Conference on state aid law and small and medium sized enterprises

State aid for Broadband networks

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Outline

1. EU targets and technologies
2. Objectives of State aid control
3. State aid in the broadband sector
4. Broadband Guidelines: balancing exercise
5. Gigabit targets – VHCN
6. Demand side measures: broadband vouchers

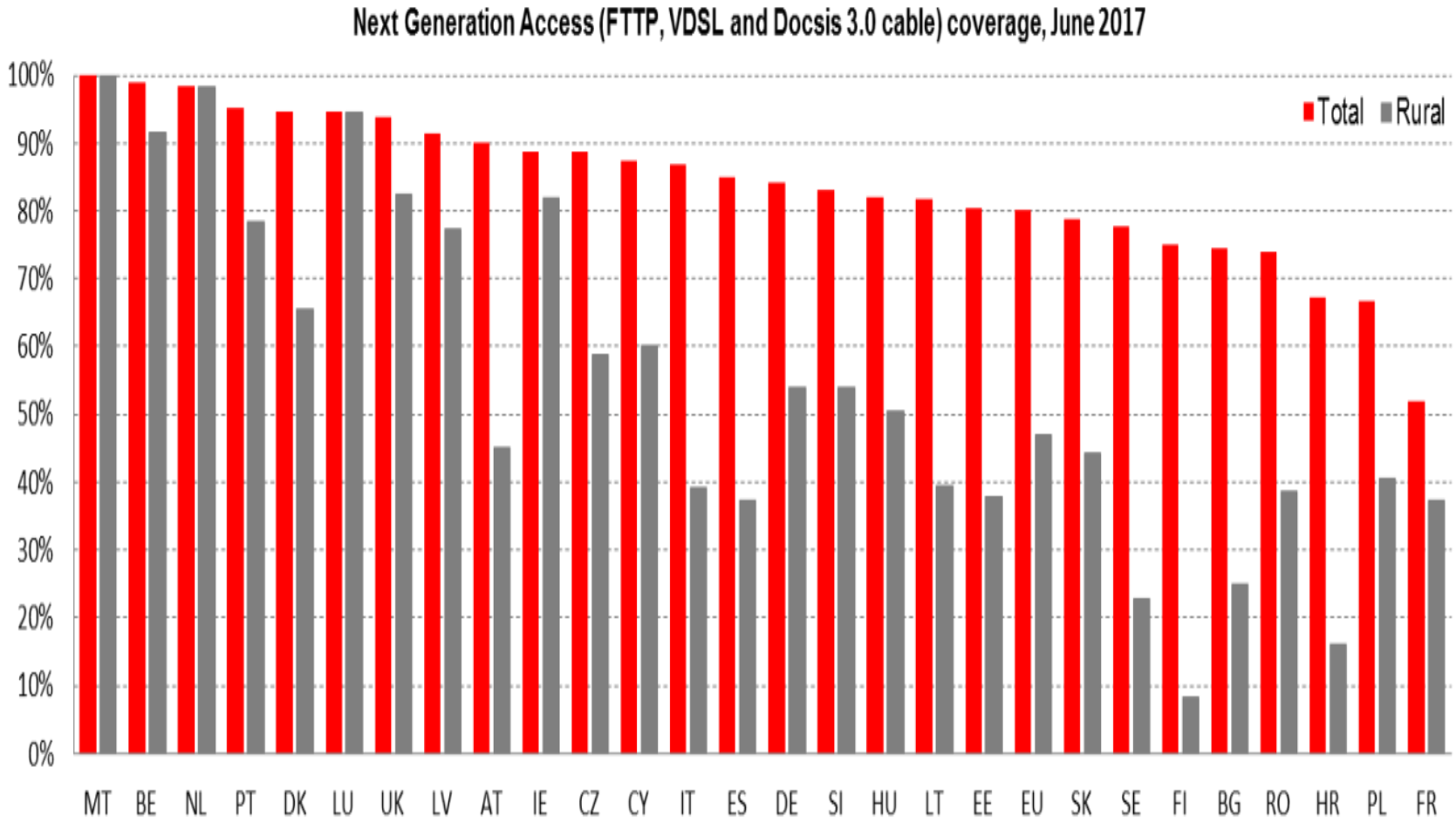
EU targets

a) Digital Agenda targets 2020:

- 100% coverage >30 Mbps download speeds
- > 50% take-up >100 Mbps download speeds.

b) Gigabit Society targets 2025:

