



## DIGITAL SKILLS IN SOUTH-EASTERN EUROPE



### REGIONAL ASSESSMENT OF THE NATIONAL APPROACHES FOSTERING DIGITAL SKILLS DEVELOPMENT

# EXECUTIVE SUMMARY

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## 1. INTRODUCTION

In December 2020 the ITU completed a regional assessment of the national approaches fostering digital skills development in South-Eastern Europe, including Albania, Bosnia and Herzegovina, Georgia, Moldova, Montenegro, North Macedonia, Serbia, Turkey, Ukraine

The objective is to strengthen regional and national mechanisms facilitating digital skills development. The final report detailed:

- Existing national policies and plans for digital skills development.
- The key stakeholders playing a role in digital skills.
- The current status of digital skills related resources.
- The existing levels of ICT usage and current digital skills across in government and industry.

**It is important to note that the data available was up until the end of 2019. The impact of Covid during 2020 is not reflected in these findings.**

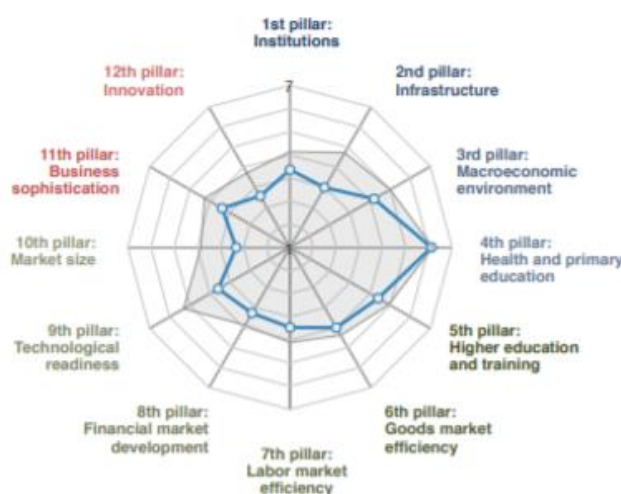
This executive summary for digital skills in South-Eastern Europe provides an overview of:

- Macroeconomic Conditions
- Skills Development Policies in the Region
- Education
- Demand for and Types of Digital Skills
- Digital Skills Gaps
- ICT Infrastructure

## 2. MACROECONOMIC CONDITIONS

In 2019, South-Eastern Europe saw an average 1.9% real GDP growth with an average GDP per capita of \$6,000.

The shape of competitiveness index spider graph for the nine countries in South-Eastern Europe is very similar with noticeable strengths in the health and primary education pillar, macroeconomic environment pillar, higher education and training pillar and goods market efficiency pillar:



Average Competitiveness Index for South-Eastern Europe (source: World Economic Forum 2018)

The region has scope for continued economic growth, along with reforms in recent times that have resulted in more industrial diversification and market liberalisation. According to the IMF, a close eye needs to be kept on debt levels and youth unemployment. Actions and policies around digital skills development represent an opportunity to meet the latter challenge by enabling young people with a wider set of skills and competencies.

### 3. SKILLS DEVELOPMENT POLICIES IN THE REGION

In the region we see a variety of skills development policies that are either stand alone or part of wider national strategies for ICT and broadband. Countries have taken note of programs such as DigitalEurope and have developed their own “Digital” brands, creating wider public awareness. The Digital Agenda of Europe, centred around the single digital market, has helped provide policy domain guidance in South-Eastern Europe with countries setting their digital agenda strategies.

Digital agendas and roadmaps in the region have focused on several key objectives, including:

- Investment in the ICT infrastructure to deliver high-speed internet.
- Acceleration of digital transformation in the public sector
- ICT for education
- Investment in the improvement and efficiency of e-government
- Improvement of national e-services and knowledge management
- Inclusivity and digital gender equality
- Leveraging digital skills to promote innovation and entrepreneurship.

Overall, the region is flourishing with the creation of coordinated national ICT policies and new ICT legislation aiming to promote greater digital literacy alongside the liberalisation of the telecommunications sector. Though we see specific digital roadmaps in some countries, there is further scope for more specific digital skills investment. One example could be to increase investment in digital skills training in the public sector and the basic education sector.

### 4. EDUCATION

ICT for education has gained considerable traction in the region with several progressive policy domains and ongoing programs expanding the digitization of education systems. Some strong national examples include:

**Albania:** ICT for education now part of the national digital agenda targeting 100% internet access for education, equipping schools, and embedding ICTs into teacher training.

**Georgia:** Unified strategy of Education and Science emphasizing digital education and the teaching of ICTs being part of the national curriculum.

