



AKOS

# Regulation of Broadband access and development of NGA networks in Slovenia

Nataša Vidmar Kraljević, AKOS

September 2017, Budva



AKOS

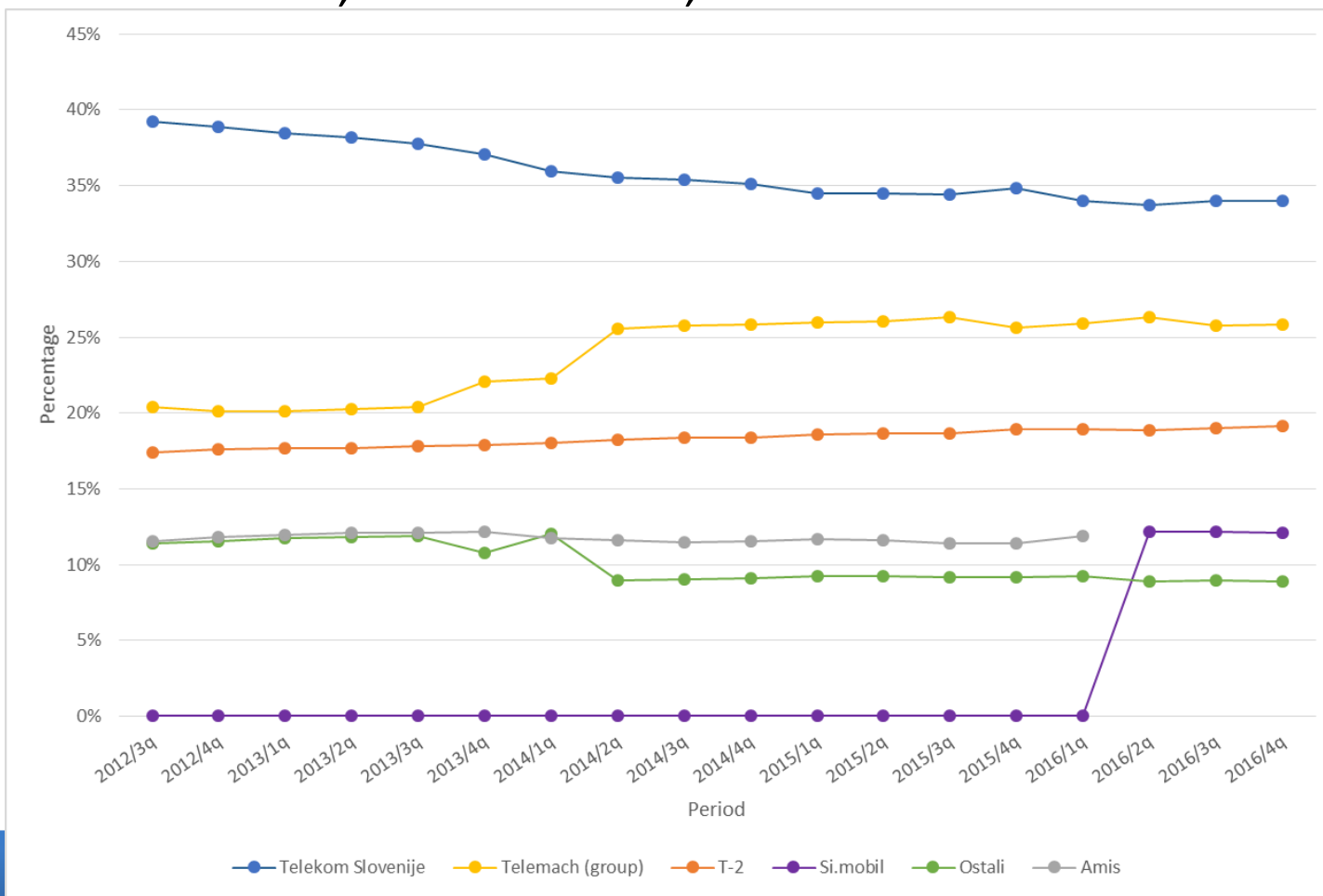
---

# Market development overview



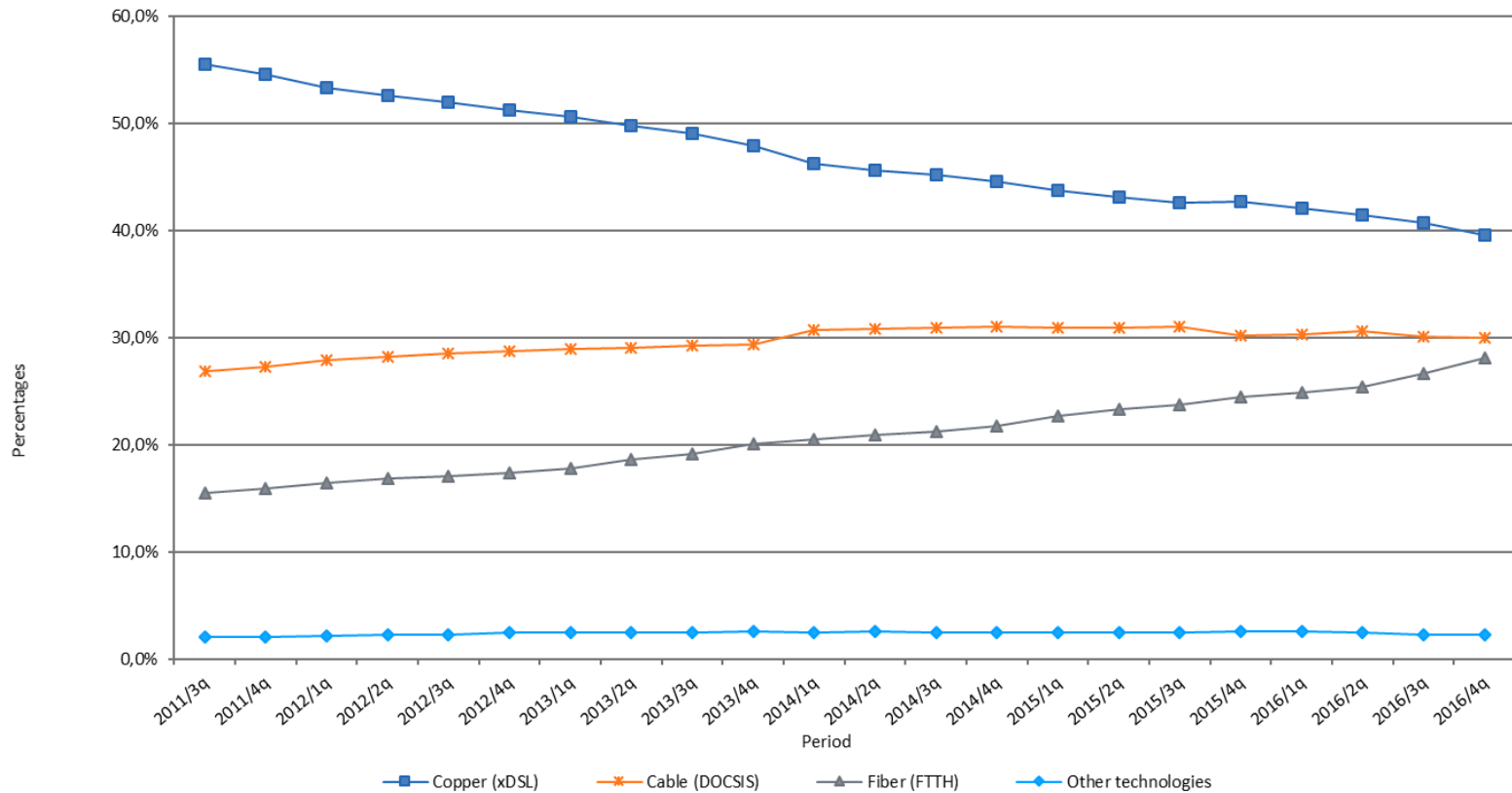
# Retail market shares by broadband internet connections

