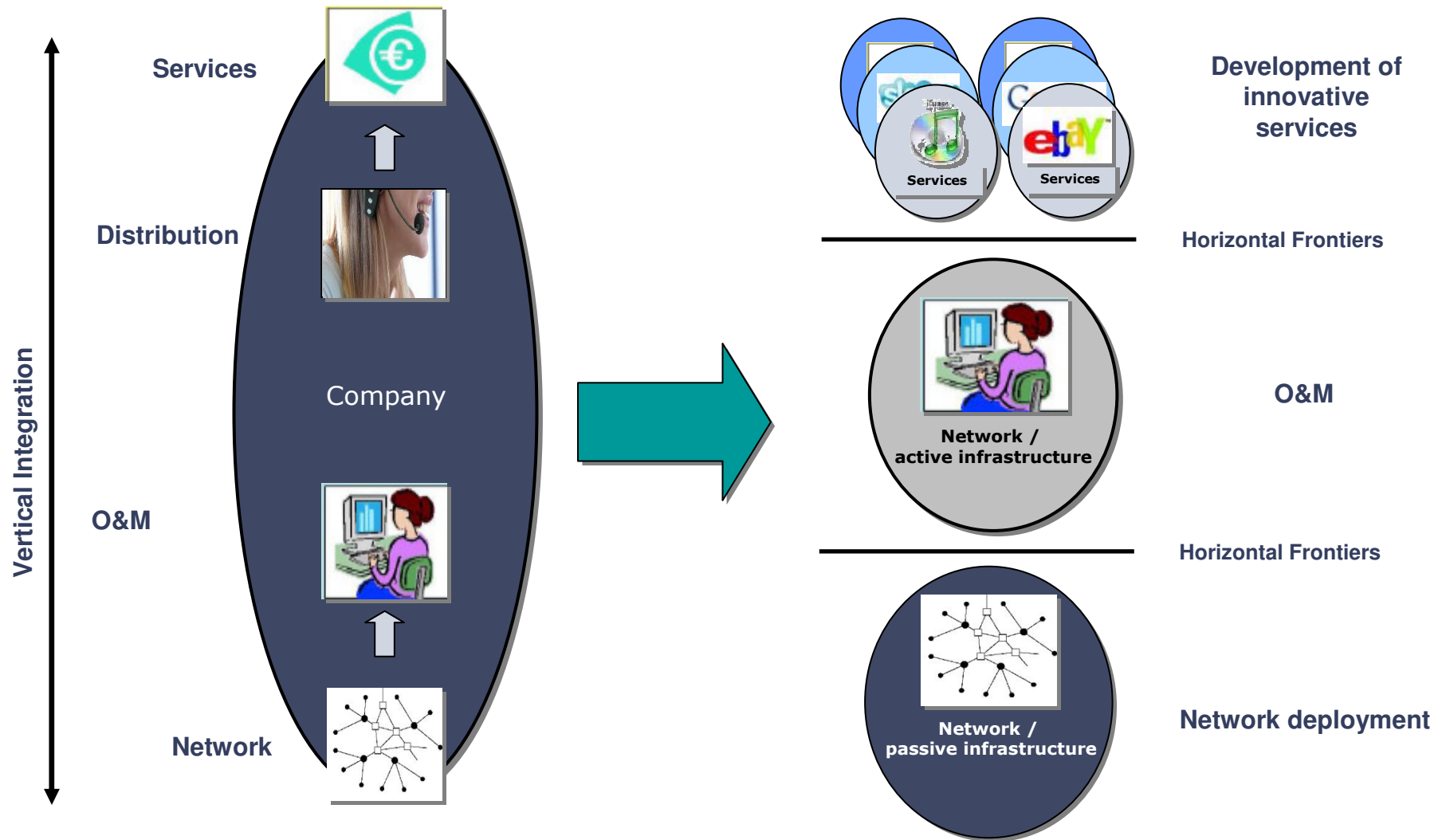


NGN/NGA regulatory challenge: balancing investment incentives and competition

# From Copper to Fiber



# Change in Business Models

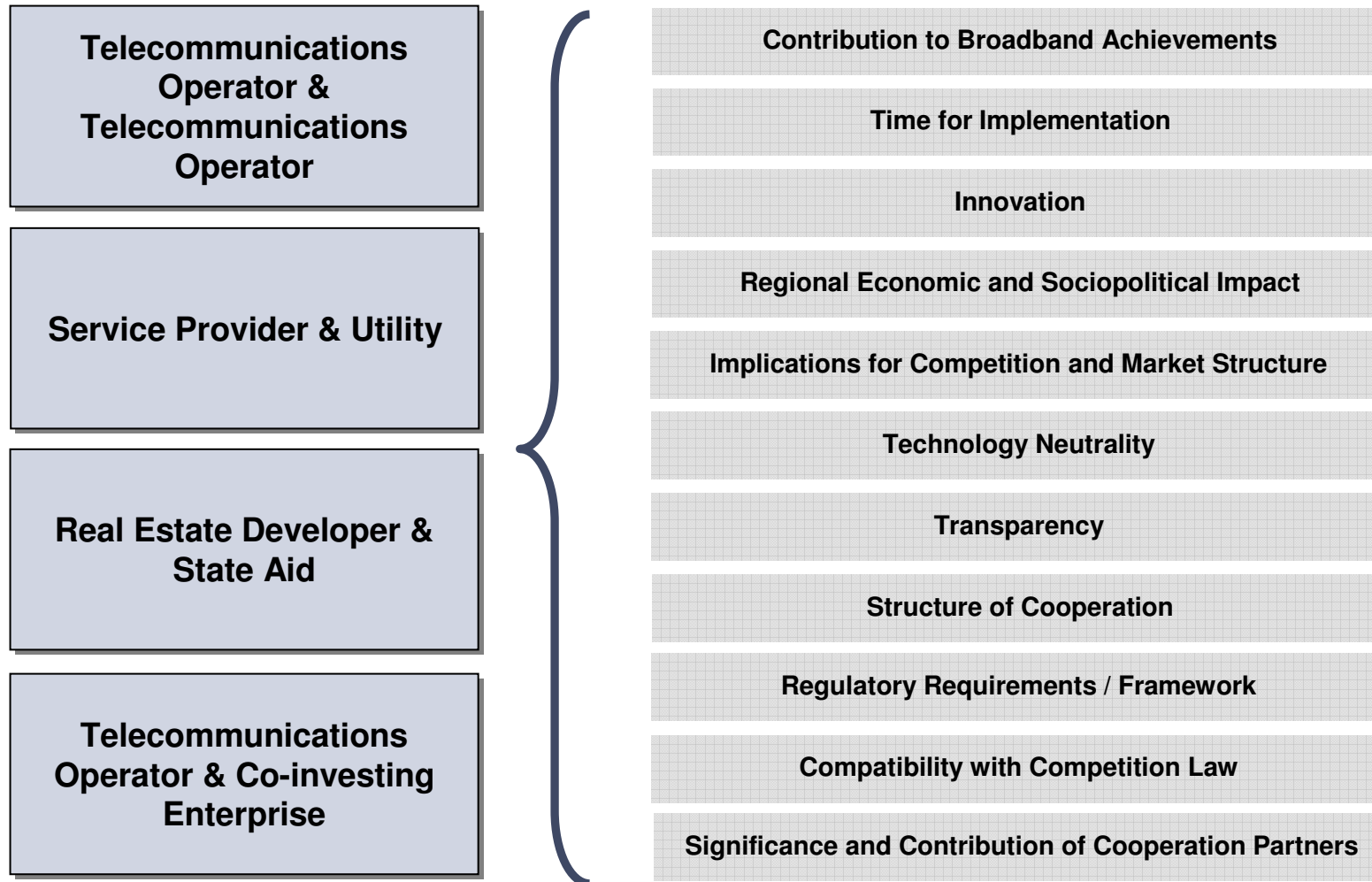


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# Who is Investing?

- Private investments only takes place if the business case is positive or for strategic reasons
- Private customers are not (yet) demanding fiber access ...
- ... but public welfare of broadband is undisputed!
- Therefore countries are financing NGN/NGA through:
  - National or EU public funding programs
  - PPP
  - Proceeds from the digital dividend (Finland, UK)
  - Special funds on PSTN lines (UK)
- Insufficient → the Broadband penetration gap between EU and Asia / USA is not closing
- Other countries (Australia, New Zealand, Singapore, Korea, Japan) have an even stronger public involvement in network rollout

# Possible Cooperation Models & Drivers



# International Experiences (non-Telcos)

| Project        | City / Country            | Business Model      | Financing              |
|----------------|---------------------------|---------------------|------------------------|
| NextGenNBN     | Singapur                  | Open Access         | PPP                    |
| ndix           | The Netherlands / Germany | Open Access         | Financial Institutions |
| AB Stokab      | Stockholm                 | Dark Fiber          | City                   |
| Ruhrpower      | Schwerte (Germany)        | Vertical Integrated | Utility                |
| CityNet        | Amsterdam                 | Open Access         | PPP                    |
| Mälarenergi    | Västeras (Sweden)         | Open Access         | Utility                |
| Nuenen         | Nuenen (The Netherlands)  | Vertical Integrated | Private                |
| HeliNet        | Hamm (Germany)            | Vertical Integrated | Utility                |
| Burlington     | Burlington (USA)          | Vertical Integrated | City                   |
| Monticello     | Monticello (USA)          | Open Access         | City                   |
| Aurora         | Whittlesea (Australia)    | Vertical Integrated | Housing Society        |
| Hauts-de-Seine | Ile de France (France)    | Vertical Integrated | Enterprises            |
| Blizznet       | Vienna                    | Open Access         | Utility                |