- **Households:** 100% coverage >100Mbps download - upgradeable to 1 Gbps
- **Main socio-economic drivers:** 1 Gbps symmetric (schools, transport hubs, main providers of public services, digitally intensive enterprises)
- **Urban areas & major terrestrial transport paths:** uninterrupted 5G coverage (by 2020: 5G connectivity available in at least one major city in each MS)



Source: IHS and Point Topic

Network categories and technologies

1. Basic Broadband: <30 Mbps download

Technologies: dial-up connections (phone line and modem), telephone copper lines, coax cables for TV distribution, satellite dishes, wireless connections, mobile technologies

2. "Next Generation Access" (NGA) networks: > 30Mbps download

Frequently used NGA technologies:

- mainly copper: VDSL + vectoring – *limited performance*
- mainly coax cable: Docsis 3.0/3.1 - *very performant, but asymmetric*
- mainly fibre: FTTB / FTTH – *best in class (high symmetric performance)*

Includes also Very high capacity networks (VHCN)

- consisting largely of fibre to distribution point or similar performance
- speed significantly higher than 100 Mbps download, upgradeable to 1G

***Technologies*:** FTTx (FTTC, FTTN, FTTP, FTTH, FTTB); Certain advanced fixed wireless (reliable high speeds per subscriber); Certain Upgraded cable networks (min. DOCSIS 3.0)

Objectives of State aid control

Efficient use of tax payer money

- No over-compensation
- Limit State intervention to areas of “market failure”
- Ensure incentive effect

Minimize distortions of competition

- Protect good private investment ("crowding-out")
- Technological neutrality
- Step change
- Foster competition at market entry (tender)
- Foster competition in the market (open networks)

State aid in the broadband sector

No aid if either:

1. **No economic activity:**
   - **Closed public networks** (e.g. NN24/2007 Public sector network Prague, N46/2007 Welsh Public Sector Network, N407/2009 Spain Xarxa Oberta)
   - **Administrative or Regulatory measures** (e.g. N383/09 Broadband in the rural areas of Saxony)
2. **Market Economy Investor Principle** (C53/06 *Citynet Amsterdam, Trento*)
3. **Service of General Economic Interest (SGEI) and Altmark** (NGA: N331/2008 Hauts de Seine, basic: N381/2004 Pyrénées-Atlaniques)

General Block Exemption Regulation (GBER): Requirements

- Only "white" target areas
- Mapping & Public consultation
- Competitive selection process
- Full and effective unbundling
- Threshold per project: total costs < € 70 million
- Ex post control

The Broadband Guidelines

Compatibility assessment: 'white', 'grey' and 'black' areas

- In **white areas**: aid promotes territorial cohesion and economic development objectives
- In **grey areas**: detailed assessment (step change)
- In **black areas**: in principle no need for State intervention: risk of crowding out existing investors (limited exceptions)

Broadband Guidelines: the balancing exercise

Objective:

Effective public spending in market failure areas (unsatisfied demand, insufficient private investment)

Avoid "crowding out" effects: disincentives for private investment in white/grey/black areas

Conditions:

- **Mapping & public consultation**
- **Tender**
- **Wholesale access**
- **Step change:** significant new investments (not just active upgrade); capabilities: availability, capacity, speed (e.g. doubling of download and upload speeds + at least 100 Mbps download & significant upload); competition (e.g. improved services/prices)
- **Technological neutrality**
- **Existing infrastructure**
- **Transparency**

Focus on Mapping

WIDE DISCRETION FOR MEMBER STATES, supported by core principles:

Premisses passed not premisses connected:

- premise can be connected within a short timeframe without excessive costs
- In case a dwelling contains multiple homes, they are all counted as "passed"

Level of granularity: premise level vs. postcode level

Map existing and planned infrastructure, not suppliers: next 3 years or adequate

2 infrastructures or more = black area
1 infrastructure, 1 or several suppliers on the same infrastructure = grey area

Map speeds & technologies able to deliver reliably these speeds:

- FTTx, Certain advanced fixed wireless, Certain Upgraded cable networks
- Map present/planned infrastructures capable of supporting >30 Mbps download
- Can also add mapping for speeds >100 Mbps download, but must map as of 30 Mbps

Mapping by segment: access, backhaul, backbone + always link with access segment

Mapping verified by public consultation & updated as necessary

Focus on Public Consultation

- **When**: when **public intervention design is final & ready to launch:** not years prior, not hypothetical
- **Where:** published on **national & local website**, not letters to known suppliers.
- **Duration: 1 month** minimum
- **What: description of the measure** & **preliminary list of target areas** (mapping) + **explicit questions regarding existing/planned infrastructure** (can add questions on interest in access)
- **Timeframe**: "near future" = **next 3 years or time horizon for deployment of subsidized infrastructure**

