

# Kosovo in the Digital Agenda of the Western Balkans

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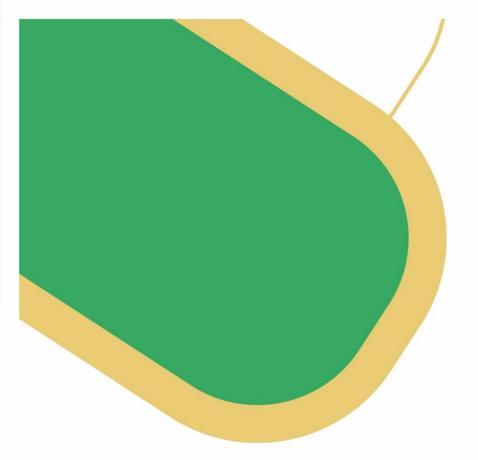
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## **List of Abbreviations**

Al	Artificial Intelligence		
AIS	Agency for Information Society		
ВСО	Broadband Competence Offices		
DESI	Digital Economy Society Index		
DIC	Digital Innovation Centres		
EC	European Commission		
EU	European Union		
GEANT	GEANT Gigabit European Academic Network		
HIS	Health Information System		
ICT	Information and Communication Technology		
ITP	Innovation Training Park Prizren		
KAS	Kosovo Agency of Statistics		
KODE	Kosovo Digital Economy Project		
KOS-CERT	Kosovo Computer Emergency Response Team		
KREN	Kosovo Research and Education Network		
KTA	Kosovo Tax Administration		
МоН	Ministry of Health		
NIS2	Network and Information Security Directive 2		
OECD	Organisation for Economic Co-operation and Development		
RAEPC	Regulatory Authority of Electronic and Postal Communications		
RCC	Regional Cooperation Council		
WB	Western Balkans		





# **Executive Summary**

The European Union (EU) Digital Agenda, launched in 2010, aims at accelerating the digital transformation of the European economy by developing digital infrastructure, advancing public services and supporting the digital transformation of businesses. It also aims at enhancing cybersecurity and creating a digital single market that will enable innovation and healthy competition. A derivative agreement of the EU's Digital Agenda is the Digital Agenda for the Western Balkans (WB). As part of this agenda, Kosovo\* has taken significant steps to implement these objectives by adopting laws and strategies aligned with EU standards, as well as undertaking concrete activities in the areas of infrastructure, digitalisation of public services and the digitalisation of processes.

Although Kosovo has made progress in areas such as governance, connectivity and digital education, it still faces several major challenges. These primarily include improving the digital skills of citizens and public administration officials, as well as continuing the digitalisation of public services. Furthermore, there is an immediate need to overcome chronic issues regarding the advancement of health information systems. On the other hand, the development and advancement of digital services in the education sector remains one of the key priorities. At the regional level, in terms of connectivity, Kosovo stands among the WB economies with the highest number of broadband connections and a high positive perception of reduced roaming costs. Additionally, concerning the adoption of laws in the fields of connectivity, digital identity and cybersecurity, Kosovo is aligned with EU regulations.

In a research study conducted by the Riinvest Institute in 2022 with enterprises in the manufacturing sector, it was found that enhancing digital skills among management and workers was crucial for the further progress of businesses. This reaffirms the importance of possessing these skills for the workforce. Properly addressing the enhancement of digital skills, along with improving digital infrastructure, will not only help improve the quality of public services but will also contribute to strengthening Kosovo's integration in the region and the EU market.

Future research should focus on monitoring Kosovo's progress in integrating and implementing new technologies, such as the application of "Big Data", "Cloud Systems", and "Artificial Intelligence" as well as digital skills development as part of important processes.

Taking into account the findings of the report, we recommend the following:

- Further expansion of the 5G network and simplification of procedures for the deployment of 5G supporting infrastructure.
- Expansion of public services provided on the e-Kosova platform, thus broadening the range of online services and further integrating them into the interoperability platform of state institutions. Additionally, increasing the promotion of the digital services offered on e-Kosova to citizens.