# Investment Drivers

- The following investment drivers have been identified in telecommunications:

|                          |   |                                      |                             |
|--------------------------|---|--------------------------------------|-----------------------------|
| <b>Primary Drivers</b>   | Level of expected returns                             |                                      |                             |
|                          | Risk and uncertainty associated with expected returns |                                      |                             |
| <b>Secondary Drivers</b> | <b>Economy-wide</b>                                   | <b>Industry-specific</b>             | <b>Company-specific</b>     |
|                          | GDP per capita  | Regulation by NRA                    | Cost of capital             |
|                          | Demographic/geographic characteristics                | Competition                          | Credit rating & debt levels |
|                          | Economic cycle (financial bubble)                     | Technological progress               | Take-overs and mergers      |
|                          | General regulation (not sector-specific)              | Demand for E-communications services | Company performance         |

Source: London Economics, for the EC 2006

- Regarding the impact from the European regulation, this is a debated issue and results are heterogeneous \*
  - Hypothesis 1: Long term investment by regulated operators decline but are offset by higher investments by new entrants
  - Hypothesis 2: Investments by SMP operators decline but are not offset by new entrants
  - Hypothesis 3: Increased competition fostered by regulation increases investments by all operators

\* Source: For an overview, see M. Lundborg in: „Promoting new telecom infrastructures“, ed.: M Falch and J Markendahl, 2010

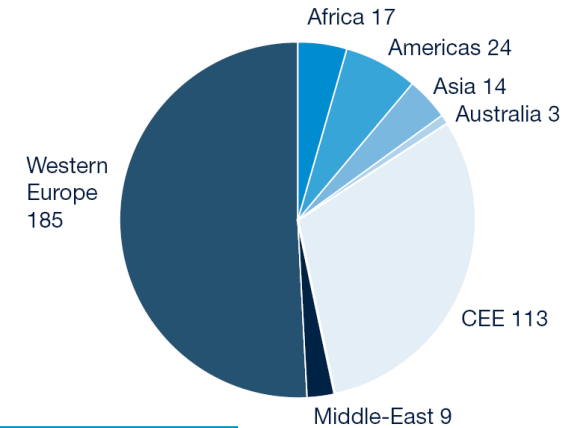
# Financial Scope vs. Realization

| Institutions             | Funds        | Infrastructure Deployment | Network Operation |
|--------------------------|--------------|---------------------------|-------------------|
| Banks & Savings Banks    | Debt capital | NO                        | NO                |
| Private Investments      | Equity       | NO                        | NO                |
| "State Aid" Banks        | Debt capital | NO                        | NO                |
| Telecom Operators        | Equity       | YES                       | YES               |
| PPP-Models               | Both         | NO                        | YES               |
| Public Spending Programs | Debt capital | NO                        | NO                |
| Cities & Municipalities  | Debt capital | YES                       | YES               |