Delivering the Gigabit Society Communication targets

- **Demand** (present or future): we assume demand for higher speeds, based on the Gigabit Society Communication, which forecasts demand evolution by 2025 (e.g. *Households*: 100 Mbps download speed upgradeable to 1Gbps, *socio-economic drivers:* 1Gbps symmetrical)
- **Market failure:** existence of unsatisfied demand is verified via **mapping and public consultation**, to clearly establish that private operators do not have current or future investment plan to address such demand.
- **Step change test:** the new network should provide significant improvement compared to the private infrastructure already present or planned: e.g.
  - A move from 80 Mbps to 100 Mbps download may not be sufficient. At least a doubling of download speeds and significant or symmetrical upload speeds
  - Further assessment may be needed in some circumstances on a case by case basis (e.g. to limit risks of undue overbuilding)

Current topics: Very High Capacity Networks - VHCN

Case-practice to date:

- basic grey interventions (basic to basic)
- change from basic to NGA (below to above 30 Mbps)
- Grey backhaul networks
- **NGA grey interventions (NGA to NGA / VHCN)**

Challenges of the VHCN definition

- grey/black NGA areas do not become "white VHCN" – notification required

Commission Staff Working Document - Gigabit Communication

Future Demand Estimation

Future demand estimation by 2025

Table 1: Application categories with their capacity and quality requirements 2025

Application category	Downstream (Mbit/s)	Upstream (Mbit/s)	Packet loss	Latency
Basic Internet	≈20	≈16	o	o
Homeoffice/VPN	≈250	≈250	+	+
Cloud Computing	≈250	≈250	+	++
Media and Entertainment HD/3D	≈150	≈30	++	+
Media and Entertainment Ultra-HD, 4k-TV, 3D, ...	≈300	≈60	++	+
Communication	≈8	≈8	++	+
Videocommunication (HD)	≈25	≈25	++	++
Gaming	≈300	≈150	++	++
E-Health	≈50	≈50	++	+
E-Home/E-Facility	≈50	≈50	o	o
Mobile Services / Wifi-Offloading	≈15	≈12	o	o

o = No specific importance
+ = High importance
++ = Very high importance

Source: WIK-IDATE-Deloitte; Regulatory, in particular access, regimes for network investment models in Europe, SMART 2015/0002

Assessment of the step change: case of deploying VHCN in grey NGA areas

Principles:

- Always **compare to existing and planned investments** (mapping and public consultation)
- If the **planned investment consists of a VHCN network in grey NGA areas the mapping exercise could consider all the** relevant technical criteria (a part from the download speed) to assess the quality of the existing infrastructures:
  - Upload speed
  - Latency, Packet loss, etc.
  - Reliability and robustness
  - .....

Strict step change for black NGA areas

Principles:

Interventions in **black areas**: Only with **>100Mbps -1Gbps (VHCN); stricter step change requirements**:

- Subsidised network is **wholesale-only**
- Existing / planned NGA networks **do not reach the end-user premises with fibre networks**
- Market situation **not evolving towards providing >100Mbps in the near future** by private investment
- There is **expected demand** for such qualitative improvements (including **Gigabit** targets)
- Subsidised network has **significant enhanced technological characteristics & performance**
- No excessive distortion of competition regarding **recent NGA investments by private operators** in same areas

Recent case practice: The Bavarian gigabit pilot project

First case under Gigabit Communication

- Gigabit Communication objectives
- Step change in "grey NGA areas" (one existing/planned infrastructure of 30 Mbps download)

Existing NGA-infrastructures in the target areas:

- **copper** network (VDSL, partly vectoring) *or*
- **cable** network (Docsis 3.0)

Target network : FTTH/B and therefore **VHCN**
Doubling of download *and* upload speeds
Overbuilding of existing networks (definition of **target areas**)

- No overbuilding of FTTH/B and Docsis 3.1 for companies
- No overbuilding of infrastructure with 100 Mbps download or more (FTTH/B, Docsis, vectoring providing 100Mbps) for households

Demand side measure: broadband vouchers

Overview:

A **broadband voucher is a monetary demand-side measure**: whose **objective** is to **reduce the cost of broadband access for end-users** (consumers and businesses) to encourage **take-up of broadband services**.

