Setting the Regional Context on Connectivity

Mr. Jaroslaw Ponder, Head of ITU Office for Europe
International Telecommunication Union

EUR1: Broadband infrastructure, broadcasting and spectrum management

EUR2: A citizen-centric approach to building services for national administrations

EUR3: Accessibility, affordability and skills development for all to ensure digital inclusion and sustainable development

EUR4: Enhancing trust and confidence in the use of information and communication technologies

EUR5: Information and communication technology-centric innovation ecosystems

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Connectivity:
Enabling Economic Growth

- **10% increase on fixed and mobile BB** penetration = increase in GDP
  - Fixed: **0.46%**
  - Mobile: **2.1%**
- **Digitization 10%** increase in the CAF Digital Ecosystem Development Index results in **1.4%** growth in GDP p.c.

Mobile broadband generates a **larger economic contribution** than fixed broadband, when examined globally.

Developing countries **benefit more from mobile broadband** than industrialized countries.

Developed countries with high penetration of fixed broadband enjoy **larger benefit from the technology** than developing nations.

The **economic contribution of digitization** is higher in advanced economies than in emerging countries.

Digitization contributes significantly to **labour** and total **factor productivity**.

The development of digitization is driven by **institutional and regulatory factors** and not only by variables such as economic development.

Digitization accelerates when a country introduces **structural changes in policy and institutions** which are related to digital technologies – after a time lag.

ITUPublications

International Telecommunication Union
Development Sector

How broadband, digitization and ICT regulation impact the global economy
Global econometric modelling
November 2020

http://handle.itu.int/11.1002/pub/816ff1af-en

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EUR1: Broadband infrastructure, broadcasting and spectrum management

- **Regional Development Forum**
  – 28 May 2020, online
- **ITU Webinar on Towards Strengthened Impact of ICTs on Economic Development in Europe**
  – 15 June 2020, online
- **ITU Seminar for Europe and CIS on Spectrum Management and Broadcasting**
  – 1-2 July 2020, online
- **ITU Regional Forum for Europe: 5G Strategies, Policies and Implementation**
  – 22-23 October 2020, online
- **ITU Regional Regulatory Forum for Europe on "Regulation Supporting the Digital Transformation"**
  – 30 November – 1 December 2020, online

- **Assistance on Spectrum and Frequency Planning**
  - Moldova
  - Albania (ongoing)
- **Assistance on IPv6**
  - Montenegro
- **Regional Studies**
  - 5G country profiles in non-EU countries
  - Implementing 5G for Good: does EMF matter?
  - Infrastructure sharing and co-deployment in Europe: good practices based on collaborative regulation (new)
  - Broadband Mapping Systems in Europe and Regional Harmonization Initiatives (new)
  - Regional Assessment on EMF and Risk Communication Challenges (forthcoming)

Introduction

Development trends since last cycle (2017-2020)

- Overall approach to connectivity in the 46 countries of Europe region, tracking trends in:
  - the mobile market
  - fixed, and satellite broadband
  - access, use, skills and the gender divide
  - ICT prices
  - Regulation
- It gathered input from Europe region stakeholders at….

RPM (Regional Preparatory Meeting)

- RPM is the first steppingstone of the WTDC process.
- Establishes regional priorities to be taken globally at the…

WTDC 2021

- Regional initiatives drive our work every 4 years.

Digital Trends Report

READ THE FULL REPORT→

https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC21/Documents/RPM/EUR/Digital-Trends_Europe-E.pdf

1. Connectivity Access

Figure 6: Satellite broadband subscriptions 2017-2018, Europe region
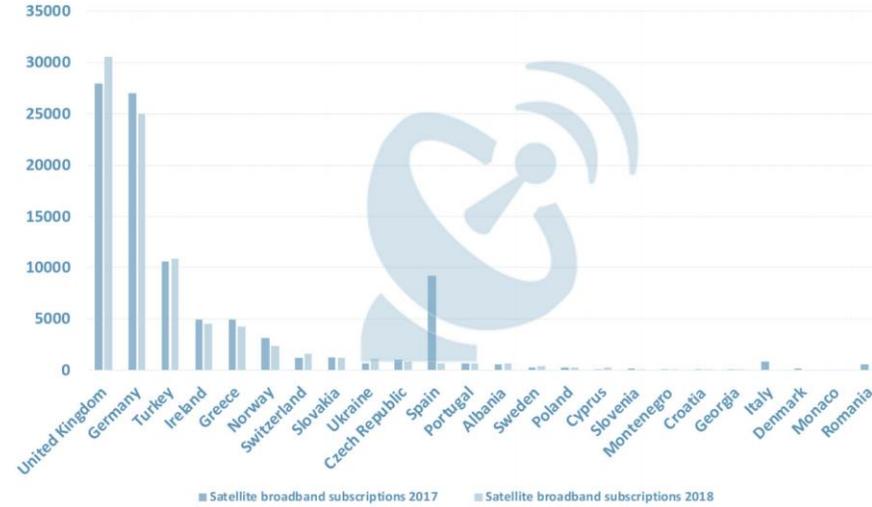
Figure 7: Fixed-broadband subscriptions per 100 inhabitants, 2019, Europe
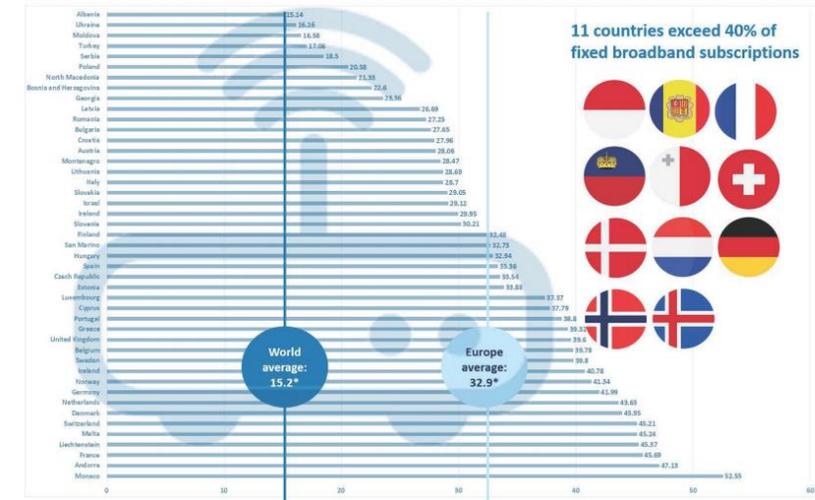
Figure 4: Mobile cellular subscriptions 2019, 45 European countries
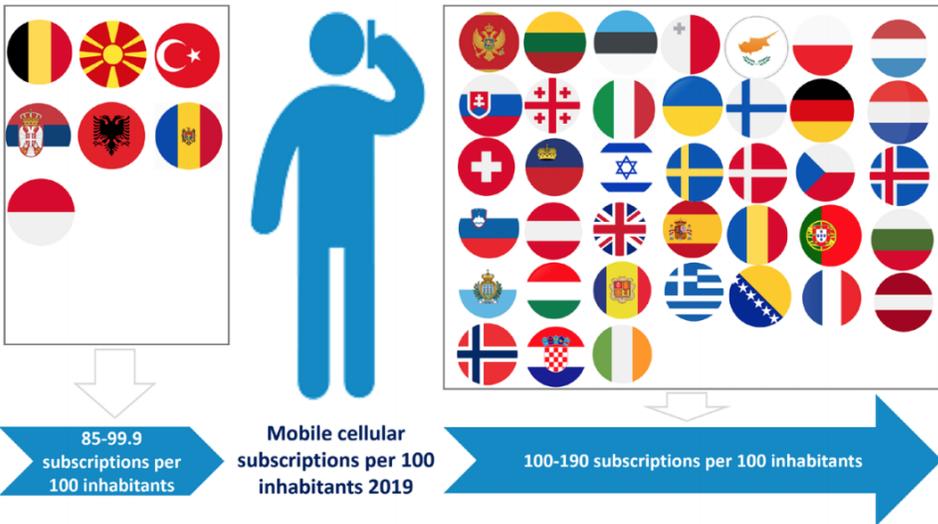
Figure 5: Active mobile broadband subscriptions per 100 inhabitants, 2019, 45 European countries
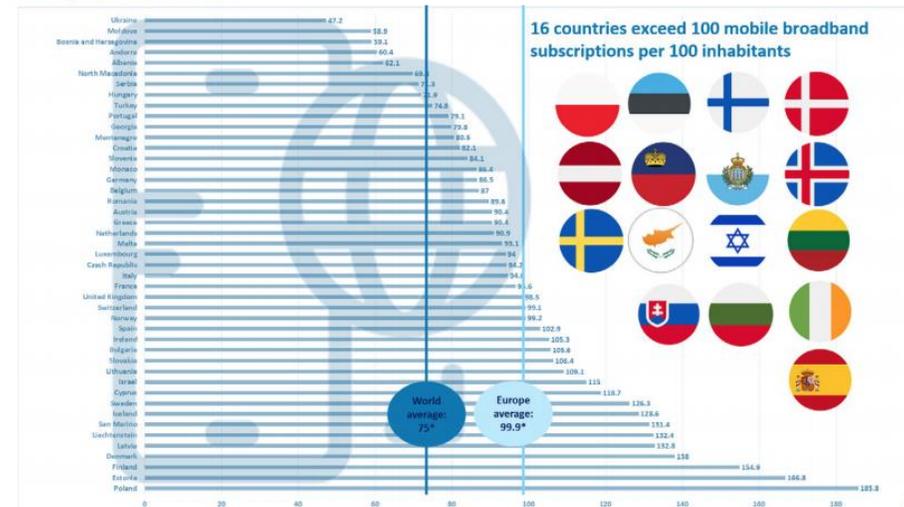
2. ICT Prices and Affordability