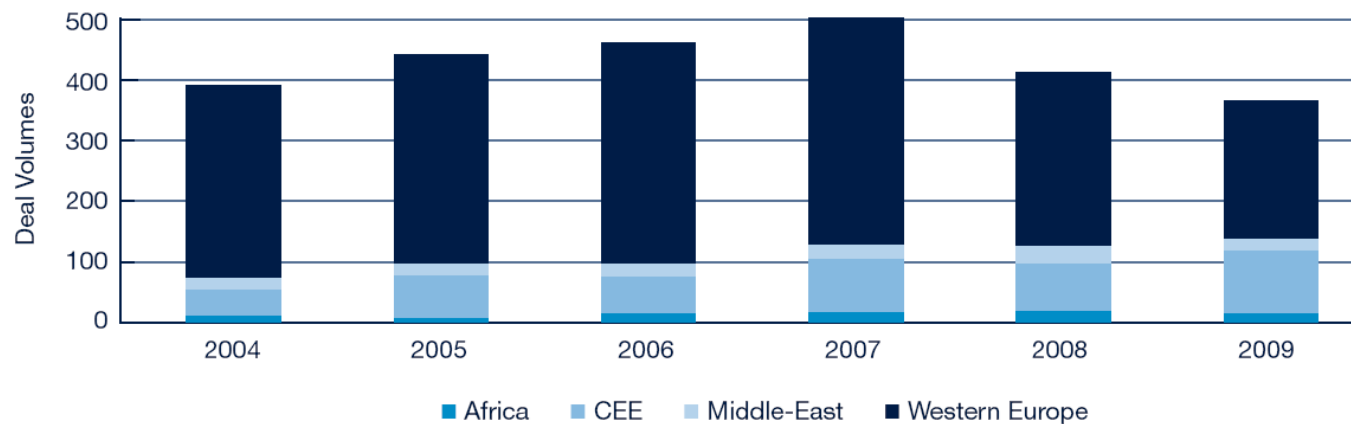
# Investment Trends

## EMEA telecoms deals per target region in 2009

- The CEE region is growing, but is still behind Western Europe when it comes to the number of deals and the deal volumes.



## EMEA telecoms deals per acquirer region



Source: PWC M&A Deals 2010

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# General Regulatory Situation in the EU

## Regulation to enable competition

- Includes access regulation, price regulation, non-discrimination obligations, transparency obligations, accounting separation obligations and structural separation (as a new element of the EU 2010 framework)
- Implemented only for operators with significant market power (approx. more than 40-50 %; market/negotiating power, non-duplicable resources)
- In the past only for former state-owned monopolies

## Network Neutrality

- Large discussions coming from the US covering equal treatment of internet traffic, end users, end user equipment and application providers.
- EU relies on its competition regulation but has added some lightweight transparency obligations with the revised EU Telecoms Package from 12/2009

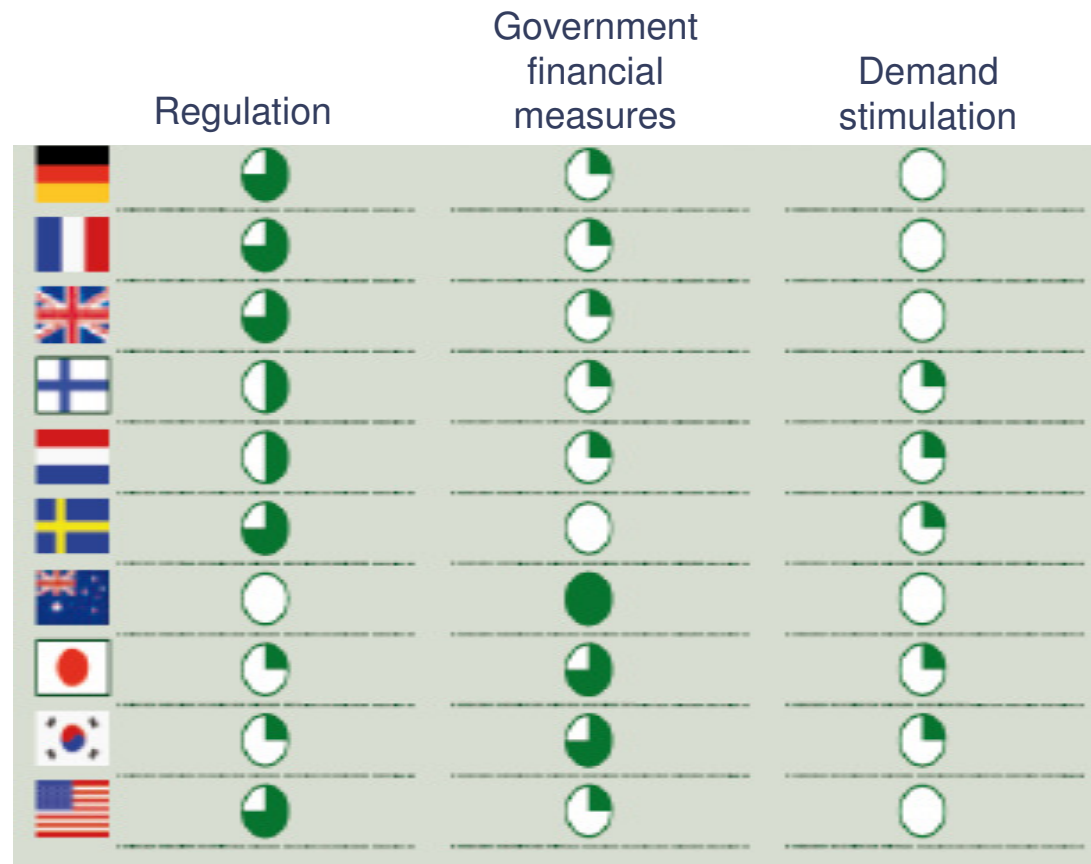
## NGA regulation

- Specific regulation is being introduced in the EU with regard to fibre access networks
- EU Recommendation on NGA (see next slide) complemented by some national regulatory authorities

