



AGENCY FOR ELECTRONIC
COMMUNICATIONS
AND POSTAL SERVICES



INTERNATIONAL
TELECOMMUNICATION UNION

Development of NGA networks in Montenegro

17th INTERNATIONAL CONFERENCE
“Future Regulation for inclusive connectivity”

INFOFEST - Budva, 30 September – 1 October 2019.

Vitomir Dragaš

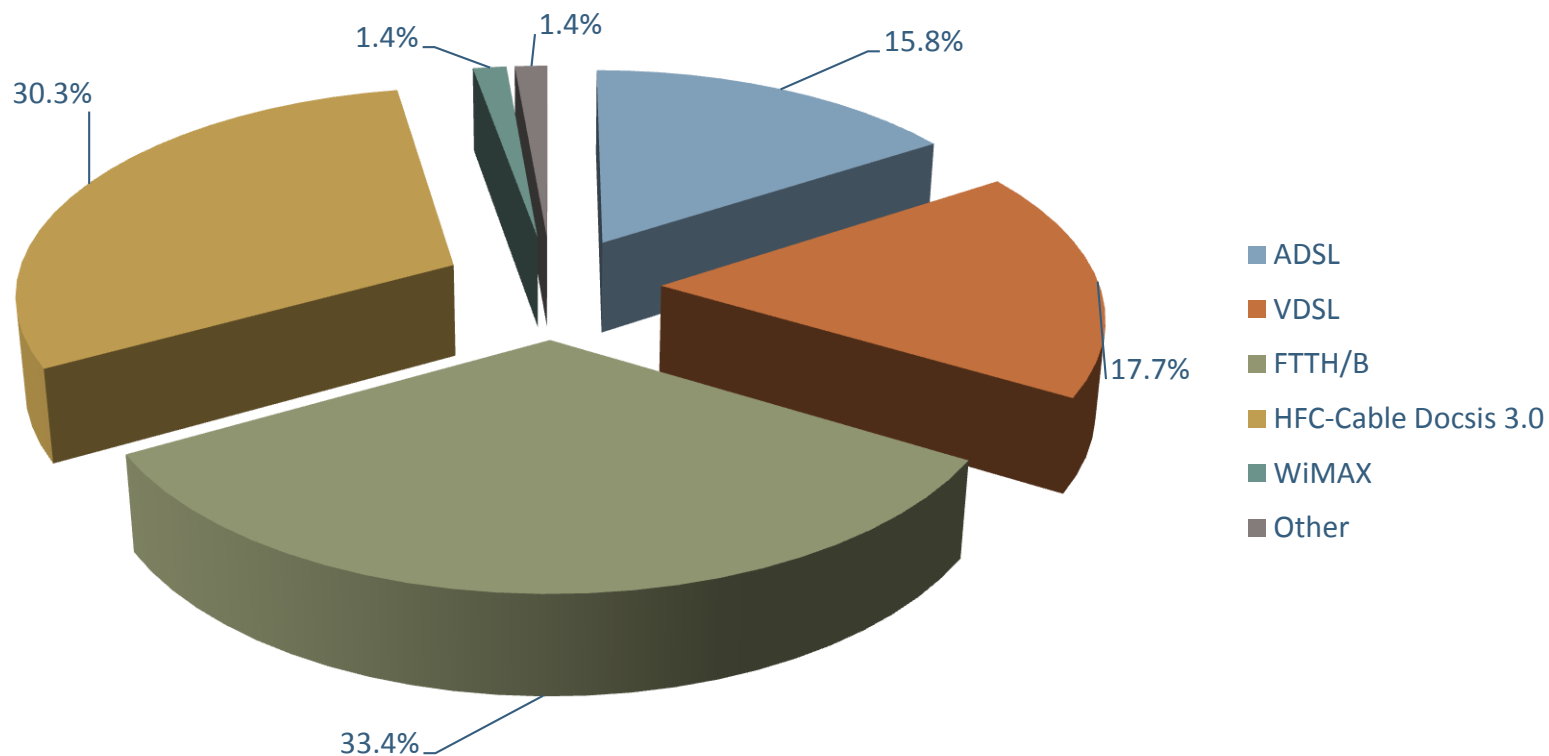
Agenda

- Operators
- Fixed broadband Internet access
- Mobile broadband Internet access
- Agency's activities for development of NGA
- Strategic Goals
- Future plans

Operators

- High investments
 - ▣ 2016 - 117 mil.€ (~ 50 % sector revenue)
 - ▣ 2017- 101 mil.€ (~ 43 % sector revenue)
 - ▣ 2018 – 91,5 mil.€ (~ 38 % sector revenue)
- Consolidation of market (mergers/acquisitions)
- Bundled offers (Most of subscribers are using some form of bundled offers)
 - ▣ Double play
 - ▣ Triple play
 - ▣ Quadruple play (2 operators)