Prices have followed a downward trend over the last four years across the world, including for mobile-voice, mobile-data and fixed-broadband.

- **Europe has the most affordable prices**, closely followed by the Commonwealth of Independent States (CIS) region.

- Europe has the **most affordable mobile-data** baskets relative to income: 32 countries have a basket costing < 1% of GNI p.c. and all are < 2.1% of GNI p.c.

- Europe has also the **lowest fixed-broadband basket price** as % of GNI p.c. (1.5%).

Figure 14: Mobile-data prices as a percentage of GNI p.c. and monthly data allowance, Europe, 2019
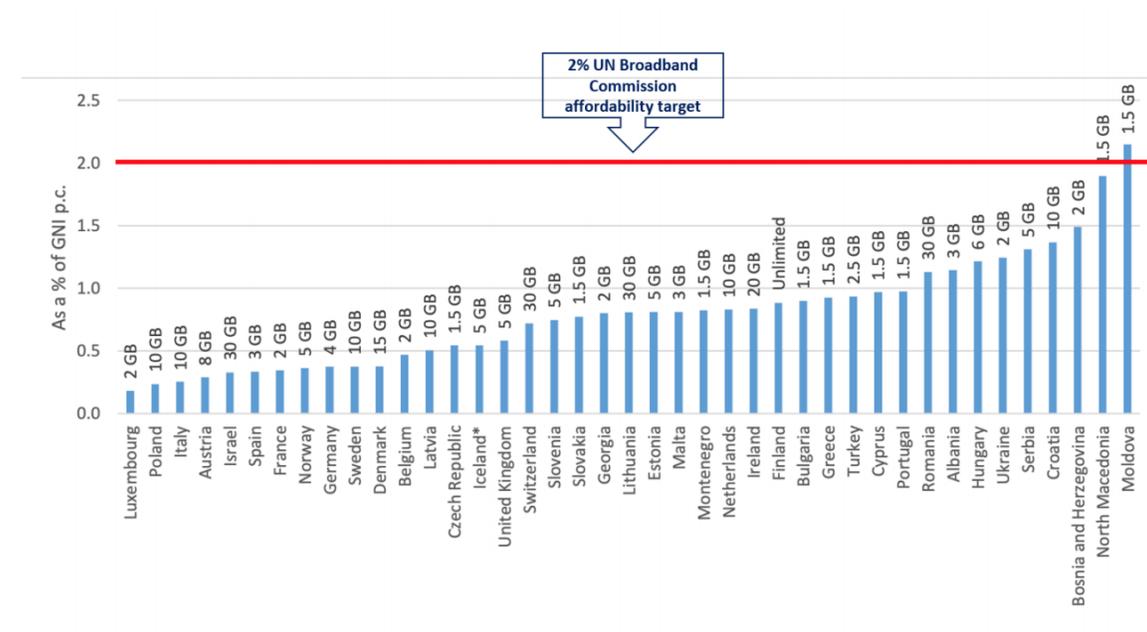
Source: ITU, adapted from "Measuring Digital Development, ICT Price Trends 2019"

3. Other Items covered: Use, Skills and the Gender Divide

Figure 9: Household access, individuals using the Internet, total and by gender, 2019, Europe and world

Figure 13: Basic, standard and advanced ICT Skills, 2017-2019, European countries

Figure 11: Proportion of households with Internet access, 2019 and CAGR 2017-2019 in brackets
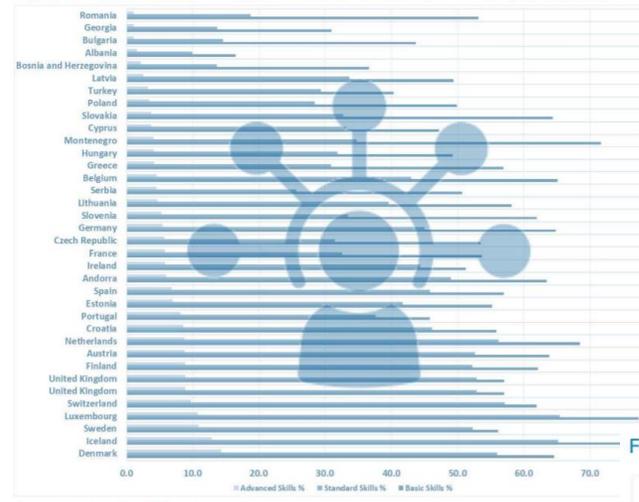
Figure 12: Individuals using the Internet by gender, European countries, 2019*
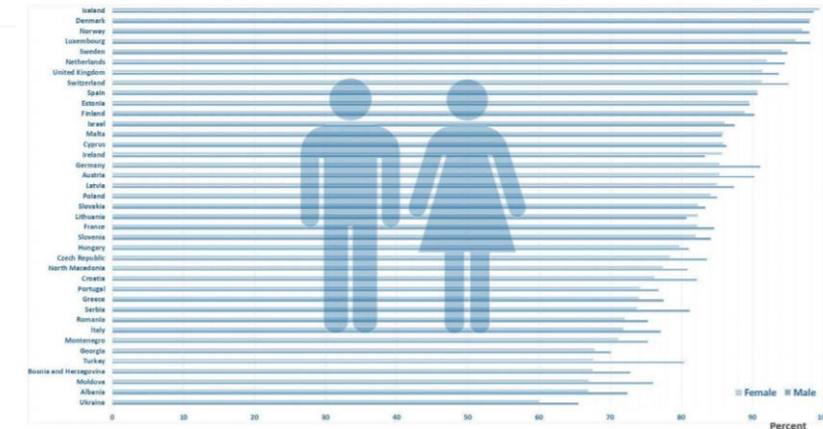
Source: Based on ITU WTI Database 2019, *figures for Ukraine, North Macedonia, Luxembourg, Italy, Ireland and Iceland are for 2018