- The EU Commission has passed a recommendation on the regulation of NGA networks, to be observed by national regulators in their decisions
- Contains more of the same, extending access regulation to civil infrastructure of SMP operators, cost orientation for the offers of SMP operators, transparency regarding the networks of SMP operators, eventually sub-national markets (and sub-national SMP operators).
- To increase investment incentives, it is recommended that:
  - Risks can be shared between SMP operators and its wholesale customers, including the allowance for different prices to enable infrastructure sharing and investment cooperation with wholesale customers
  - But, these suggestions should only implemented if they are non-discriminatory or do not have exclusionary effects. Further the different risk sharing must be reflected in lower costs for the SMP operator.
- Effects of the NGA recommendation remain to be seen

# Regulatory Situation

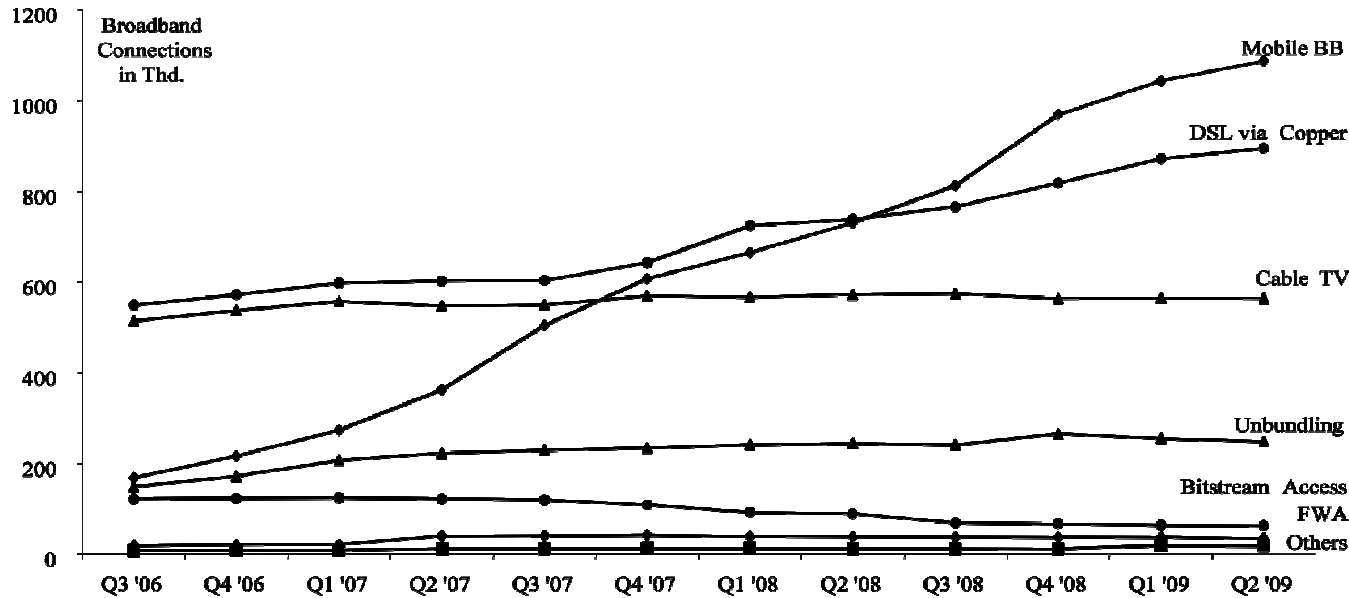
- Countries in and outside Europe have different strategies to promote broadband.



Source: Roland Berger Strategy Consultants for the German Ministry of Economy

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# Austrian Broadband Market



Source: RTR

- Bitstream Access and Unbundling loose importance; Broadband via CATV has remain more or less static since Q1/2008 → fixed competition based is being reduced
- Fiber optic based broadband access de facto not yet available
- Mobile broadband has become the largest single technology for broadband access
- Austria leads Europe in terms of mobile broadband penetration
- Development initiated by mobile broadband has exerted a heavy impact on fixed broadband with negative implications for fixed ANOs