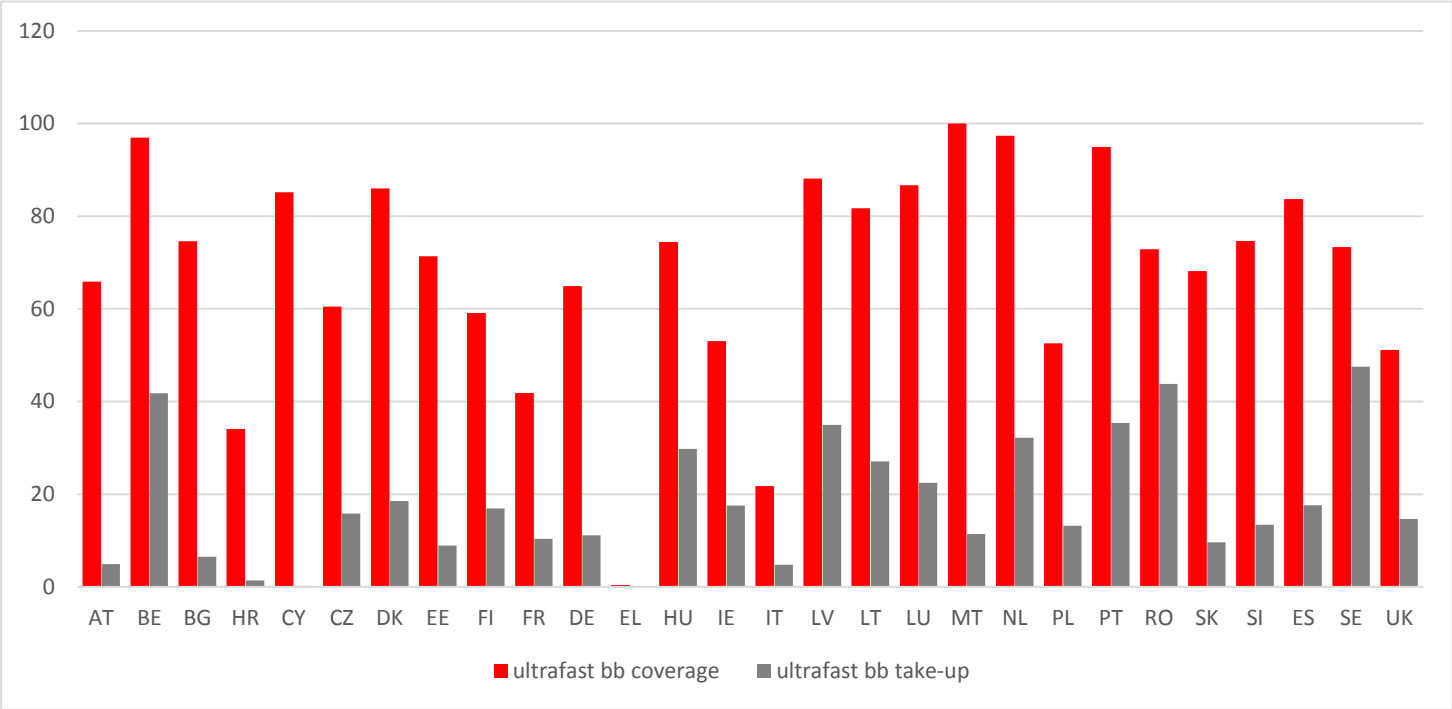
- Availability of a broadband infrastructure is a prerequisite to enable subscription
- Low take-up due to the end-users' relatively low propensity to consume.
- Different forms of vouchers: to finance the broadband subscription for a certain amount of time; to cover the set-up costs of the connection)

State aid involvement:

"**An advantage can be conferred on undertakings other than those to which State resources are directly transferred**"

A voucher scheme can constitute a **direct or indirect advantage to operators providing services to end-consumers** and in some cases to infrastructure operators.

Ultrafast Broadband Coverage vs. Take-up



For countries experiencing considerable differences between coverage and take-up there may be room for demand side measures

Key Compatibility criteria

1. **Technological Neutrality**: non-discrimination among the various technologies available
2. **Open Selection procedure:** based on transparent, non-discriminatory, objective eligibility criteria
3. **Mapping & Public Consultation**: similar to the Mapping & Public Consultation carried out for supply-side measures but more flexible (focused on assessment of market structure).

Should allow the Commission to identify potential distortions of competition and need of additional safeguards (e.g. in cases where there is only one likely beneficiary who may be an integrated operator / incumbent).

Thank you!