3. Other items covered: Regulation

Figure 20: Evolution of the generations of ICT regulation, Europe, 2007-2019

Source: Based on ITU data, 2019 and 2020
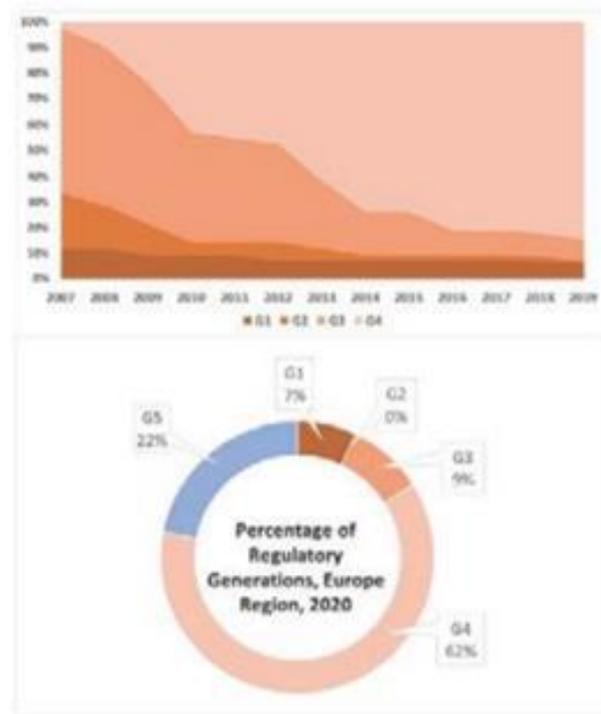
The G5 Benchmark for regulatory excellence:

- Gold standard for **collaborative regulation**: new tool that fast tracks collaborative, cross-sector regulation to help **navigate complex digital landscape**.
  - Sets out new goals for regulatory excellence.
  - Highlights shortcomings in the pursuit of SDGs and proposes solutions.
  - Dives deep into policy trends.
  - Enriches global policy debate.

- Europe leads the benchmark with **10 countries classified as G5** and 39 countries classified G4 or G5.

Main Takeaways

- **Europe region leads globally** on all areas of ICT infrastructure, access, and use and other indicators, including ICT affordability and regulation.

- **Digital divide persists**, at all levels but rural Internet access by household has increased to 78% and the gender gap has decreased. Most European countries have achieved levels of basic ICT skills above 40 per cent, but great variation remains in relation to standard and advanced skills.

- The **gap** across countries is particularly **evident between EU and non-EU countries** of Europe region, with some notable exceptions. Mostly, **South Eastern European countries** present **significant opportunities** for acting on all the areas covered by the study.

ITU in the Context of UN Cooperation

A focus on 9 non-EU countries of Europe region

"Bridging the **connectivity divide**" adopted as priority by WTDC-17 and **renewed as a top priority** for Europe region for the next implementation period of 2022-2025.

Redesign of the UN Sustainable Development system and **reinforced collaboration** between the ITU and the Resident Coordinators (RC) system

ITU Office for Europe seeks to contribute to the process as a:

[1] **trusted partner** to support the digital transformation in all nine countries and beyond

[2] **collaborator and implementer** for joint projects, capacity building and training activities.

ITU Office for Europe co-facilitates the **UN Brussels' Team Taskforce on Digitalization for Sustainable Development**

ITU co-chairs with UNECE the **United Nations Group on Digital Transformation for Europe and Central Asia (UN-DTG4ECA)**

ITU engages in **UN Country Teams** of nine countries contributing in its capacity as **UN Agency for ICTs**

Background Paper: *The Status of Connectivity in 9 non-EU countries of Europe Region*

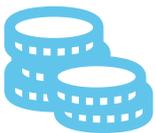**READ THE FULL REPORT→** https://bit.ly/3aWIubB

Introduction

As part of the Regional Initiative for Europe 1 on "broadband infrastructure, broadcasting and spectrum management", and in the context of the UN Coordination mechanism, the ITU Office for Europe provides the most accurate snapshot of the 9 countries for identified official indicators of connectivity as of December 2019, thereby establishing a baseline for the countries for future analysis.

Each country profile covers the following:

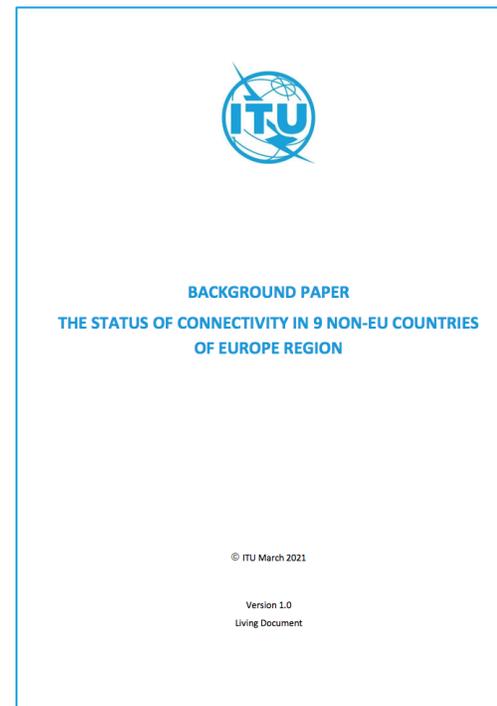1. ## Available Connectivity
   Is connectivity available?

2. ## Affordable Connectivity
   Is connectivity affordable?

3. ## Connectivity Uptake
   What is connectivity uptake?

BACKGROUND PAPER

THE STATUS OF CONNECTIVITY IN 9 NON-EU COUNTRIES OF EUROPE REGION

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Version 1.0
Living Document

Active mobile-broadband subscriptions per 100 inhabitants

Across Europe region, growth in active-mobile broadband subscriptions per 100 inhabitants between 2015 and 2019 stands as a testament to the advanced nature of the mobile market in Europe. Ukraine, in particular, exhibited growth in the mobile market, with a considerable connectivity increase of 490.1% from 2015 to 2018. However, it remains the Member State with the lowest active mobile-broadband subscriptions as of 2018, noting room for further improvement. Other noteworthy examples of growth are Turkey, which increased its active mobile broadband subscriptions per 100 inhabitants by 50.3% from 2015 to 2019, and Georgia, which increased its subscriptions by 47.9% over the same period. Such growth has not been consistently positive, however. As evident in Figure 8, Albania achieved its peak of subscriptions in 2017, and has thus experienced a decrease of 11.8% in the period from 2017 to 2019. Similarly, Bosnia and Herzegovina achieved its peak in 2018 and saw a setback of -14.6% in the last year, despite overall positive growth from 2015.