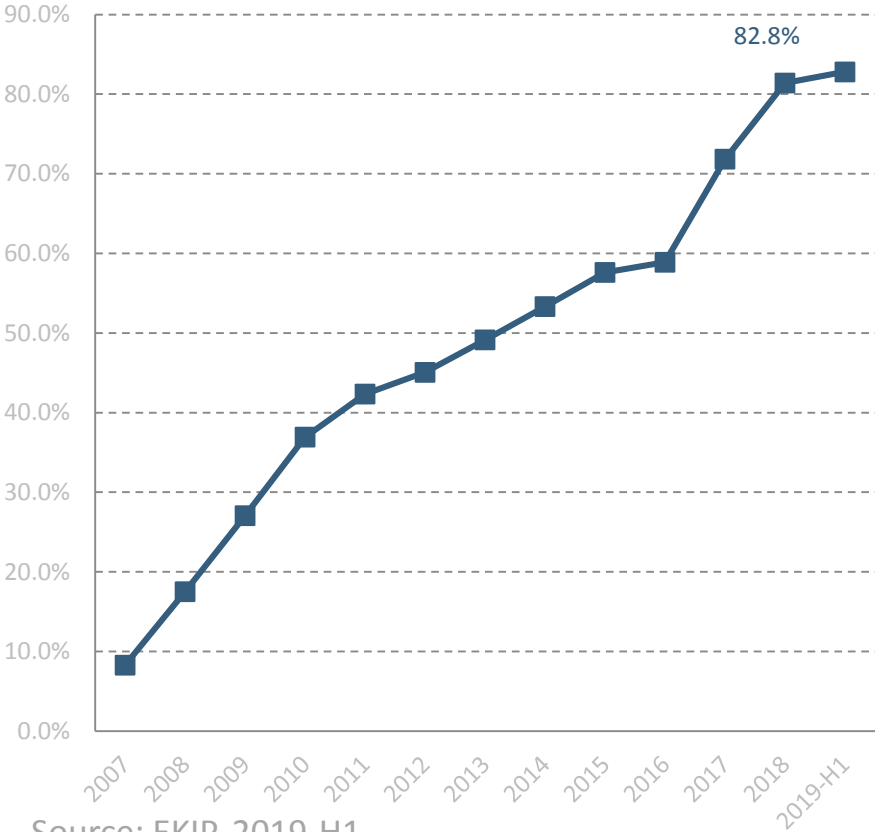
Share of different broadband technologies in total fixed Internet access subscribers



Source: EKIP, 2019-H1

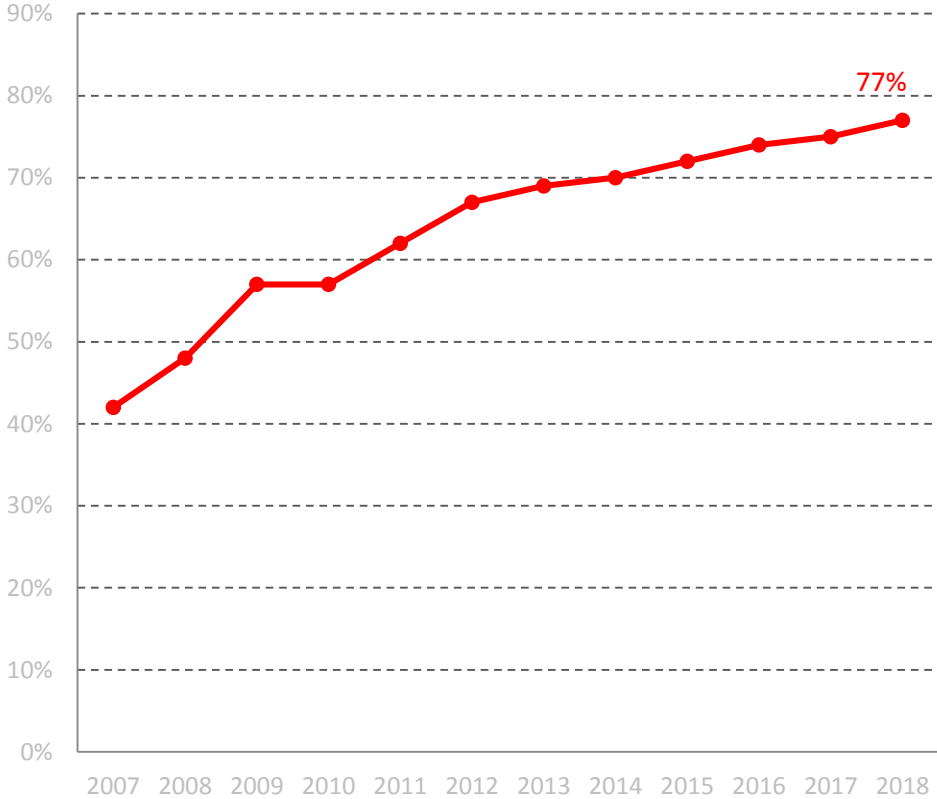
Household penetration of fixed broadband Internet access