**Moldova:** “Digital Moldova” includes programs for digital education in compulsory general and continuing education and the inclusion program “digital skills for all”.

**Turkey:** “2023 Education Vision” document of the Ministry of National Education establishes the development of digital content and skills

## 5. DEMAND FOR AND TYPES OF DIGITAL SKILLS

Given the policies of ICT for education, a significant part of the populations in the 15- to 25-year-old range in South-Eastern Europe have what we define as intermediate digital skills.

Advanced digital skills are mostly amongst those who have completed university studies and those who work in the digital technology sectors.

The demand for digital skills in the region is driven by the changing nature of the economies and the desire amongst stakeholders in society to move towards digitalization.

Urgent areas needing increased skills:

- ❖ Teacher training in digital competencies
- ❖ Practical digital literacy for technical and vocational education
- ❖ More digitalization in the education sector. The Covid pandemic has accelerated the need for more virtual learning environments and online education.

Over the next 5 to 10 years the education systems need to produce advanced digital skills capabilities, especially in the automotive, communications, engineering, light industry, and energy sectors. The leading occupations in the IT market will include programmers, system engineers, project managers, database specialists, software architects and web designers.

Companies should make targeted investments focusing on employee reskilling and upskilling, utilizing workforce planning tools and predictive analytical models to plan for talent acquisition. Industries need the jobs market to support new positions in:

- Data analytics
- Programing, coding, and skills for developing artificial intelligence.
- IT project managers

## 6. DIGITAL SKILLS GAPS

In the private sector there is increasing demand amongst companies for intermediate and advanced digital skills and currently there are not enough people with those skills in the job market. The following are some key job types that industry needs to fill to drive their businesses:

- ✓ Cloud computing
- ✓ Artificial intelligence
- ✓ Cybersecurity
- ✓ IT architecture
- ✓ Mobile technologies
- ✓ Robotics and automation

The demand for digital skills currently exceeds the labour market supply and further investment in the digital infrastructure and capacity building is required to keep pace with demand in both the public and private sectors.

The lack of qualified labour is seen as one of the top constraints for business expansion amongst private sector stakeholders. Greater inclusiveness and diversity are real opportunities to fill any digital skills gaps and all countries who contributed to the report made special mention of the need for digital gender equality.

For future development of the digital economy and information society, strategies should identify priority sectors of the economy that require investment and define actions under the oversight of responsible institutions and agencies to support such investment.

All those who participated in the report emphasised the critical role of education achieving national development and digital objectives. Schools and education systems still have plenty of scope for improvements in the IT infrastructure, classroom technologies and digital content. An important feature is the need to increase teacher capacity and competencies in new technologies.

There is also a call amongst stakeholders for better alignment of the education system with the requirements of the labour market. Such investment in education will have significant positive impact on employment, professional skills, and hence economic development. Other strategies for filling digital skills gaps include:

- Active labour market programs, raising the level of digital skills in priority sectors.
- Certified training in digital competencies
- Design and digital skills studios
- Workshops and laboratories in technical and vocational institutions made also available to the wider community.
- Public and private sector investment in database, knowledge banks and information management systems

## 7. ICT INFRASTRUCTURE

The following table is the averaged key connectivity indicators of the nine countries of South-Eastern Europe with comparison to the EU and rest of the world.

Key Indicator (2017/2018)	Average of Nine SEE Countries	EU Countries	Rest of the World
Fixed telephone subs per 100 inhabitants	20.7	35.8	13.0
Mobile cellular subs per 100 inhabitants	119.5	120.5	103.6
Active mobile broadband per 100 inhabitants	62.1	85.9	61.9
3G coverage (% of population)	97.6	98.3	87.9
Households with a computer (%)	62.6	78.6	47.1
Households with internet access (%)	69.0	80.6	54.7
International bandwidth per internet user (kbit/s)	101.6	117.5	76.6
Fix broadband subs per 100 inhabitants	16.9	30.4	13.6

Average Connectivity Indicators for SEE Countries and Comparison with EU and RoW (Source: ITU, June 2018)

On all indicators, South-Eastern Europe is ahead of the rest of the world and in mobile communications is very similar to the overall European average.

Internet access and high-speed broadband have scope for growth in the SEE countries and clearly this part of the ICT infrastructure is closely aligned with advanced digital skills and ICT for education. Further investment in high-speed internet access and promoting greater subscriber numbers will bring about positive developments in the digital space in South-Eastern Europe. This then unlocks the skills gaps in artificial intelligence, cybersecurity, robotics, big data, and cloud-based technologies.