Figure 8: Active mobile broadband subscriptions per 100 inhabitants

Figure 8: Bar chart depicting Active Mobile Broadband Subscriptions per 100 inhabitants across 9 countries in study over period from 2015-2019, with comparisons to 2019 European Union average (27 countries) and Europe region average (45 countries). Note: the Europe region average exludes Andorra and Ukraine, for which 2019 data is unavailable.
Source: ITU, Based on WTI Database

As with fixed broadband subscriptions, the nine non-EU countries in question—Albania, Bosnia and Herzegovina, Georgia, Moldova, Montenegro, North Macedonia, Serbia, Turkey, and Ukraine—still fall beneath the averages of both the 27 EU countries and the 45 countries comprising the Europe region. However, these gaps are closing quickly, due to the accelerated annual rates of growth of the nine countries
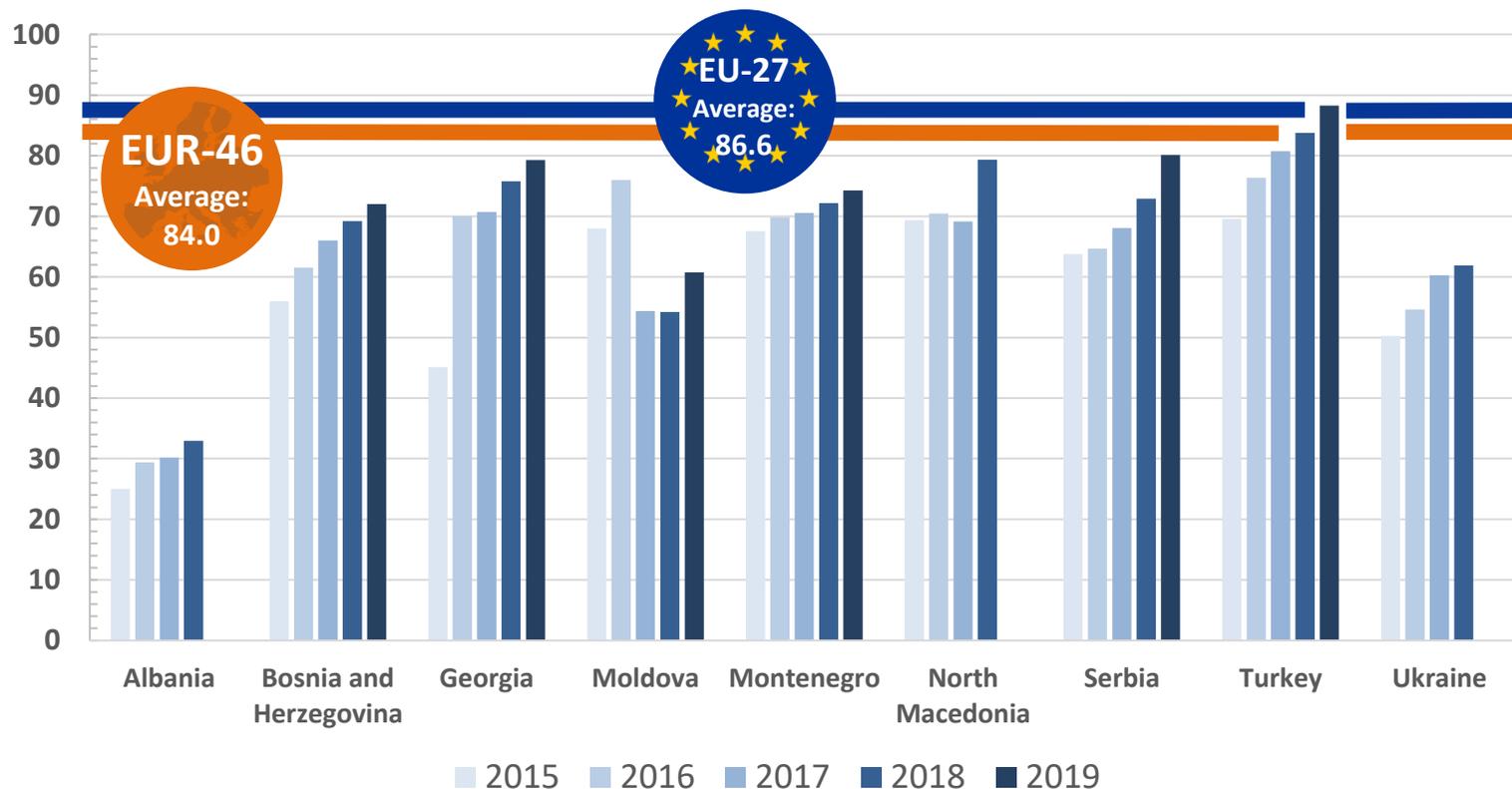
1. Available Connectivity (i)

Population Covered by 4G

- **95% or greater** in population covered by 4G coverage.
- **15.7 million people remain without** 4G access in the countries.
- **Ukraine** exhibited extraordinary growth from 2015 and **Bosnia & Herzegovina** has steadily initiated implementation since 2018
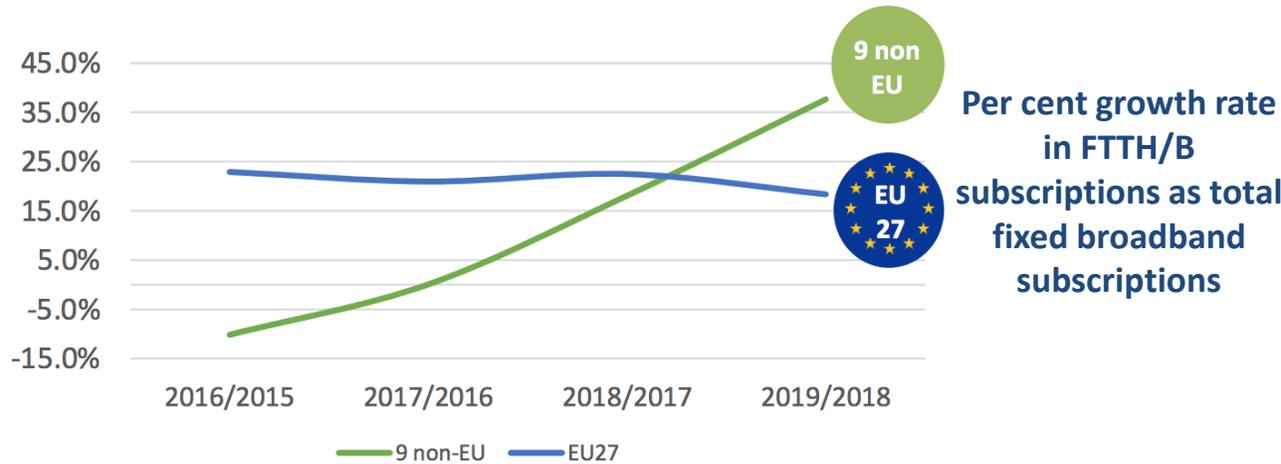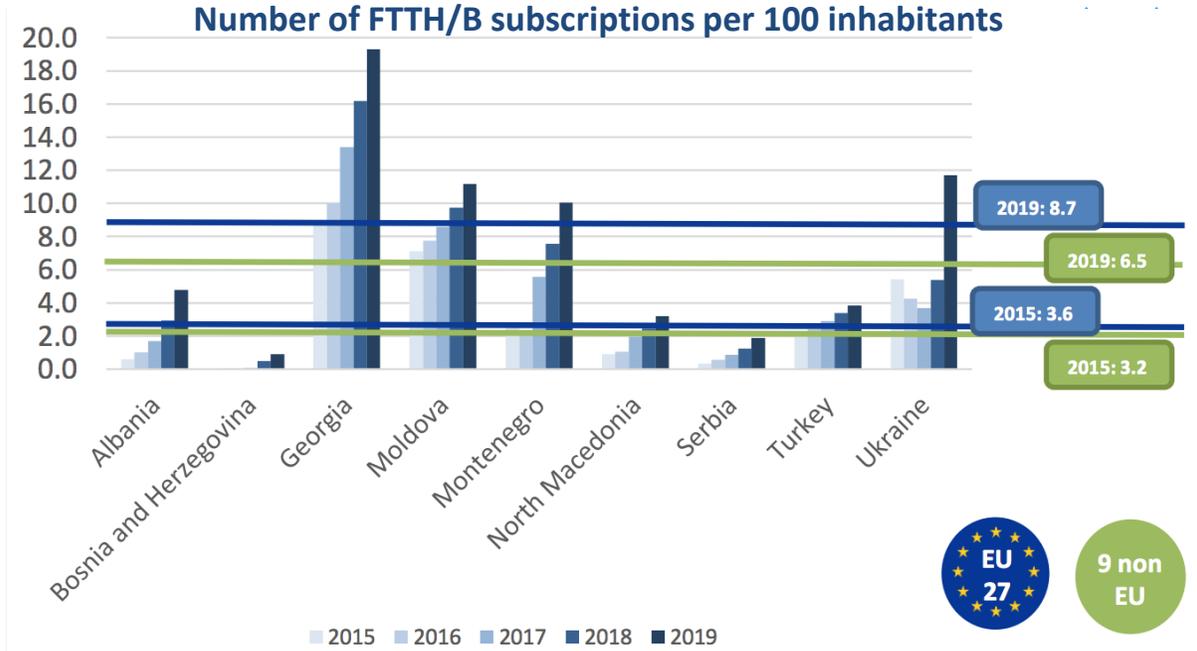
Households with Internet Access