Montenegro Households with a fixed broadband subscription, 2007 – 2019-H1



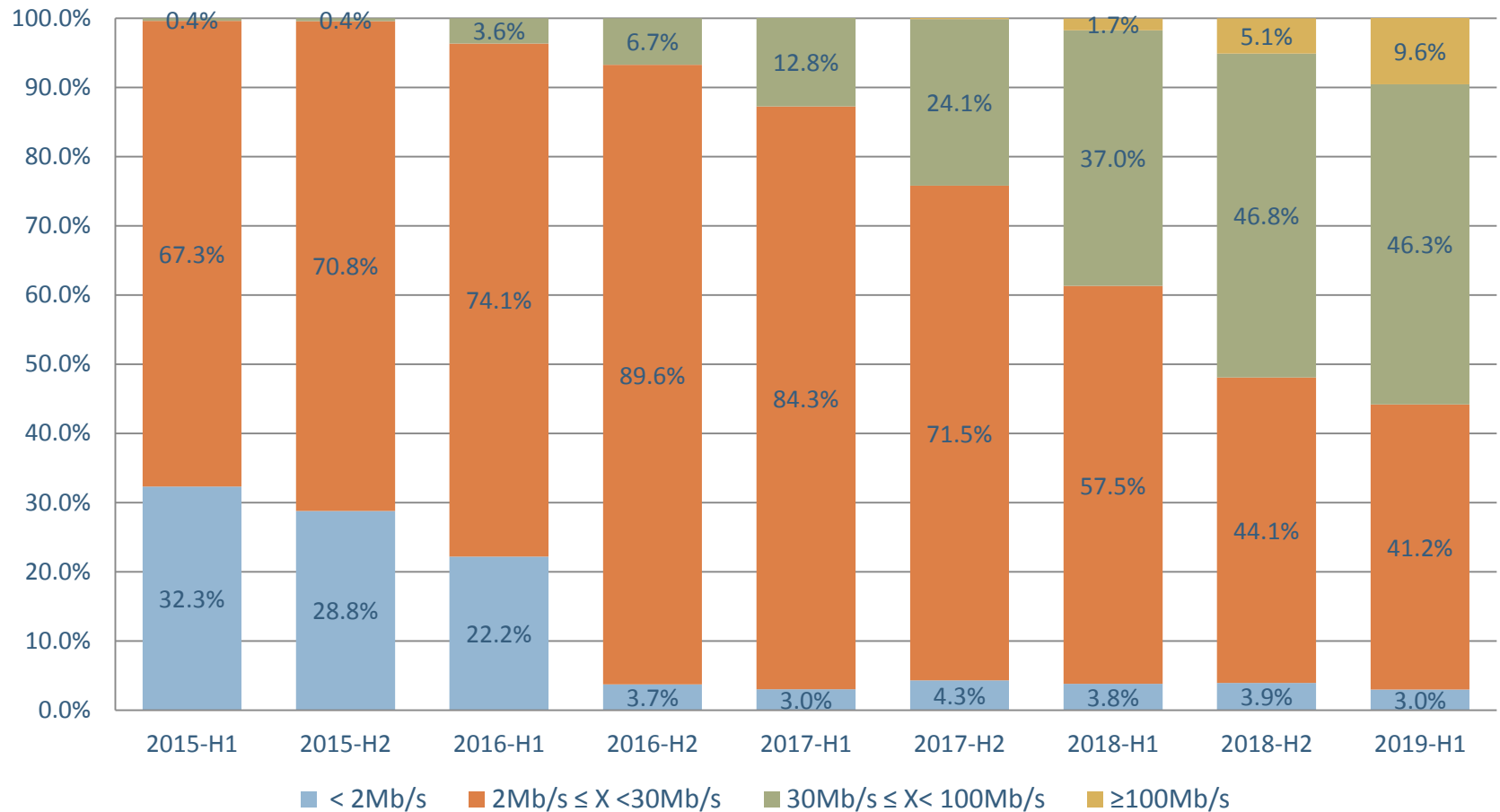
Source: EKIP, 2019-H1

Households with a fixed broadband subscription at EU level (% of households), 2007 - 2018



Source: Eurostat

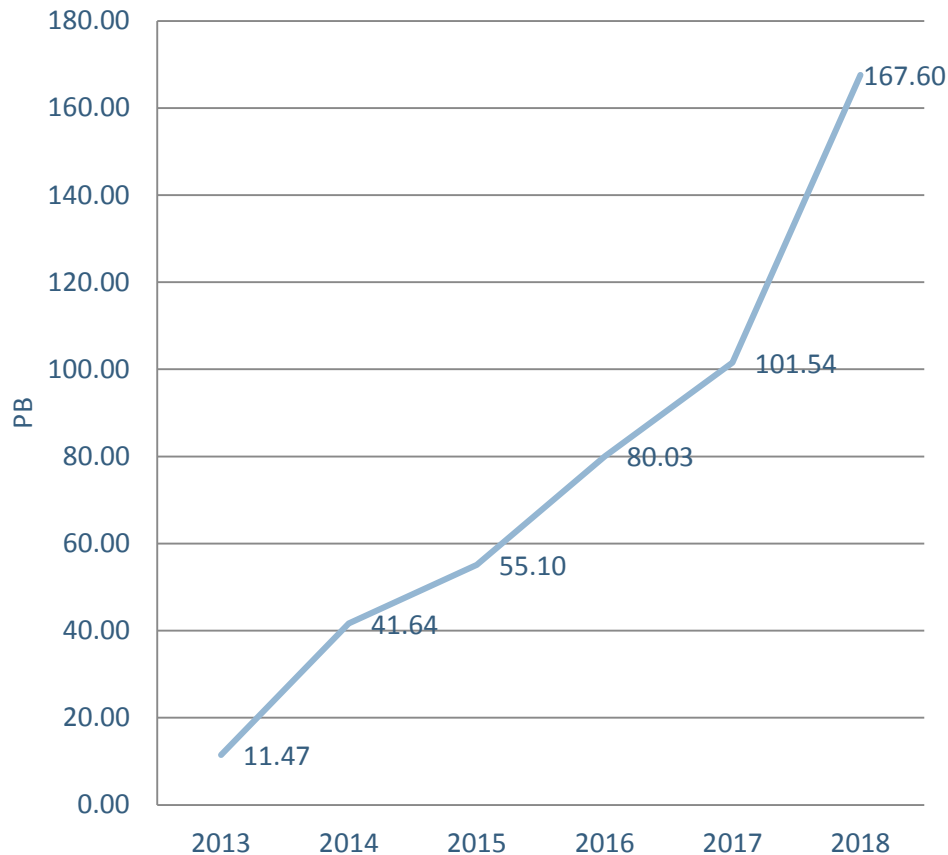
Internet access connection speeds for fixed broadband



