ITU-EC Regional Conference for Europe in Partnership with the Office of Electronic Communications of Republic of Poland
"Broadband Services and Infrastructure Mapping"

Broadband Policy for Gigabit Society

Warsaw, 11th-12th April 2016

Agenda

Intel broadband policy

- Why do we care?
- What we're proposing?
- What is the evidence?

Why do we care?

Goal

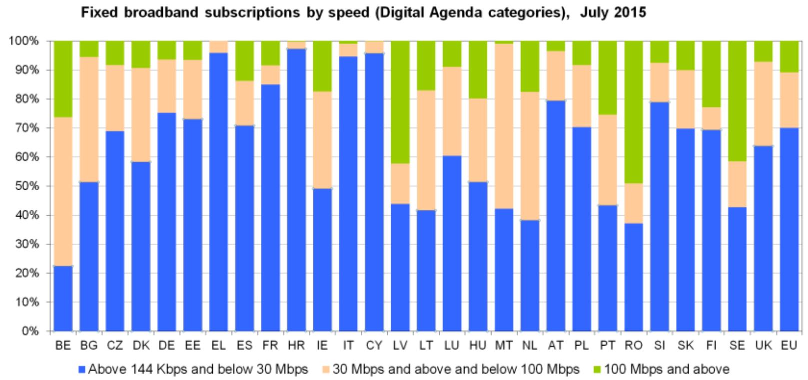
Widespread, affordable, high-quality broadband promotes data usage and PC

Policies

- Robust content and app ecosystems
- Facilities-based competition
- Targeted, efficient subsidies in high cost areas

Subscriptions ≥ 100Mbit/s in EU

- Status is 11% in 2016
- EC Digital Agenda target is 50% in 2020



Intel interests align well with consumers

Energizing Digital Industries

Information Processing Industry → USA, China, Russia EU? → Market Makers: Google, Facebook, Amazon

Solutions, SW-Integration, Architectures, Concepts
Application/Manufacturing Industry, Strong Brands ← Remains in EU How long? ← Know-how Industry

Semiconductors' Applying Industry → Asia Unlikely to return → ODM Ecosystem

Behaviour Changing Vectors →

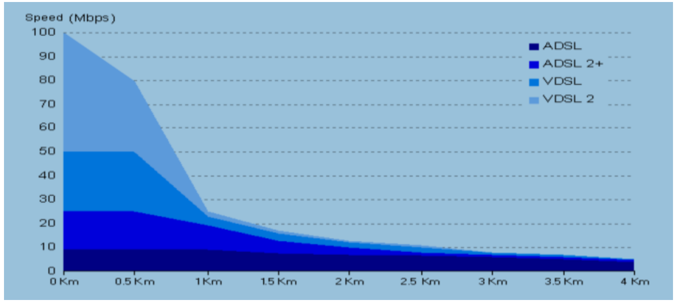
- → **Culture**:
  - Entrepreneur
  - Financing
  - Risk taking
- → **Education**
- → **Regulatory Framework**
- → **Market Structures**
  - Vertical vs. horizontal
- → **Infrastructures**
  - **Broadband connectivity**
  - Electricity
  - Transportation

Think holistic: Customers, Products, Infrastructure and Policy

Copper limits bandwidth, optical fibre not

VECTORING

Utilizes existing telecom cables
Avoids digging for optical fibre
Requires “virtual” unbundling



DOCSIS 3.x

~1Gbit/s per cable branch
>10users/branch
shared medium

LTE

~150Mbit/s per cell
~500m – 10km radius
shared medium

Rewire Europe

EU Telecom Policy

Current EU Telecoms framework

- **Successful in bringing competition to the market**
- **Less successful in promoting investments in ultrafast broadband**

New EU Telecoms framework

- **Must foster incentive based competition and favor ex-post oversight over ex-ante control.**
- **Remedies must balance the impact on incentives to make risky, expensive broadband investments as well as on static competitive benefits.**
- **End-users interests and rights must continue to be observed.**

What we're proposing?

No access (unbundling) requirements on FTTx where

- There is "effective competition"
- Competitors have access to ducts, conduit, poles
- Regulator continues to monitor market performance

How could this be implemented?

"Article 7" procedure permits flexibility, *e.g.*, Portugal

- **Generate data addressing empirical questions**
- **Allow variation and trial & error at country level**
- **Allow for *ex post* monitoring**

Why is competition beneficial?

It’s a “Discovery Process” that produces

- **Allocative efficiency (prices close to cost)**
- **Productive efficiency (low costs)**
- **Dynamic efficiency (innovation)**

How do we define effective competition?

- **Needs at least 3 “choices” in relevant geographical market**
- **Effective competition choices *include***
  - **xDSL**
  - **Cable modem**
  - **Competitive/municipal fiber**
  - **ULL is available**
  - **Other alternatives that represent a meaningful choice to significant share of market**

When are markets competitive?

- Structure versus performance
  - Price declines and share changes
  - New services, innovation and investment
  - New entry
- Performance is key
  - What matters to consumers
  - Rivalry inconsistent with tightknit oligopoly behavior
- Internal growth requires different approach than mergers

What does the evidence show?

Spain, Portugal, Romania

- Where “liberalization” exists, *all* operators deploy their own network

EU

- Investment per capita of 120 USD; 50% HH subscription of 100 Mbps or more by 2020, 11% now

U.S.

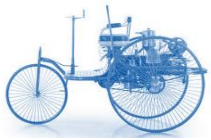
Investment

- Investment per capita of 240 USD; 65% HH coverage of 100 Mbps or more
- 8% coverage 1 Gbps or more
- Verizon has deployed Fios (FTTH) >70% of wireline footprint; spent $23 billion since 2004.
- AT&T has deployed U-Verse (FTTC) to comparable levels.
- DOCSIS 3 covers 85 percent of U.S. households.

Competition

- Cable and Telco shares comparable where both deployed
- Share change: Comcast and TWC lost 400K HHs to Verizon & AT&T in one Q/2013
- Investment continuing: $40 plus billion in 2013
- Rivalry belies oligopoly behavior

Liberalization fosters last mile fiber investment

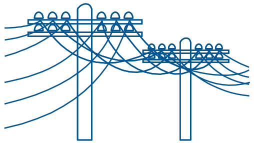


Automobile industry

1886 – first motor car

Telecommunication

1844 – first telegraph line



Conclusions

- **Digital industry requires macro-economic, holistic approach**
- **Competition based broadband policy works**
- **Accelerate regulation and rollout to get ultra-fast broadband by 2020**

Thank You!

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Backup

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experience
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