\* This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo Declaration of Independence

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- Regular publication of open and updated data from institutions on the open data portal.
- Providing training programmes for public officials on the use of new technologies and expanding support for digital skills development through awareness-raising initiatives.
- Updating and aligning the curricula of public and private universities with the demands of the labour market in the Information and Communication Technology (ICT) industry.
- Publishing updated data on developments in the ICT sector in Kosovo, including the number of graduates from this sector entering the labour market, the number of ICT specialists, the level of adoption of new technologies by businesses (Big Data, Cloud and Artificial Intelligence (AI)) and eCommerce trends.
- Operationalisation of the National Health Information System through the integration and further development of its constituent systems.
- Aligning Kosovo's legislation with the EU directives on open data and cybersecurity legislation with the EU's NIS2 directive<sup>1</sup>

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<sup>&</sup>lt;sup>1</sup> European Commission. (2022). Directive (Eu) 2022/2555 Of The European Parliament And Of The Council. <a href="https://eur-lex.europa.eu/eli/dir/2022/2555">https://eur-lex.europa.eu/eli/dir/2022/2555</a>. Accessed January 2025.





#### 1. Introduction

The objective of this report is to highlight the progress of Kosovo in the areas addressed in the Digital Agenda for the Western Balkans<sup>2</sup>, a joint initiative launched at the Digital Assembly in Sofia by the European Commission and the six Western Balkans, which supports the country's journey towards meeting the digitalisation objectives.

This report is primarily based on secondary sources, which include reports, strategic documents and policies as well as other materials published on the websites and social networks of local, regional and EU institutions. The starting point was the identification of key elements stemming from the Digital Agenda for the Western Balkans. After identifying the key areas, the process continued with the identification, collection and analysis of all relevant data, based on the main elements of the Digital Agenda for the Western Balkans presented in Figure 1. These data were further complemented with information from national strategic documents and conclusions from reports by international institutions. A comparative aspect was carried out on the measures originating from the Digital Agenda for the Western Balkans and the actions taken by WB economies in the region. An early working draft of this report was discussed with stakeholders in a round table organised specifically for this purpose. The suggestions from this round table have been reflected in this version of the report.

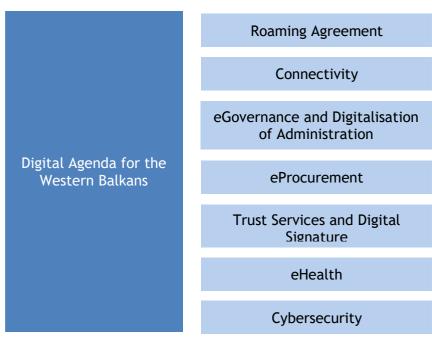


Figure 1: Key elements of the Digital Agenda for the Western Balkans

<sup>&</sup>lt;sup>2</sup> European Commission. (2018). Commission Staff Working Document: Measures in support of a Digital Agenda for the Western Balkans. Available at:

https://www.rcc.int/download/docs/Measures%20in%20Support%20of%20a%20DA%20for%20the%20WB.pdf/aa23a16b69061b98e4d0eb62390e751a.pdf. Accessed July 2025.





# 2. The Digital Agenda of the EU and for the Western Balkans

The Digital Agenda of the EU is a policy launched in 2010, aimed at bringing EU Member States closer to the information society, with a focus on preparing the European economy to face future challenges. It identifies key areas and sets actions and objectives at the level of the European Commission (EC) and the member states. The agenda includes obligations, concrete actions, regulations and laws arising from the identified areas. In 2020, the second phase of the EU Digital Agenda began, based on the programme "The Digital Future of Europe" and the policy "Digital Decade of Europe", from which the "Digital Compass 2030" is derived.

The main areas addressed by the EU Digital Agenda include: a digitally literate population, secure infrastructure, digital transformation of businesses and the digitalisation of public services. Furthermore, each Member State is required to develop a "National Map", which sets out priority areas, goals and strategies to achieve the objectives outlined in the Digital Compass.

On the other hand, non-EU economies, such as the WB economies, participate in the Digital Agenda for the Western Balkans. The Digital Agenda for the Western Balkans is part of the EU's enlargement strategy and includes support for eGovernment, eProcurement, eHealth services, and the development of digital skills. Figure 1 presents the components of the Digital Agenda for the Western Balkans. The following sections of this report briefly outline the achievements and challenges related to the specified areas.