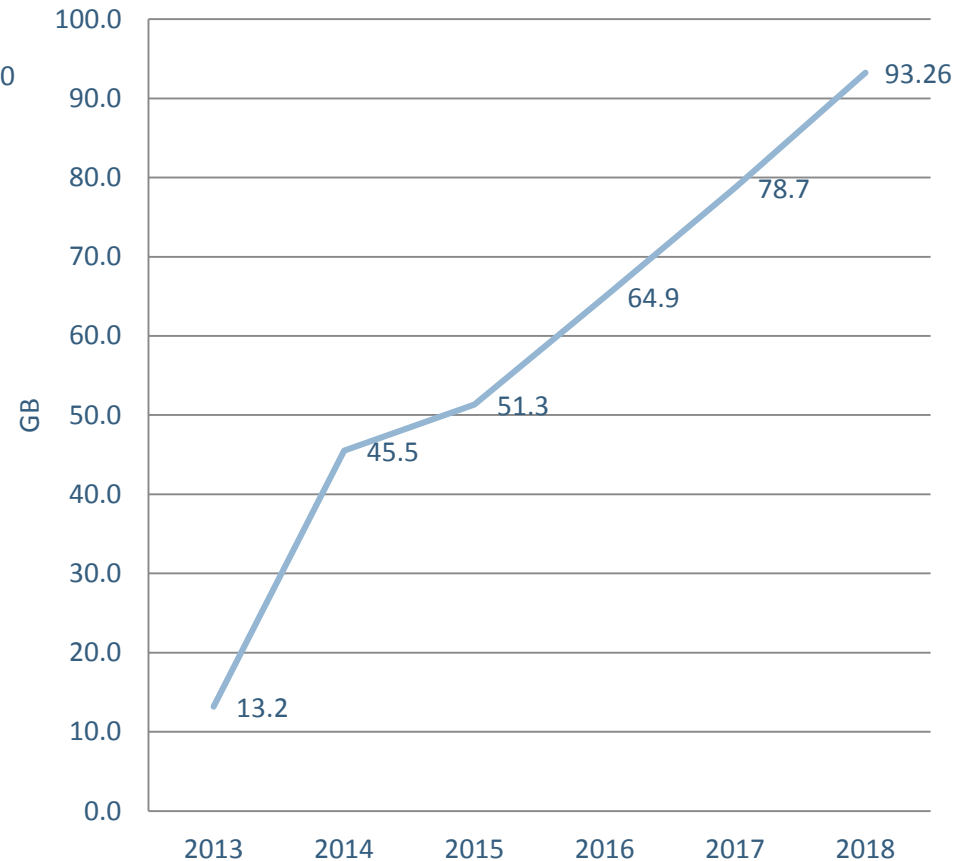
Source: EKIP, 2019 H1

Internet traffic in fixed networks

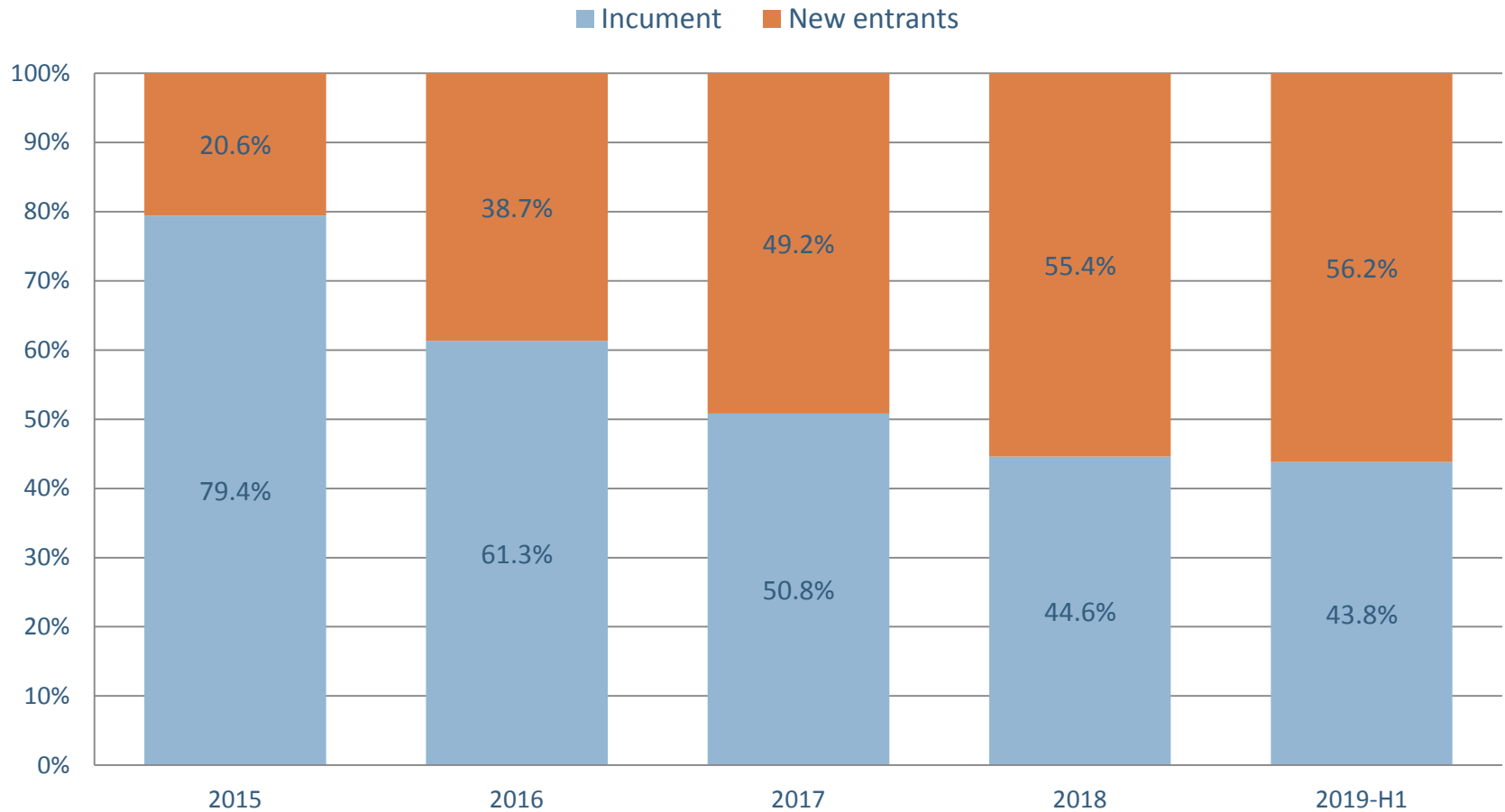
Internet traffic in fixed networks



Monthly internet traffic in fixed networks per subscriber



Competition in fixed broadband Internet access

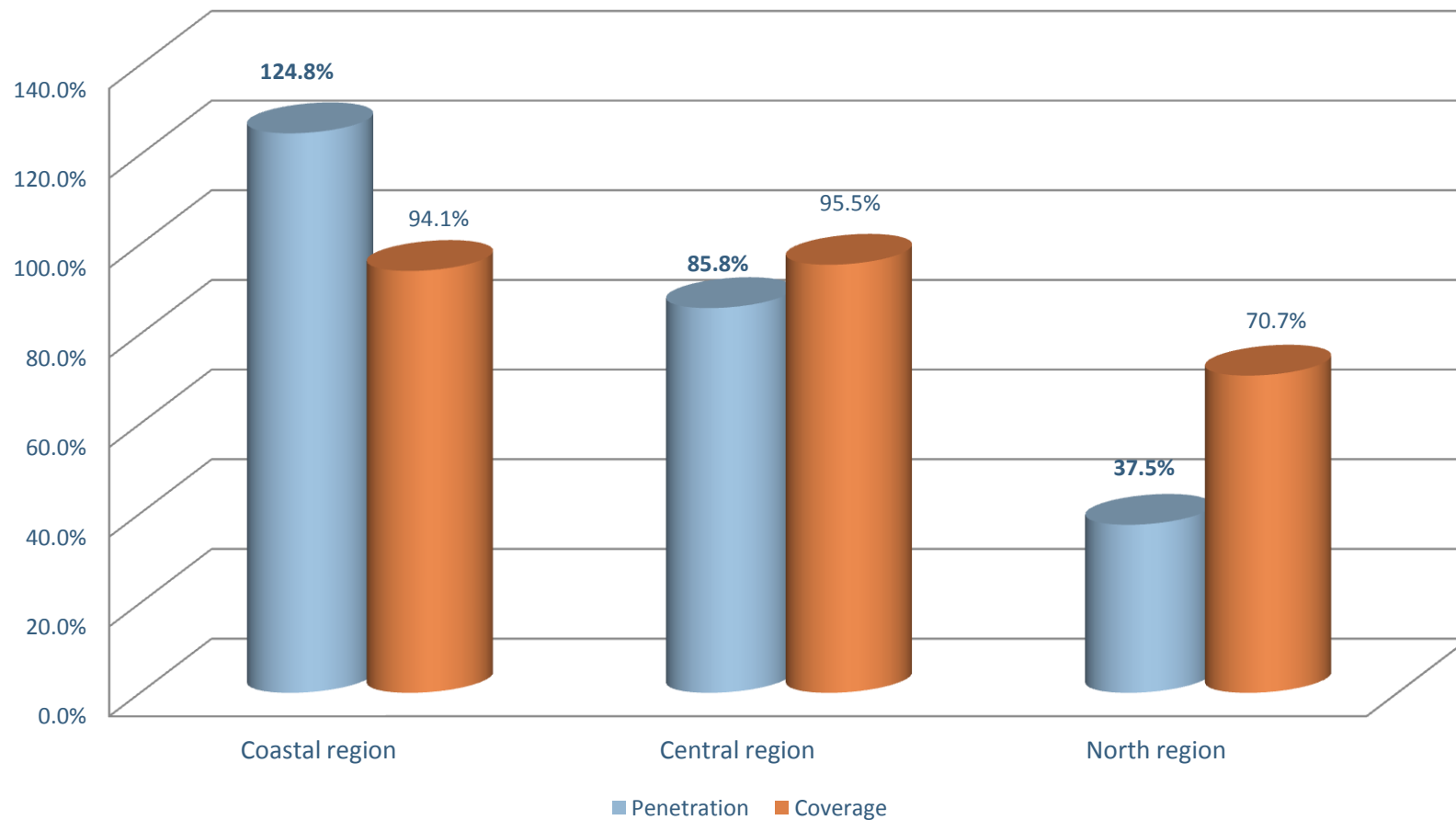


Source: EKIP, 2019 H1

Competition in fixed broadband Internet access - geographic distribution

- 6 municipalities – 1 operator (4,1% population)
 - ▣ Plav, Plužine, Šavnik, Žabljak, Gusinje, Tuzi
- 3 municipalities – 2 operators (5% population)
 - ▣ Andrijeвица, Danilovgrad, Kolašin
- 15 municipalities - ≥ 3 operators (90,9% population)