- 9-country **average at around 78%**
- **Turkey surpassed both Europe region and EU averages** in 2019, with 88.2% of households having access to the Internet at home.

Estimated Proportion of Households with Internet Access at Home, 2015-2019

EU-27 Average: 86.6

EUR-46 Average: 84.0

Legend: 2015, 2016, 2017, 2018, 2019

Countries: Albania, Bosnia and Herzegovina, Georgia, Moldova, Montenegro, North Macedonia, Serbia, Turkey, Ukraine

1. Available Connectivity (ii)

- Fibre-to-the-home (FTTH) appear to be better prepared to respond to spikes in broadband traffic.
- Georgia is leader among the 9 countries, reporting almost 20.0 FTTH/B subscriptions per 100 inhabitants (close to EU countries leaders) and **Moldova**, **Montenegro** and **Ukraine** slightly above the EU27 average in 2019

- **Growth in relative weight of fibre subscriptions** in relation to total subscriptions has been stable in the EU for the past 5 years, *but* **spike from 2018 to 2019 in these 9 countries**
- Potential for the 9 countries to **leapfrog** and continue having a fibre-led expansion of the penetration of fixed broadband..

Number of FTTH/B subscriptions per 100 inhabitants

2019: 8.7
2019: 6.5
2015: 3.6
2015: 3.2

Legend: EU 27 | 9 non EU

■ 2015 ■ 2016 ■ 2017 ■ 2018 ■ 2019

Per cent growth rate in FTTH/B subscriptions as total fixed broadband subscriptions

9 non EU | EU 27

— 9 non-EU — EU27

18

2. Affordable Connectivity

Price of data-only mobile broadband 1.5 GB (as a % of GNI pc)

EUR-46 Average: 0.8

EU-27 Average: 0.6
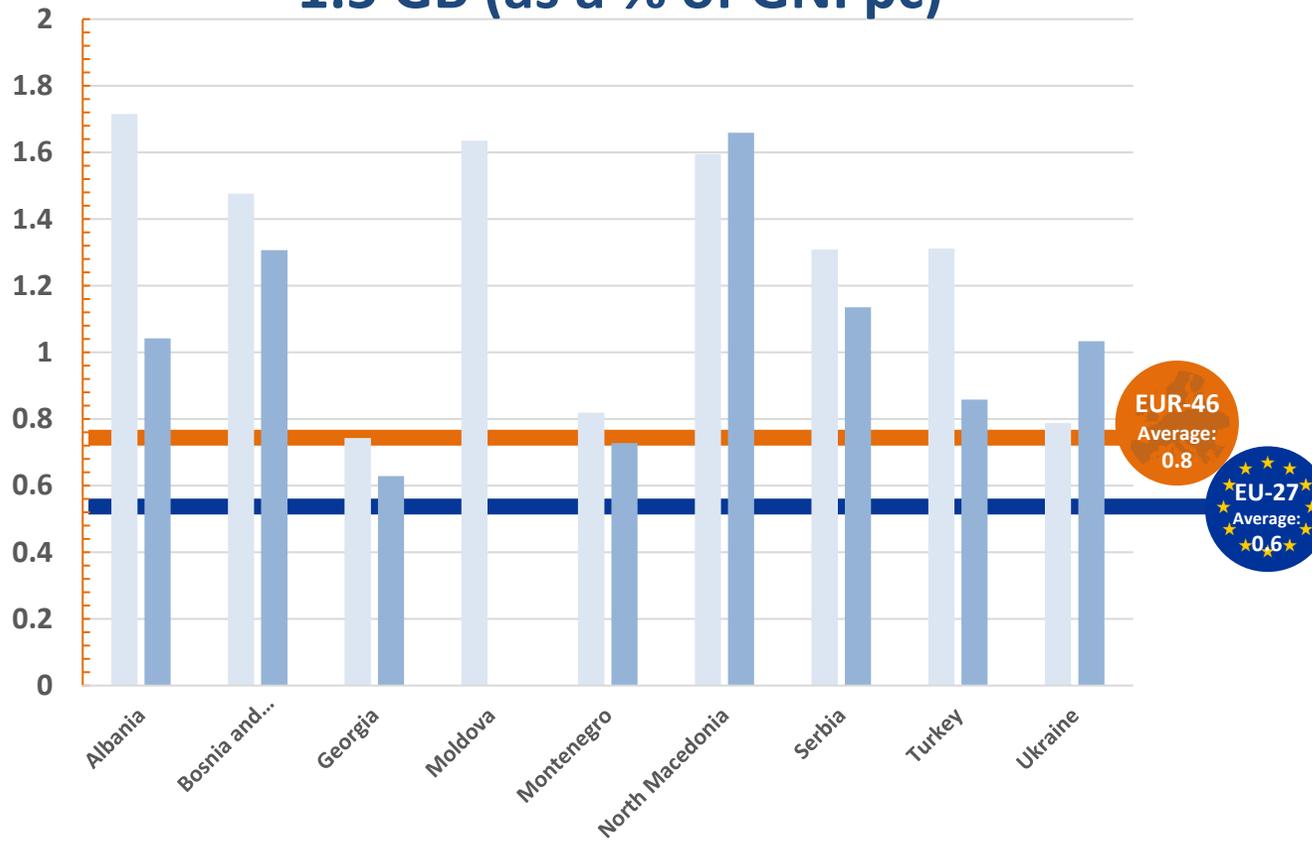
Price of fixed broadband 5 GB (as a % of GNI pc)