Penetration rate 71,7% households, incumbent market share 34 %





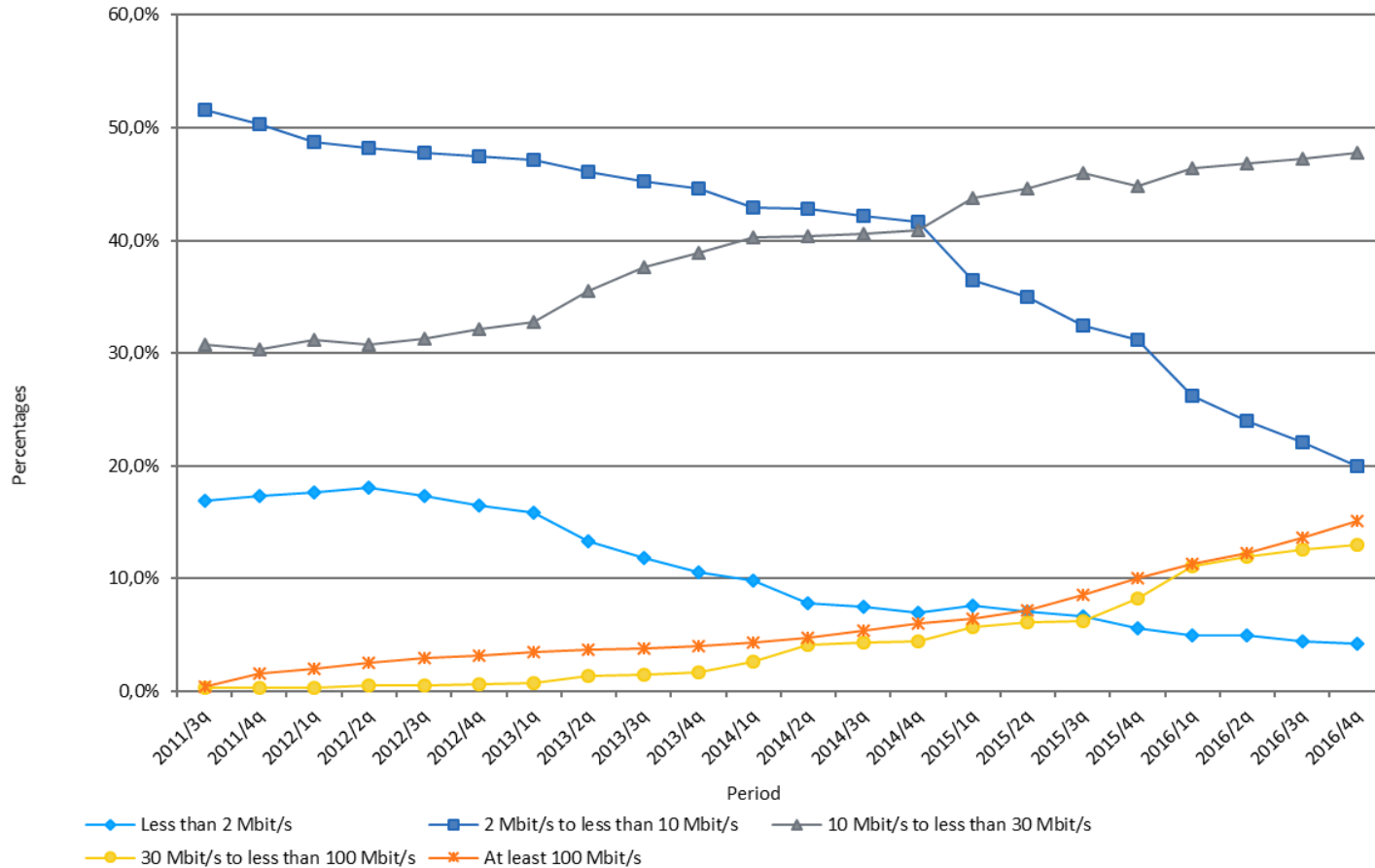
Constant decrease of copper based broadband access (39,6%), which is still dominant, rise of cable (30,0%) and significant growth of fiber (28,1%)





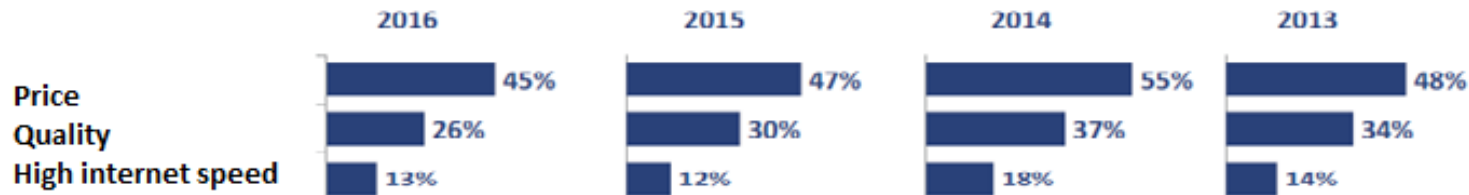
# Retail market share by internet speed

Connections with internet speeds 10 Mbit/s to less than 30 Mbit/s (47,7%) still increase, but growth of NGA connections (at least 30Mbit/s) is the highest (28,1%)