Household penetration/coverage of fixed broadband Internet access – geographic distribution



Comparison with EU data

| | Montenegro | EU average |
|--|--------------|------------|
| NGA coverage | 76% | 83% |
| NGA – % of all fixed broadband subscriptions | 81.4% | 55% |
| FTTH/B coverage | 68% | 30% |
| FTTH/B – % broadband subscriptions | 33.4% | 16% |
| Households with a fast broadband access (at least 30 Mb/s) | 46.2% | 41% |
| Households with an ultrafast broadband (at least 100 Mb/s) | 7.9% | 20% |

Source: EKIP, 2019-H1

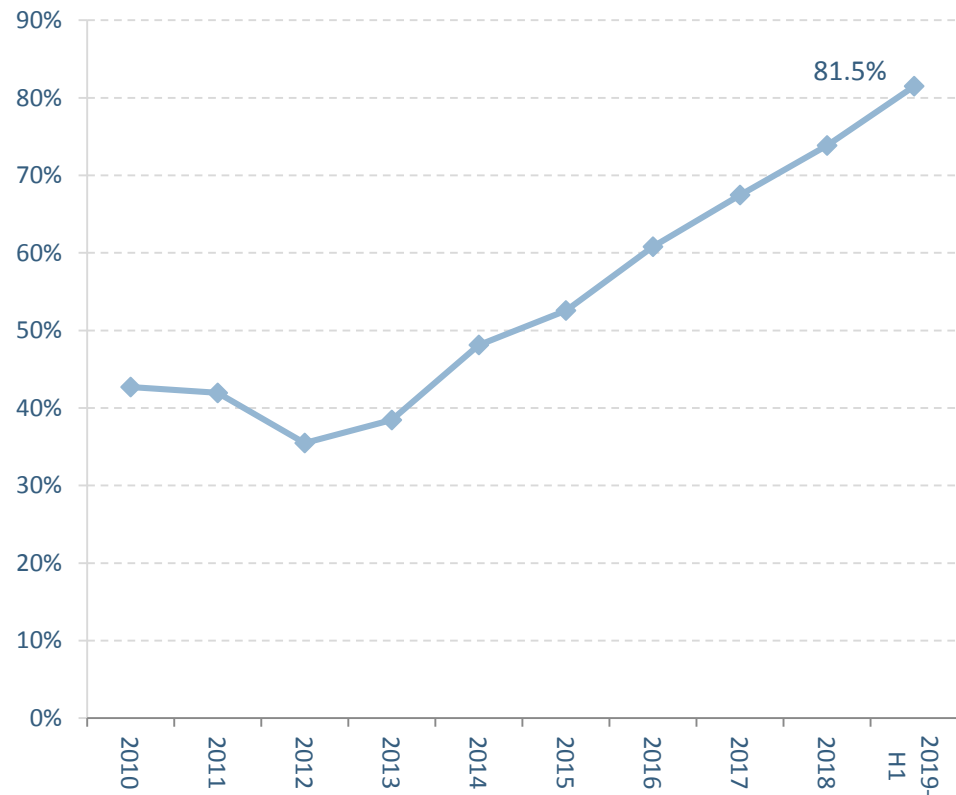
Source: DESI Report 2019 – Connectivity

4G mobile coverage

- All mobile operators implemented LTE and LTE Advanced technology (2CA & 3CA)
- End of 2018. > 97% populated area is covered with 4G network by two operators
- Max download access speed depends of implemented technology, and reaching 375Mb/s

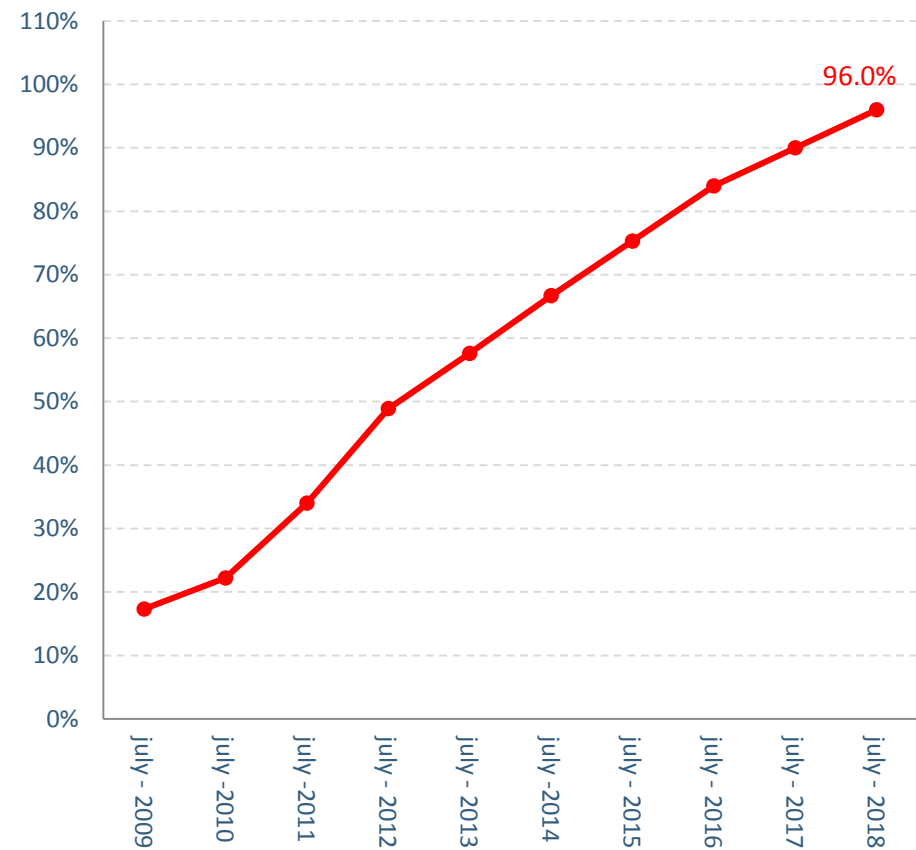
Penetration of mobile broadband Internet access