# 3. Achievements in the implementation of the Digital Agenda for the Western Balkans in Kosovo

Kosovo has undertaken a series of activities to fulfil the objectives and obligations related to the EU Digital Agenda for the Western Balkans and generally related to its aspirations to integrate into the digital actions stemming from the EU Digital Agenda.

The Digital Agenda for the Western Balkans is an initiative that includes six economies in the region, including Kosovo, and originates from the Annex of the Sofia Declaration during the "European Union-Western Balkans Summit". The key idea of this initiative is for the region to gain as much benefit as possible from digital transformation through investments in infrastructure and the implementation of concrete measures in digitalising public services and enhancing citizens' digital skills. Some of the key areas from which activities of the Digital Agenda for the Western Balkans arise include: "reducing roaming costs, broadband digital connectivity, eGovernment, digitalisation of public services, innovation ecosystem, raising digital skills, digital trust and cyber security". Some of the measures for implementing the Digital Agenda for the Western Balkans and the standards from the EU Digital Agenda include aligning Kosovo's strategies and legislation with those of the EU. The current laws that Kosovo has adopted and that align with the EU Digital Agenda include, among others, communication laws, data protection and privacy laws, cybersecurity and intellectual property protection. Furthermore, progress in the aforementioned areas of the Digital Agenda for the Western Balkans is evident, but it should be emphasised that since the launch of this Agenda in 2018, additional activities have been introduced, which are based on the objectives of new national strategies and those of the EU, addressing the issue of digitalisation.

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<sup>&</sup>lt;sup>3</sup> Ibid.





Additionally, the Kosovo Digital Agenda 2030<sup>4</sup> as a strategic document is based on the "Digital Decade of Europe" programme as well as the "Digital Compass". Other strategies that have been implemented and are supported by the Digital Agenda and the EU standards include the eGovernment Strategy and the National Cybersecurity Strategy. The implementation of these strategies is in progress; however, the adaptation process is facing various challenges, especially those related to improvements in investments to achieve the defined goals. In the EC progress reports for Kosovo for 2023 and 2024, progress is mentioned in the implementation of the EU Digital Agenda, and the fact that significant steps have been taken for the digitalisation of public services in Kosovo is acknowledged. Key points of progress highlighted were the extension of the broadband network across the entire territory of Kosovo and participation in the "Digital Europe" programme, while challenges were noted, such as the low digital participation of institutional services and the lack of alignment between Kosovo's legislative framework and the EU's framework regarding interoperability<sup>5</sup>. Furthermore, another challenge remains that Kosovo has not yet adopted an AI strategy, which would outline its potential applications and areas of intervention, along with the publication of updated data on digital progress.

The actions taken in Kosovo and the region, in addition to the areas mentioned in the Digital Agenda for the Western Balkans, are identified and described below.

#### 3.1. Reduction of roaming costs

Regarding the first area, the reduction of roaming costs, Kosovo is part of the "Regional Roaming Agreement", signed at the Tirana Summit in 2022. Some of the actions stemming from this agreement include introducing lower rates for users of each operator that is active on the networks of other signatory operators, namely operators in the WB and the EU<sup>6,7</sup>. This roaming agreement aligns with the initiative for common regional markets, where, according to data from the EC progress report, progress has been noted in implementing the Regional Roaming Agreement.

According to the data for 2021, Kosovo "wholesale roaming voice costs per minute in the WB" have decreased by 90 %. As for the impact of reduced roaming costs, according to the 2024 Balkan Business Barometer, Kosovo had the highest number of respondents in the

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2025.

<sup>&</sup>lt;sup>4</sup> Repbulika e Kosovës. (2023). Agjenda Digjitale e Kosovës 2030. https://www.arkep-rks.org/desk/inc/media/82582FB3-CD31-4D3D-A2AA-F7CC21ACADCA.pdf. Accessed December 2024.

<sup>&</sup>lt;sup>5</sup> European Commission. (2024). Commission Staff Working Document: Kosovo\* 2024 Report. Available at: https://neighbourhood-enlargement.ec.europa.eu/kosovo-report-2024\_en. Accessed March 2025.