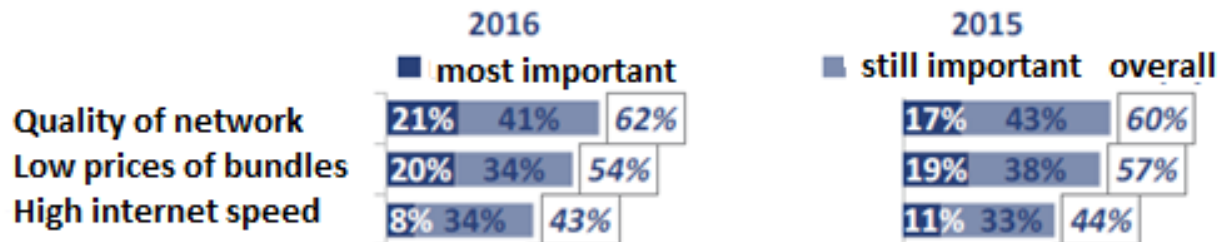




## Key factors affecting consumer choice of service bundle



## Key factors affecting consumer choice of operators



**80% of end-users are not willing to pay more for higher speed of internet connection** (The main reason provided is: „We do not need higher speed.“)

- Promoting development of innovative, high-quality and affordable services and reducing barriers for switching between operators
- Promoting equal competitive conditions for all players on the market, i.e. „level playing field“
- Promoting service competition
- Promoting investments in deployment of NGA networks based on technological neutrality
- Promoting migration of operators and consumers to NGA networks
- Taking into account developments and market trends
- Taking into account changes in regulatory approach
- Ensuring stable and predictable prices for access to copper network

- Defining flexible wholesale prices for access to NGA networks based on competitive conditions by imposing economic replicability test (ERT) instead of fixed cost based prices
- Taking into account investment plans of operators for deployment of NGA Networks
- Taking into account geographical differences of market conditions
- Pursuing objectives of the DAE and national development plan for development of broadband networks till 2020





AKOS

---

# Relevant market definition M3a and M3b



AKOS

## M3a and M3b - Wholesale product definition

---

### **3a – Wholesale local access at fixed location:**

- Local unbundled access to copper and fiber networks
- Virtual unbundled local access (VULA) in case of GPON/Vectoring

### **3b – Wholesale central access at fixed location for mass-market products:**

- Bitstream access to copper and fiber networks (regional and national PoH)



**Markets 3a and 3b are NATIONAL, because:**

- Incumbent has national presence with its network (cooper and fiber)
- Incumbent provides regulated wholesale access based on LLU and bitstream on equal national pricing conditions
- Almost no retail price differentiation by operators in different areas
- Business strategies of other relevant operators are also national



- Major network deployments and upgrades in progress:
  - ✓ Telemach and other cable operators upgrade their HFC networks by placing fiber nodes closer to end-users and DOCSIS 3.0
  - ✓ Telekom Slovenije started to deploy GPON fiber networks in 2015 and has almost completely replaced newly built P2P FTTH connections with GPON. Telemach also continues to deploy GPON fiber networks
  - ✓ Operators also committed themselves to deploy NGA networks to majority of white spots in the next 3 years

AKOS decided for **differentiation of remedies on Market 3b** (due to the fact that it is in such cases more appropriate than geographic segmentation of market)



AKOS

---

# **Imposition of remedies M3a and M3b**

## • **Market 3a – ACCESS OBLIGATION**

- ✓ Copper LLU
- ✓ Fiber LLU
- ✓ VULA for Vectoring/G.Fast
- ✓ VULA for GPON
- ✓ Collocation for access seekers
- ✓ In-house wiring
- ✓ Passive infrastructure (terminating segments of ducts and poles – for other operators for building their own network), dark fiber, ethernet)

- **Market 3a – NON-DISCRIMINATION OBLIGATION**

- ✓ EoI

- Common information system (ordering process, fault repairs)
- KPIs, SLAs, SLGs
- Technical replicability test (done by incumbent for new retail offers)