Mobile broadband penetration in Montenegro, 2010 - July 2019



Source: EKIP, 2019-H1

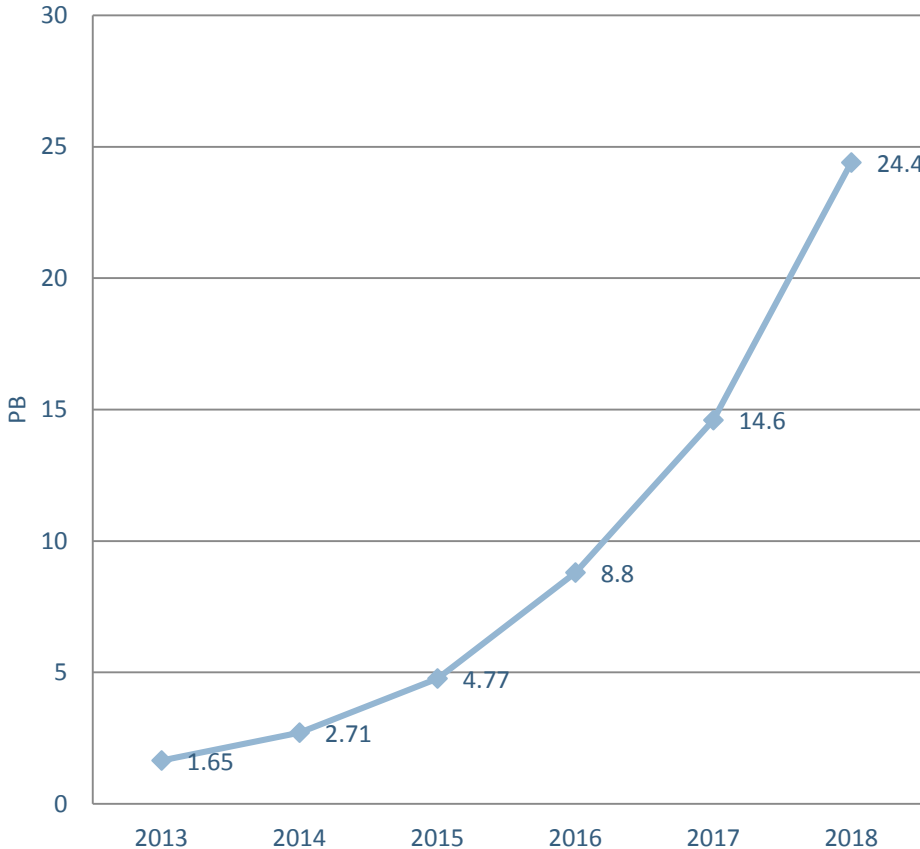
Mobile broadband penetration at EU level, July 2009 - July 2018