<sup>&</sup>lt;sup>6</sup> European Commission. (2022). Significant reduction of data roaming prices between Western Balkans and EU to start as of 1 October 2023: European Commission. Available at: <a href="https://neighbourhood-enlargement.ec.europa.eu/document/download/177511f7-eef5-4172-ac50-e23c0917b6c3\_en?filename=eu-wb-roaming-declaration.pdf">https://neighbourhood-enlargement.ec.europa.eu/document/download/177511f7-eef5-4172-ac50-e23c0917b6c3\_en?filename=eu-wb-roaming-declaration.pdf</a>. Accessed March 2025.

<sup>&</sup>lt;sup>7</sup> Ministry of Economy. (2022). EU countries and the Western Balkans sign the agreement for reduction of data roaming charges: Ministry of Economy. Available at: <a href="https://me.rks-gov.net/en/blog/eu-countries-and-the-western-balkans-sign-the-agreement-for-reduction-of-data-roaming-charges/">https://me.rks-gov.net/en/blog/eu-countries-and-the-western-balkans-sign-the-agreement-for-reduction-of-data-roaming-charges/</a>. Accessed March

<sup>&</sup>lt;sup>8</sup> Regional Cooperation Council. (2022). Western Balkans Roaming Report 2022, s.l.: Regional Cooperation Council. Available at: <a href="https://www.rcc.int/pubs/153/western-balkans-roaming-report-2022">https://www.rcc.int/pubs/153/western-balkans-roaming-report-2022</a>. Accessed February 2025.





region, over 40 %, who expressed that this agreement had brought positive effects for their businesses, including facilitating communication with regional partners<sup>9</sup>.

Table 1: Perception of the impact of the roaming free regime on business operations in the WB Source: Balkan Business Barometer 2024  $^{\rm 10}$ 

	It has reduced the costs of doing business	It has facilitated communication with regional partners	It has had no impact	I am not aware of any roaming free regime
Kosovo	16	41	17	27
Albania	14	23	53	12
Montenegro	12	28	56	5
Region	16	31	43	10

#### 3.2. Connectivity

On the other hand, as part of the measures to improve digital connectivity, one of the important elements is the implementation of the previous EU Directive 2014/61/EU, which aims at reducing broadband connection costs. This directive specifies that EU citizens should have access to networks with a speed above 100 Mbps, and more than half of them, after its adoption, should have access at an affordable cost.

Kosovo, as a non-EU member state, is not directly subject to EU legislation and directives, but the implementation of measures in line with this directive is part of the initiative under the Digital Agenda for the Western Balkans. According to the 2023 EC progress report for Kosovo, the legal aspects related to reducing broadband connection costs are in compliance with EU directives and the EU acquis<sup>11</sup>. However, further efforts are needed to align with new directives that have replaced the previous broadband connection directive<sup>12</sup>.

In the region, progress in aligning with EU directives for reducing fixed broadband connection costs is incomplete. As of 2024, Bosnia and Herzegovina and North Macedonia had not yet adapted their legislative aspects to the new directives<sup>13,14</sup>.

In recent years, measures have been taken to expand the broadband network coverage to include areas that were previously not covered. One such project is the KODE project <sup>15</sup>,

<sup>&</sup>lt;sup>9</sup> Regional Cooperation Council. (2024). *Balkan Business Barometer. Regional Roaming Agreement*. Available at: <a href="https://www.rcc.int/balkanbarometer/results/1/">https://www.rcc.int/balkanbarometer/results/1/</a>. Accessed *February 2025*.

<sup>&</sup>lt;sup>11</sup> European Commission. (2023). Commission staff working document: Kosovo 2023 Report. Available at: https://enlargement.ec.europa.eu/kosovo-report-2023\_en. Accessed January 2025.

<sup>&</sup>lt;sup>12</sup> Refer to footnote <sup>5</sup>.

<sup>13</sup> European Commission (2024). Commission staff working document: Bosnia and Herzegovina 2024 Report. Available at: <a href="https://op.europa.eu/en/publication-detail/-/publication/c200eae5-9781-11ef-a130-01aa75ed71a1/language-en">https://op.europa.eu/en/publication-detail/-/publication/c200eae5-9781-11ef-a130-01aa75ed71a1/language-en</a>. Accessed January 2025.

<sup>&</sup>lt;sup>14</sup> European Commission (2024). Commission staff working document: North Macedonia 2024 Report. Available at: <a href="https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=SWD:2024:693:FIN">https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=SWD:2024:693:FIN</a>. Accessed January 2025.