- **Market 3a - TRANSPARENCY OBLIGATION**

- ✓ Publication of reference offer
- 

- **Market 3a – OBLIGATION OF ACCOUNTING SEPARATION**
- **Market 3a – OBLIGATION OF PRICE CONTROL AND COST ACCOUNTING**
  - ✓ Copper network - Monthly fee for LLU (8,09 EUR) and for shared LLU (3,27 EUR) developed by AKOS BU LRIC+ cost model
  - ✓ NGA network – Monthly fee for FTTH and VULA based on Economic replicability test developed by AKOS
  - ✓ Passive infrastructure
    - ✓ Duct Rental – based on BU LRIC+ cost model developed by AKOS
    - ✓ Poles Rental – Based on BU LRIC+ cost model developed by AKOS
  - ✓ Other services: based on LRIC+ methodology calculated by SMP operator



- **Market 3b – DIFFERENTIATION OF REMEDIES**

**Settlements with no price control and cost accounting obligation**

but with access obligation, non-discrimination obligation,  
transparency obligation, obligation of accounting separation

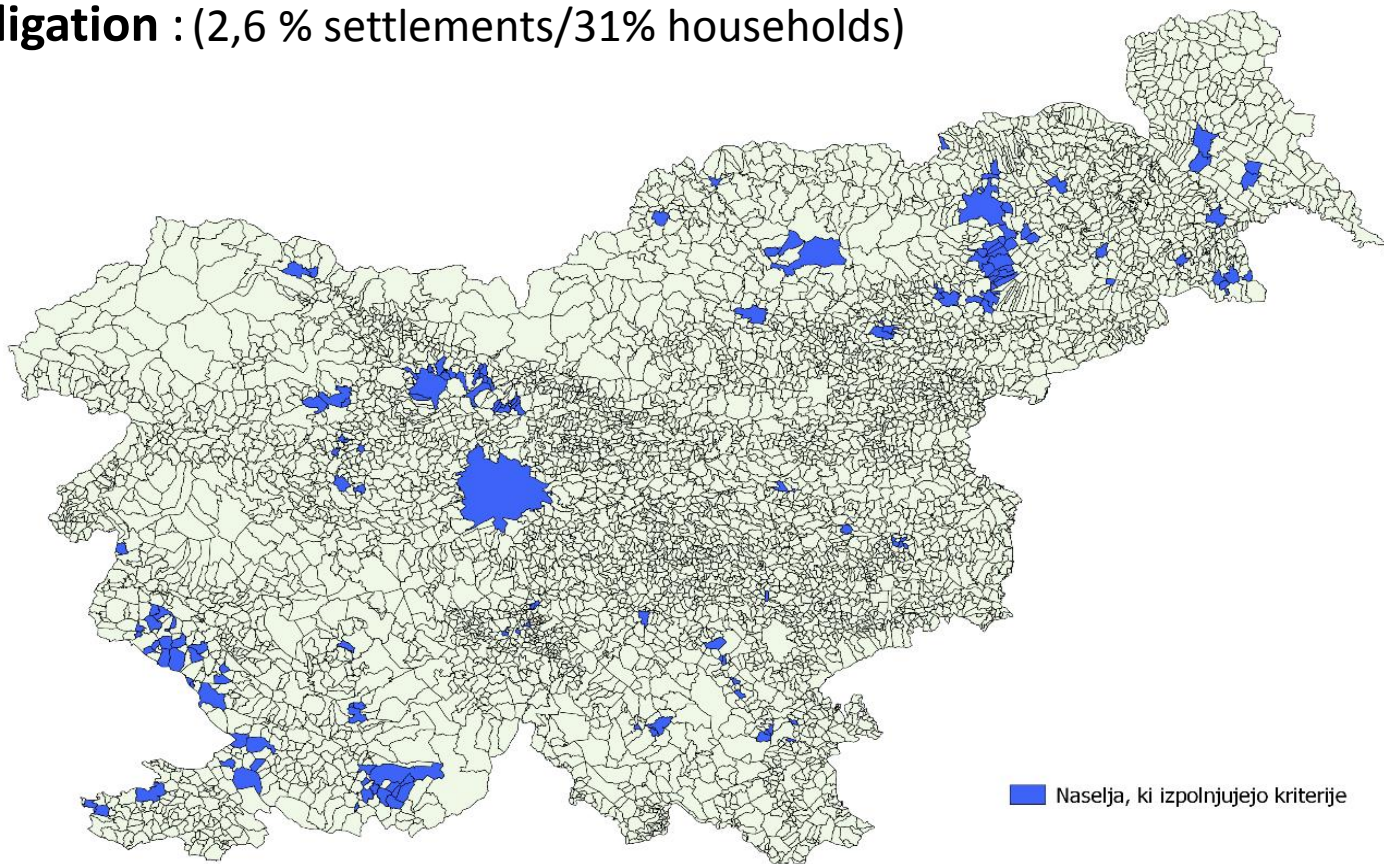
- 1) at least 65% of households covered with infrastructure (copper and fiber) of other operators. If theoretically the wholesale prices of SMP become unacceptable, access seekers would have a possibility to engage in commercial agreements with owners of alternative infrastructure)