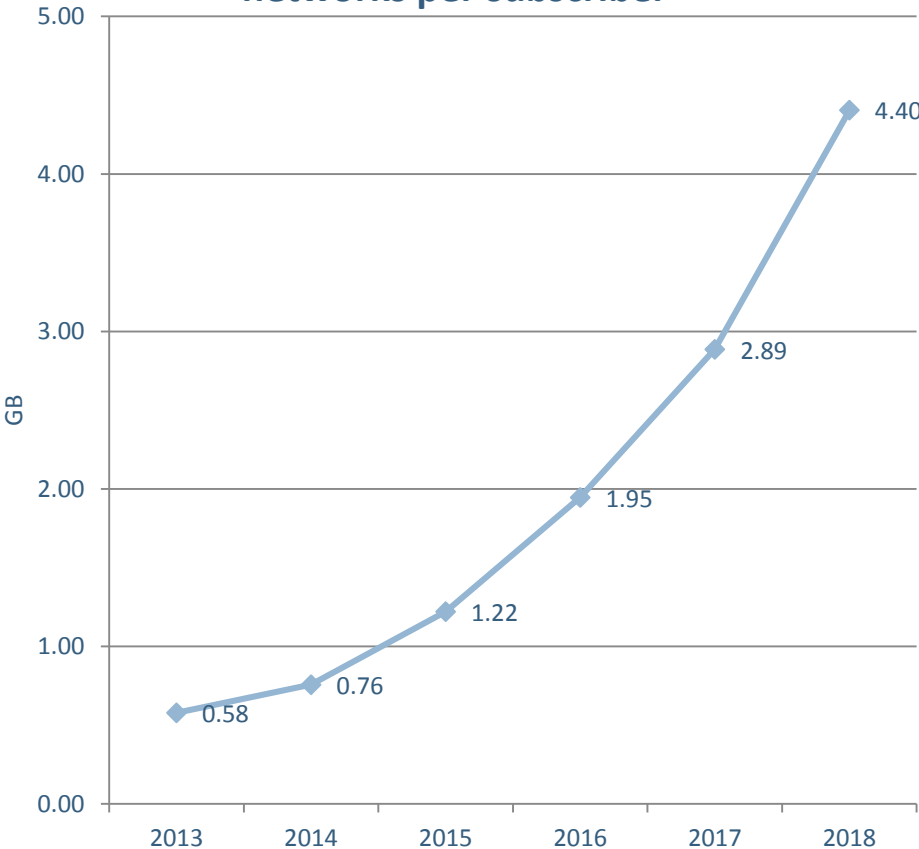
Source: Communications Committee

Internet traffic in mobile networks

Internet traffic in mobile networks



Monthly internet traffic in mobile networks per subscriber

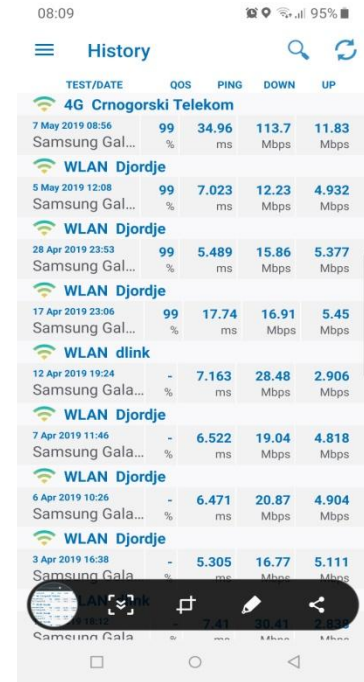
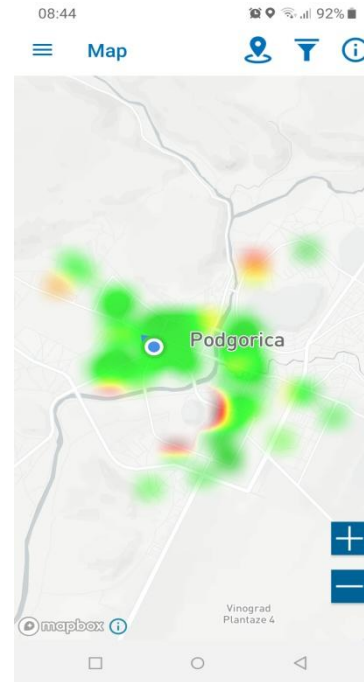
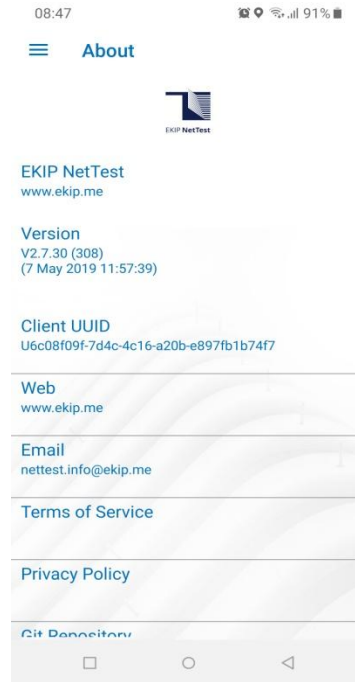
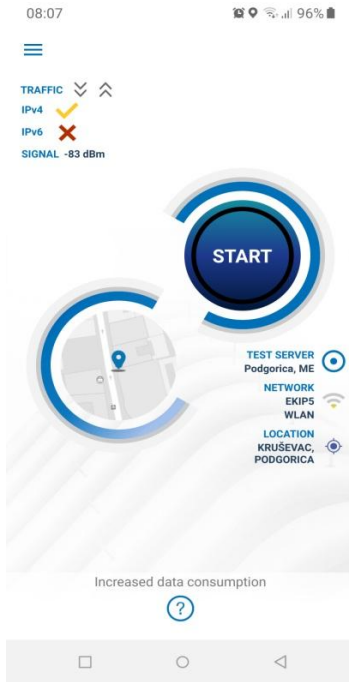


Source: EKIP, 2018

Agency's activities for development of NGA

- Shared use of electronic communications infrastructure (regulatory control of condition for use)
- Conditions for building electronic communications networks and infrastructures (Rulebooks and Recommendations on spatial planning documents)
- Establishing MIXP
- Mapping of electronic communications infrastructure
- Monitor of QoS for Internet access service
- Strengthening competition

EKIP NetTest - nettest.ekip.me



- Open source system for QoS Internet access measurements
- Mobile and web clients

Goals from Strategy for development of Information society 2020

| Indicator | Data for 2016 | Goals for 2018 | Data for July 2019 | Goals for 2020 |
|---|---------------|----------------|--------------------|----------------|
| NGA coverage % of HH with NGA coverage NGA (30 Mb/s) | 26,5% | 60% | 76% | 100% |
| HH penetration of fixed BB connections % of HH using fixed BB access (2 Mb/s) | 53,3% | 80% | 81,9% | 100% |
| Share of fast broadband access connections % of fast BB fixed Internet access connections (30 Mb/s) In total number of fixed BB connections | 3,6% | 30% | 55,8% | 70% |
| HH penetration of ultrafast broadband connections % of HH using ultrafast broadband fixed access (100 Mb/s) | 0% | 20% | 8,1% | 50% |

Future plans

- Strategy for development of information society 2020.
 - ▣ Coverage of fast broadband access >30Mb/s - 100% population 2020.
 - ▣ 50% of households should be subscribed to ultrafast broadband access >100Mb/s - 2020.

- Mapping of broadband access

- Ministry of economy prepared draft Law on measures to reduce the cost of deploying high-speed electronic communications networks - Directive 2014/61/EU

Thank you!

www.ekip.me

vitomir.dragas@ekip.me