EUR-46 Average: 1.5
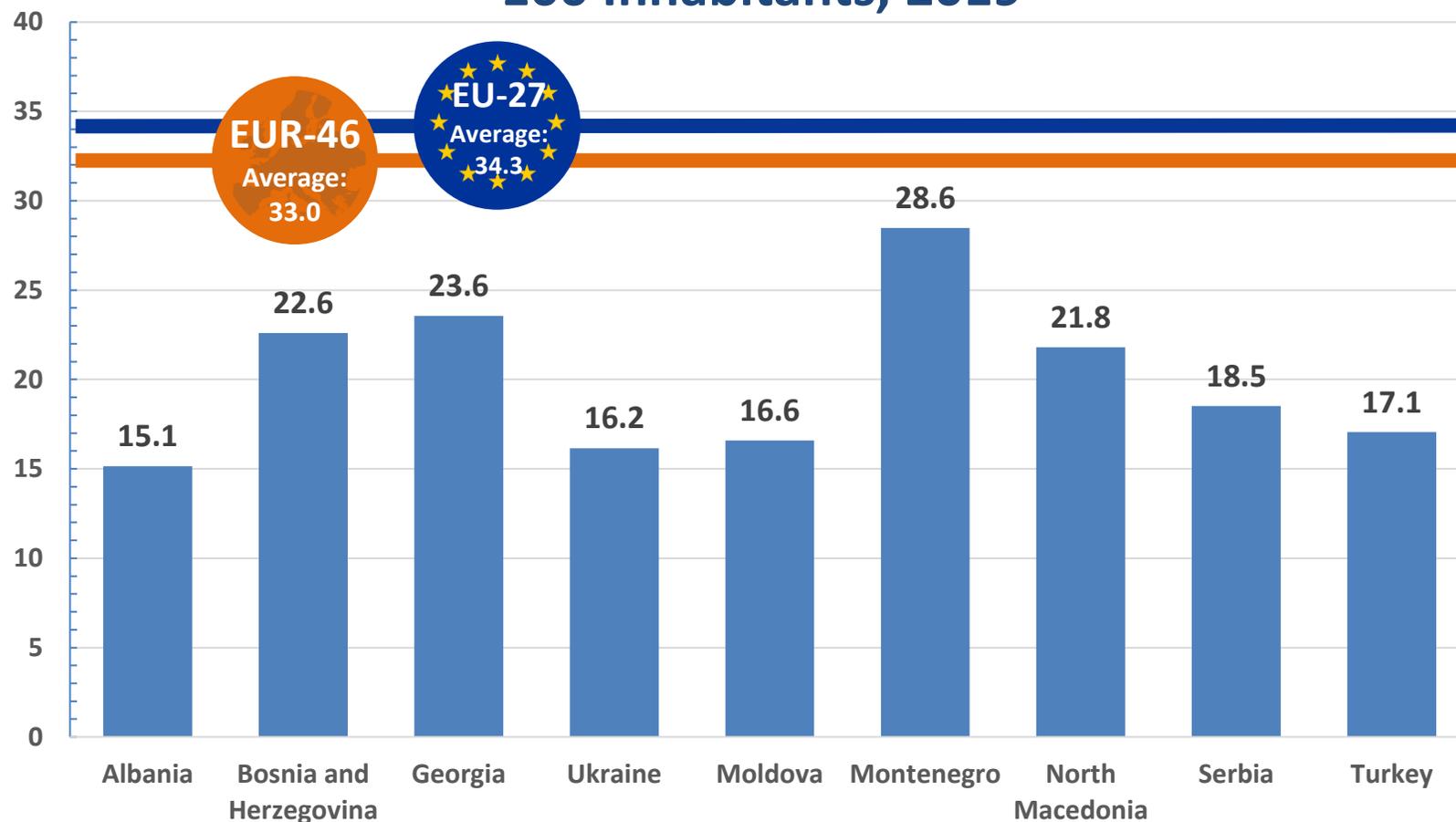
EU-27 Average: 1.06

2018   2019
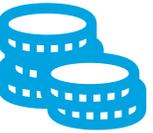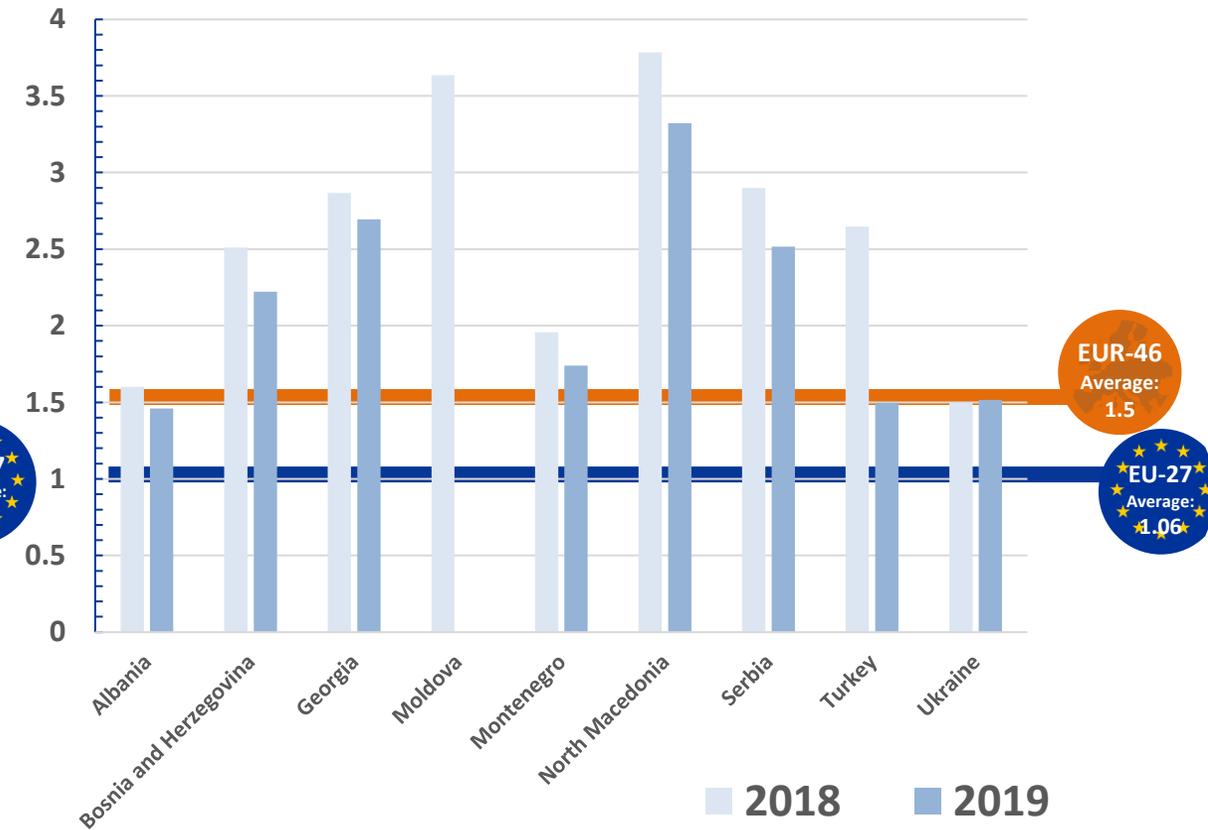
3. Connectivity Uptake (i)
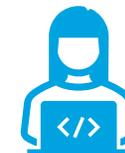
- All nine countries saw an **increase in fixed broadband subscriptions** per 100 inhabitants from 2015 to 2019.
- All nine countries fall short of both EU average and average of Europe region.
- **Annual growth** of the nine countries in the far **outpaces** both EU and Europe region, at at an annual average of **8.7%** from 2015-2019.