Schriftenreihe der Rundfunk und Telekom Regulierungs-GmbH

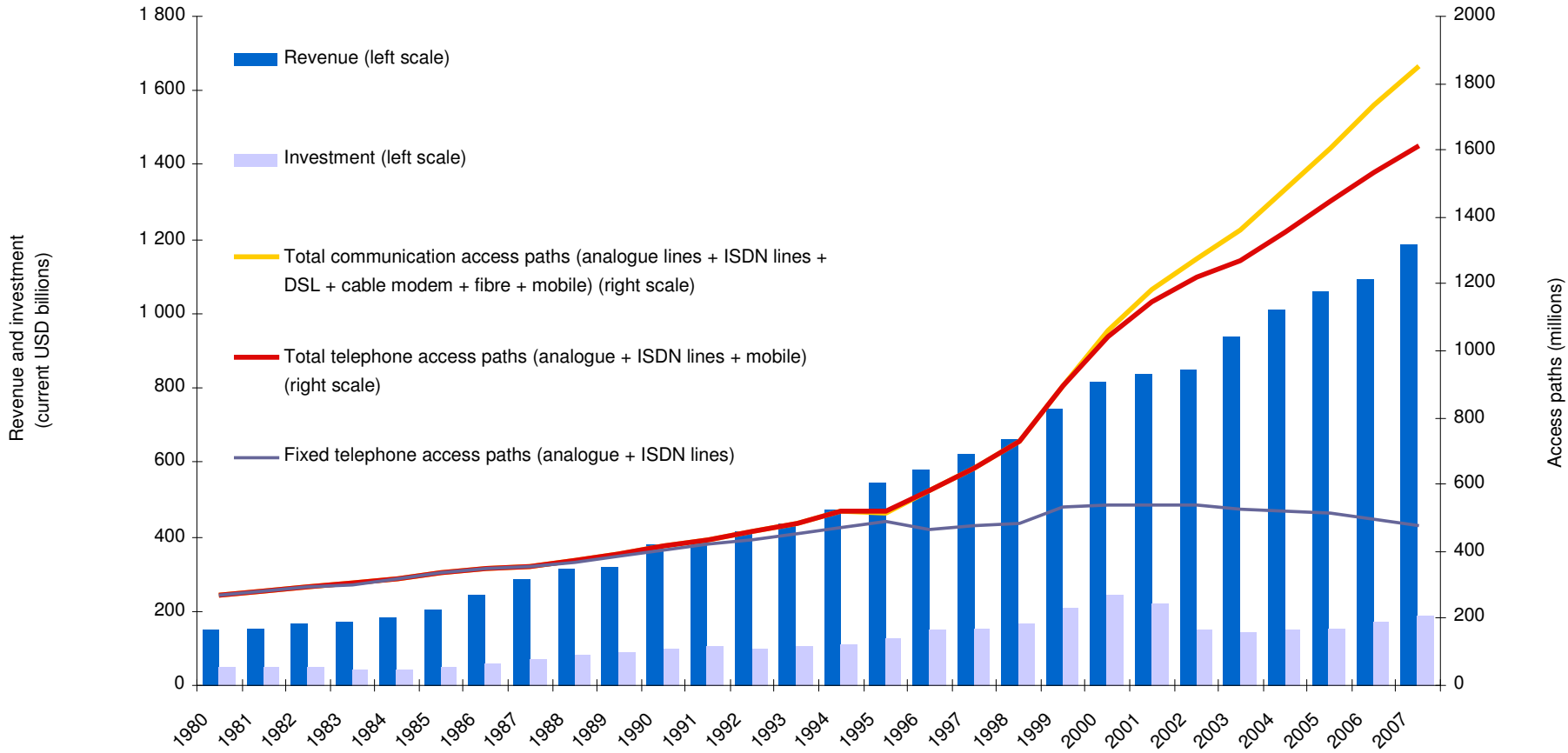
## Breitbandanschlussnetze in Österreich

Kooperationsmodelle und Finanzierung für  
Infrastruktur für Next Generation Access

SBR Juconomy Consulting AG  
im Auftrag der Rundfunk und Telekom Regulierungs-GmbH  
im September 2009