- **Market 3b – DIFFERENTIATION OF REMEDIES**

**Settlements with no price control and cost accounting obligation:**

- 2) Telekom Slovenije has less than 40% retail market share of BB access connections (retail market share is not dominant, retail competition is more developed in comparison to other areas)
- 3) If particular settlement has sufficient number of households connected to SMP's MDF or ODF that have at least 500 lines (existence of economic justification of LLU). IF theoretically the wholesale prices become unacceptable, access seekers would have a viable option to unbundle local loops at economically feasible terms.

- **Market 3b – Settlements with no price control and cost accounting obligation** : (2,6 % settlements/31% households)



- **Market 3b – ACCESS OBLIGATION**
  - ✓ Bitstream access on copper network
  - ✓ Bitstream access on fiber network (P2P/P2MP)
  - ✓ Regional bitstream access (four PoH)
  - ✓ National bitstream access (one PoH)

- **Market 3b – NON-DISCRIMINATION OBLIGATION**

- ✓ EoI

- Multicast/unicast functionality
- L2/L3 wholesale service
- Common information system (ordering process, fault repairs)
- KPIs, SLAs, SLGs
- Access to network information and planned network upgrades
- Technical replicability test (done by incumbent for new retail offers)

- **Market 3b - TRANSPARENCY OBLIGATION**

- ✓ Publication of reference offer



- **Market 3b – OBLIGATION OF ACCOUNTING SEPARATION**
- **Market 3b – OBLIGATION OF PRICE CONTROL AND COST ACCOUNTING**
  - ✓ NGA products – to be tested based on Economic replicability test developed by AKOS
  - ✓ Non - NGA products (copper below 30 Mbit/s) – based on LRIC+ methodology calculated by SMP operator
  - ✓ Other services: based on LRIC+ methodology calculated by SMP operator

# Slovenia 2020



**Europe 2020 Strategy and Digital Agenda for Europe, by 2020,**

- ✓ all Europeans have access to much higher internet speeds of above 30 Mbps and
- ✓ 50% or more of European households subscribe to internet access above 100 Mbps.

**Slovenian NGN plan deployment, by 2020,**

- ✓ 96% of households have access to internet speed of 100 Mbps and
- ✓ 4% or households have access to internet speed of above 30 Mbps.

**Commercial interest**

- ✓ Departmental ministry tested commercial interest (second half of 2016) for deployment of high speed networks and many operators committed themselves to deploy those network, so a lot of new infrastructure and upgrades are expected till 2020 (According to Slovenian Electronic Communication Act-1 whoever expresses a market interest in constructing a broadband network must construct it within three years from notifying the ministry and AKOS of their interest)
- ✓ Building of NGN networks and major upgrades of almost all largest infrastructure operators on the market are in the progress (GPON instead of P2P fibre GRON instead of cable, DOCSIS 3.0 upgrades and copper upgrades)



**Open broadband networks (state aids)**

- ✓ Less than 1% households (white spots areas) will be built by state aid funds by 2020

**Cost reduction Directive (2014/61/EU)**

- ✓ Possibility to use passive infrastructure in accordance with implemented Directive 2014/61/EU on measures to reduce cost of deploying high-speed electronic communications network

**For NGA products Economic replicability test and not cost oriented prices**

- ✓ to support the SMP operators' investments in NGA network and provide incentives for innovation in NGA-based services.

**Ensuring stable and predictable prices for access to copper network****To enable all possible access for access seekers based on current topology and technology**

- ✓ GPON and G.fast (VULA)

**Thank you**

[natasa.vidmar-kraljevic@akos-rs.si](mailto:natasa.vidmar-kraljevic@akos-rs.si)