Fixed Broadband Subscriptions per 100 Inhabitants, 2019

EUR-46 Average: 33.0

EU-27 Average: 34.3

Country	Value
Albania	15.1
Bosnia and Herzegovina	22.6
Georgia	23.6
Ukraine	16.2
Moldova	16.6
Montenegro	28.6
North Macedonia	21.8
Serbia	18.5
Turkey	17.1

Elaborated based on data available in the ITU World Telecommunication/ICT Indicators Database online (2020): http://handle.itu.int/11.1002/pub/81550f97-en
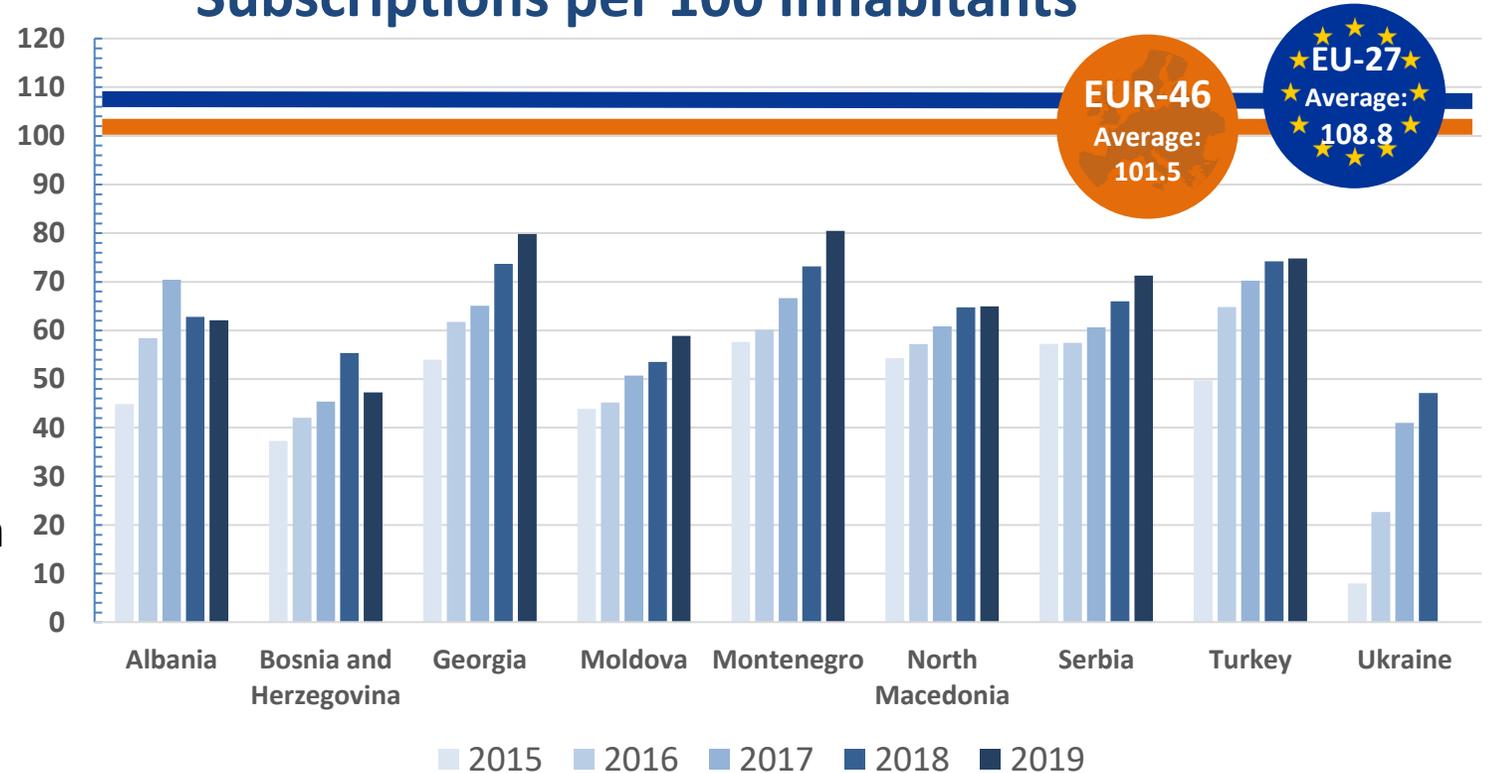
3. Connectivity Uptake (ii)

- Growth in active-mobile broadband subscriptions per 100 inhabitants between 2015 and 2019 is testament to the **advanced nature of the mobile market** in Europe.

- All countries fall **under EU and Europe region averages**. Thus, **disparities exist** within Europe and there is space for continued infrastructure development in the region.

- However, gaps closing quickly—**accelerated annual growth rates** in 9 countries relative to Europe region

Active Mobile Broadband Subscriptions per 100 Inhabitants

EUR-46 Average: 101.5

EU-27 Average: 108.8

Legend: 2015, 2016, 2017, 2018, 2019

Countries: Albania, Bosnia and Herzegovina, Georgia, Moldova, Montenegro, North Macedonia, Serbia, Turkey, Ukraine

Elaborated based on data available in the ITU World Telecommunication/ICT Indicators Database online (2020): http://handle.itu.int/11.1002/pub/81550f97-en

3. Connectivity Uptake (iii)

Computer Use in Previous Year

- 4/6 countries have experienced growth in computer use in the years presented.
- However, downward trend witnessed in Montenegro and North Macedonia.
- Turkey presents another **ripe opportunity for development**, less than half of Turkish population accessed a computer in 2018
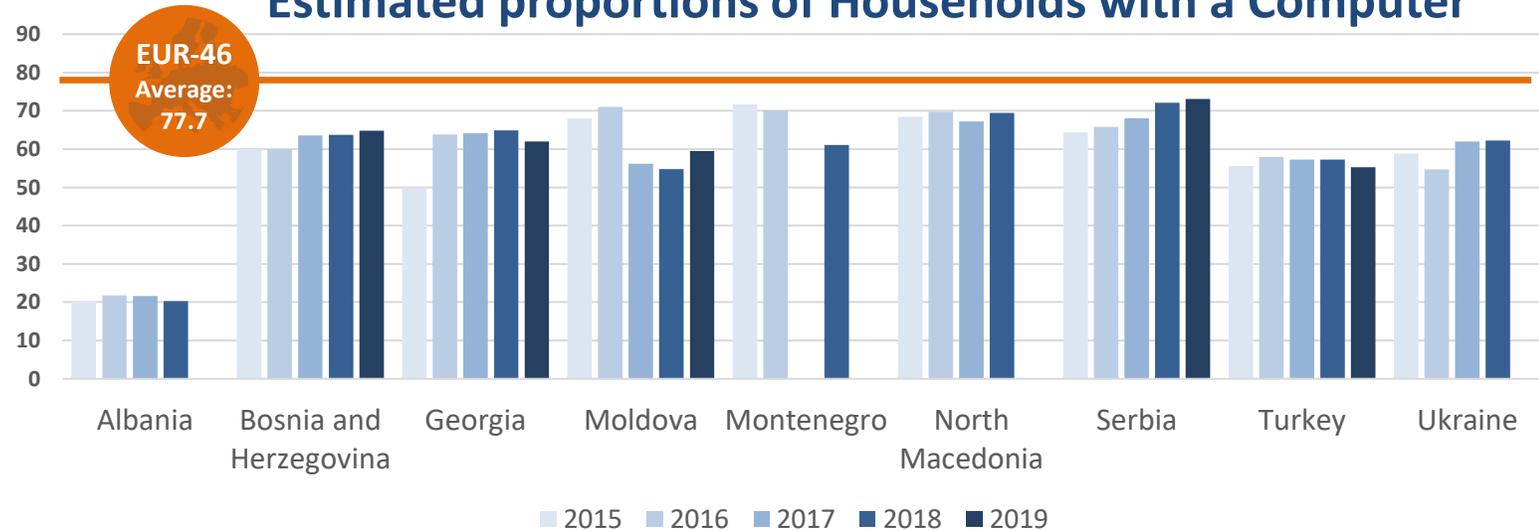
Households with Computer