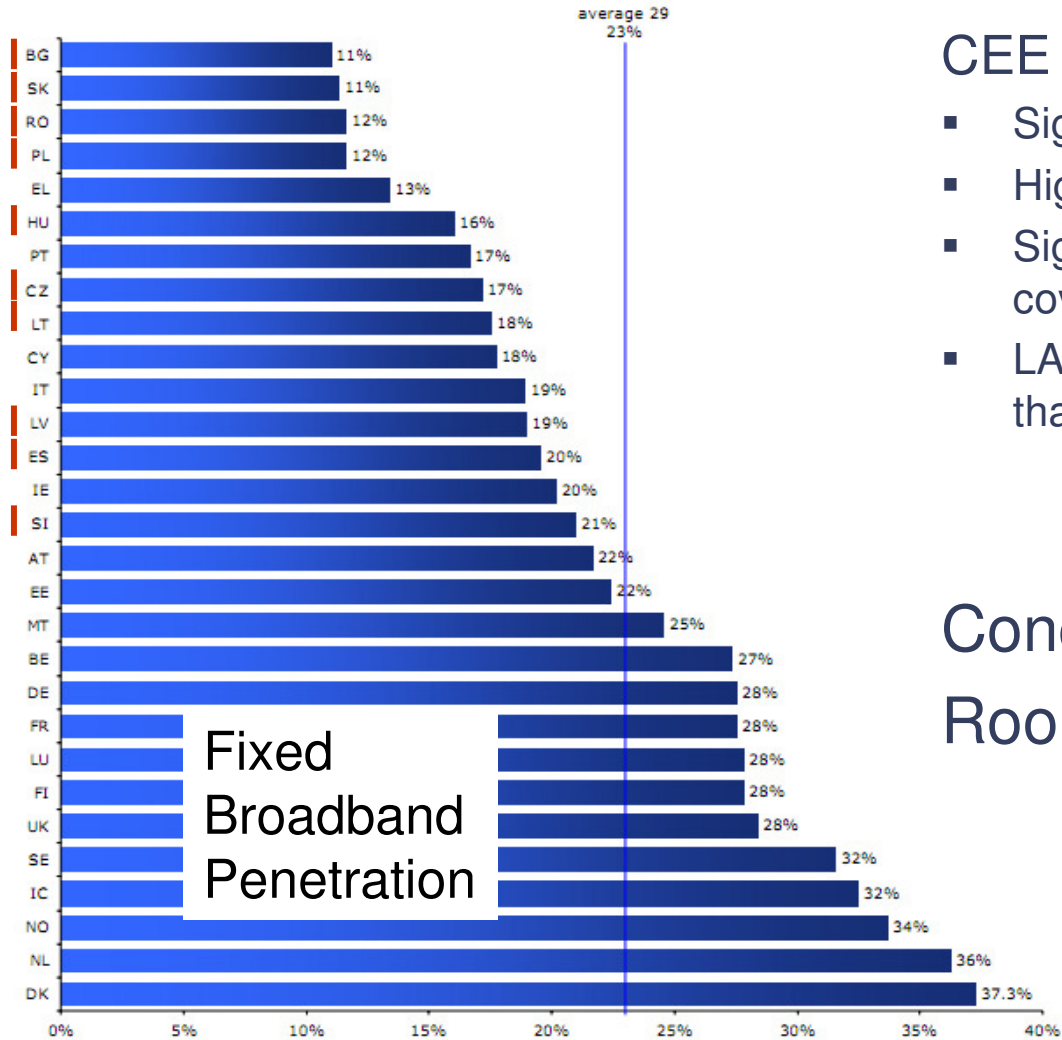
- See SBR study for the Austrian regulator in 2009
- Download at:  
<http://www.rtr.at/de/komp/SchriftenreiheNr22009>

# Trends in Revenue, Invest and Infrastructure



Source: OECD Communications Outlook 2009

# Broadband Market in the EU



## CEE countries characterized by

- Significant lower broadband take up rate
- High cable modem coverage (50-65%)
- Significant gaps between 3G and 3G+ coverage
- LAN networks more widely deployed than in western European countries

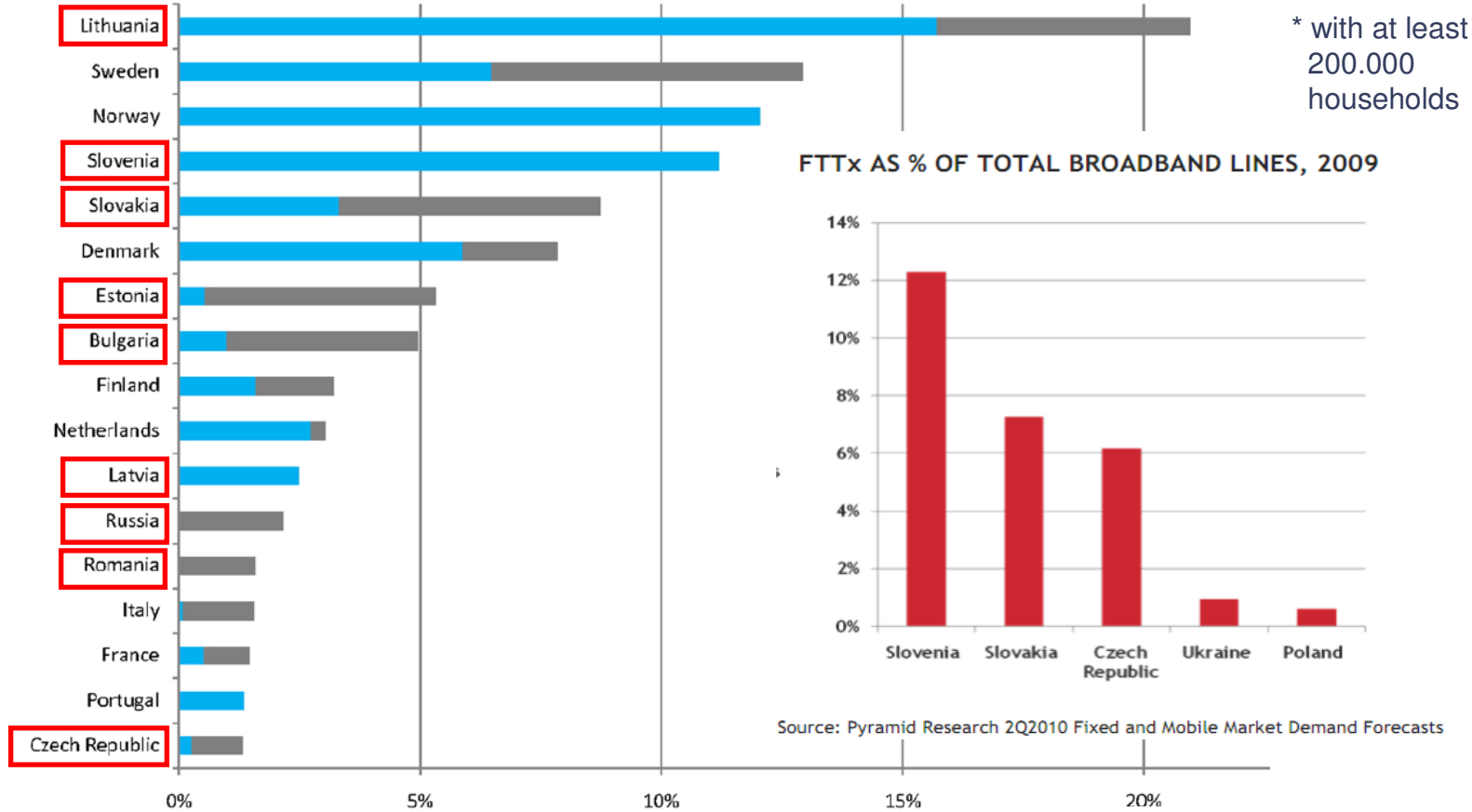
## Conclusion:

Room for investment in CEE

Source: IDATE, Deployment of Broadband Access in Europe, December 2009

# FTTH/FTTB in CEE

Economies\* with the Highest Penetration of Fibre-to-the-Home/Building + LAN



Source: Pyramid Research 2Q2010 Fixed and Mobile Market Demand Forecasts

Source: FTTH Council Europe, June 2010 EU ranking

## Household Penetration\*\*

The fastest adoption of FTTH/B can be observed in countries where local loop unbundling (LLU) has either not been implemented or not gained much popularity!

# Highlights Concerning BB in some CEE Countries

- Lithuania
  - High number of mobile broadband subscribers (10,5% of population) and FTTH (28% of broadband connections)
- Slovenia
  - High number of mobile broadband subscribers (22% of population) and FTTH (12% of broadband connections)
  - Fiber city nets financed by EU structural and cohesion funds
- Croatia
  - Ordinances in 2009/2010 on: (1) fiber optic distribution networks (2) in-house cabling and (3) technical conditions for cable ducts
- Bulgaria and Romania
  - Approximately 40-50% of Internet connections come from LAN/MAN providers with many using FTTB technology

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# Concluding remarks

## Overview of conducted investments

## The link between investment and regulation

## Intensity and consistency of regulation

## The broadband situation in Austria and the CEE

- Network operators are hesitant to invest. New players as utility providers / municipalities are entering the market but often fear the “retail service element of the value chain”. Rural areas are not yet but should be strongly supported by public funding.
- Alternative operators are likely to stick to low-budget investment models and take advantage of renting the incumbent’s network
- Regulatory options between low flexibility → low risk → low reward and high flexibility → high risk → high reward. Probably new regulation tools are necessary for the new infrastructure.
- Austria displays strong mobile data substitution and very low retail prices, which is not favorable for NGN/NGA investments. CEE countries with partially high numbers of FTTH homes passed.

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