- Accessing the Internet is not only choice to subscribe; it requires the use of a **device.**
- **Negligible growth** (and some negative growth) in proportion of households with a computer since 2015: Average CAGR for the nine countries in consideration was 0.57%.
  - 41.4% **(20.5 million)** households still without a computer at home

Proportion of individuals who used a computer (from any location) in the last 12 months

	2015	2016	2017	2018	2019
Bosnia and Herzegovina		52.86	59.9	61.0	62.2
Georgia	49.4	49.8	48.4	52.7	55.8
Montenegro	67.2			56.1	
North Macedonia	69.2		66.4		
Serbia	65.8	67.2	67.6	74.1	
Turkey		44.8	44.5	45.5	

Estimated proportions of Households with a Computer

EUR-46 Average: 77.7

Legend: 2015 2016 2017 2018 2019

Countries: Albania, Bosnia and Herzegovina, Georgia, Moldova, Montenegro, North Macedonia, Serbia, Turkey, Ukraine
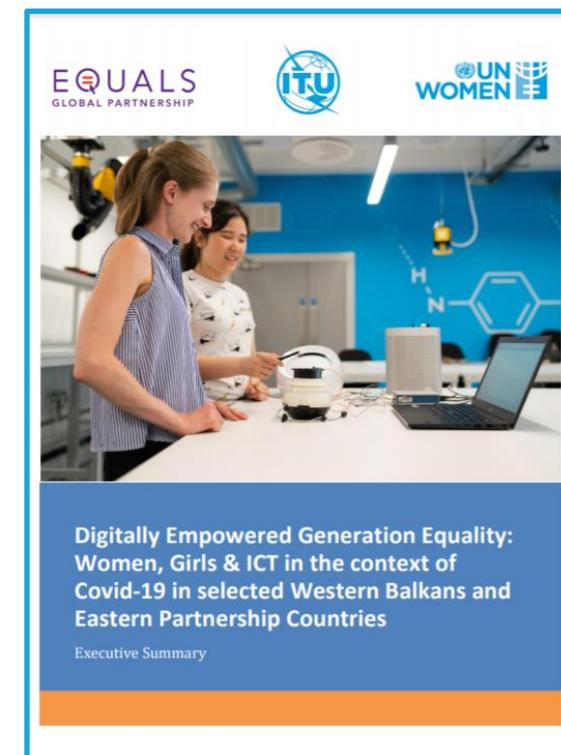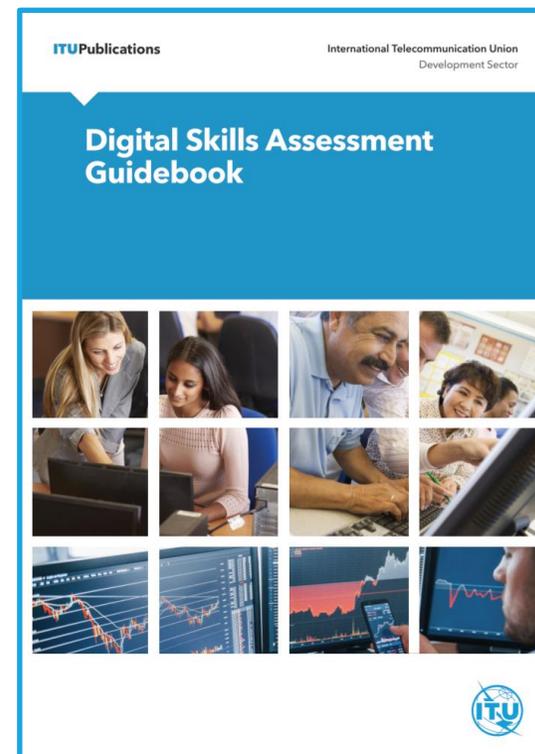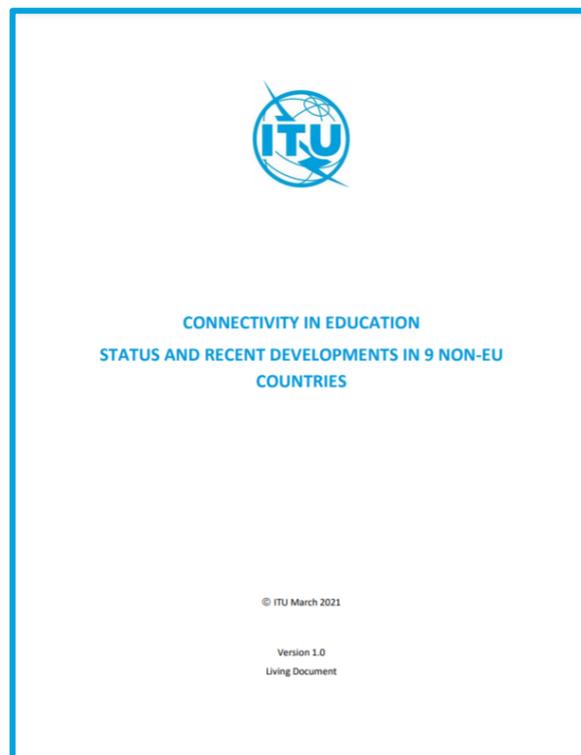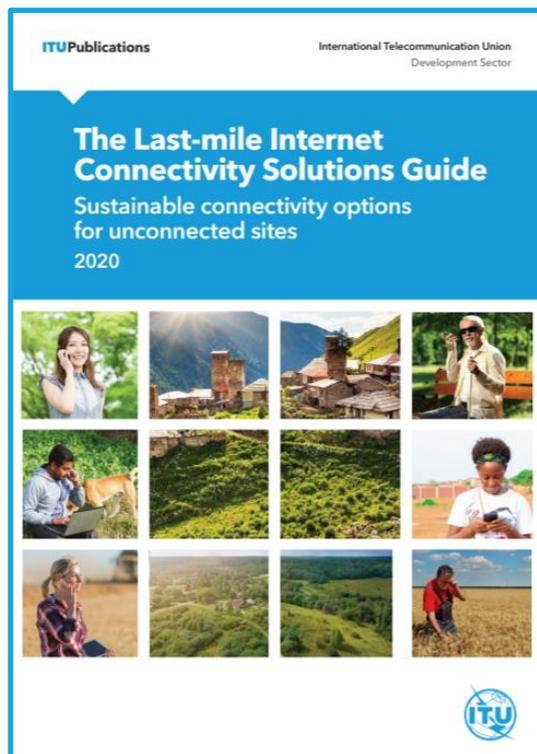
Main Takeaways

- **Mobile has been the cornerstone** of broadband development in the 9 countries.

- There has been a **spike in FTTH/B adoption** between 2018 and 2019, despite fixed deployment still lagging in terms of connections per household and prices remaining higher than EU and Europe region averages.

- **Disparities in device availability, access and usage may preclude advances** in connectivity.

- **Growth rates are improving** for penetration of broadband subscriptions, as well as for device usage, on almost all fronts since 2015. But substantial **gaps remain** in terms of final outcomes.

ITU Initiatives Filling the Gap

As the UN Agency in charge of ICTs, the ITU provides **technical assistance** in a variety of fields relating to the digital sphere. The following areas are particularly important for connectivity:

National Broadband Strategies

Broadband Mapping

Last Mile Connectivity

IPv6

Spectrum Policy Planning

Frequency Coordination

Capacity Building

- Thank you -

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