<sup>&</sup>lt;sup>15</sup> KODE Project. (2023). KODE Project's Post: KODE Project Facebook page. Available at:





implemented from 2018 to 2023 by the Ministry of Economy in collaboration with the World Bank. This project comprised infrastructure developments including the expansion of the broadband network into areas where it had not been previously available. The project yielded positive results, as broadband infrastructure was extended to all settlements in Kosovo.

According to data from DESI (Digital Economy Society Index) 2022, Kosovo had over 99 % of households connected to broadband networks, followed by Montenegro with over 95 % and North Macedonia with around 78 %<sup>16</sup>. Meanwhile, according to the latest statistics, in the fourth quarter of 2024, access to fixed broadband connections for households reached 107 %<sup>17</sup>. On the other hand, regarding fixed broadband connections per 100 inhabitants, Kosovo had 21.5 connections in 2023, while the regional average was 28.7 connections<sup>18,19</sup>. As for mobile broadband connections, in 2023, Kosovo had an average of 86.4 connections per 100 inhabitants, while Serbia and Montenegro had 112, North Macedonia had 85.3 and Bosnia and Herzegovina had 69.9 connections<sup>20,21</sup>.

Another initiative to increase connectivity mentioned in the Digital Agenda for the Western Balkans is the expansion of access points to public internet networks. Starting in 2024, the WiFi4WB initiative will begin operations, allowing municipalities in Kosovo to apply for participation<sup>22</sup>. In terms of infrastructure connectivity, a future objective specified in Kosovo's Digital Agenda 2030 is to include over a quarter of households in the 1 Gb/s broadband network by 2025, with the goal that, by 2030, this network will be accessible to all citizens. This objective is also part of the Digital Decade 2030 programme.

Furthermore, under the measures of the Digital Agenda for the Western Balkans, the establishment of Broadband Competence Offices (BCO) by the participating WB economies was planned. These offices, as public entities, are responsible for providing information

https://www.facebook.com/kodeproject/posts/pfbid021bKpFFRiP6vdttHt2RGcDDMqAHzMe2ETvuwqpfLZ6a G2xwm1qr3F3nRJfFCv2rkYL. Accessed January 2025.

<sup>&</sup>lt;sup>16</sup> Regional Cooperation Council (RCC). (2023). WESTERN BALKANS DIGITAL ECONOMY SOCIETY INDEX. WB DESI 2022 Report. Available at: <a href="https://www.rcc.int/files/user/docs/43a521a624cf08523a2268a67a7be2ff.pdf">www.rcc.int/files/user/docs/43a521a624cf08523a2268a67a7be2ff.pdf</a>. Accessed December 2024.

<sup>&</sup>lt;sup>17</sup> The Regulatory Authority of Electronic and Postal Communications - RAEPC. (2024). Quarterly Reports: The Regulatory Authority of Electronic and Postal Communications - RAEPC. Available at: <a href="https://arkep-rks.org/desk/inc/media/14d9f124-9634-4261-a14e-82cc982e142f.pdf">https://arkep-rks.org/desk/inc/media/14d9f124-9634-4261-a14e-82cc982e142f.pdf</a>. Accessed January 2025.

<sup>&</sup>lt;sup>18</sup> Calculations for Kosovo based on data from the report of key indicators for Q4 2023 by ARKEP. Available at: <a href="https://www.arkep-rks.org/desk/inc/media/28dbbf24-489f-4473-8ea6-4b7afdc2fa6e.pdf">https://www.arkep-rks.org/desk/inc/media/28dbbf24-489f-4473-8ea6-4b7afdc2fa6e.pdf</a>. Accessed January 2025.

<sup>&</sup>lt;sup>19</sup> International Telecommunication Union (ITU). (2023). Fixed-broadband subscriptions: ITU Data Hub. Available at: Fixed-broadband subscriptions - ITU DataHub. Accessed January 2025.

<sup>&</sup>lt;sup>20</sup> Mobile broadband connections per 100 inhabitants for Kosovo were calculated using population estimates from the Kosovo Agency of Statistics for the year 2023 (KAS publication: <a href="https://askapi.rks-gov.net/Custom/35caacf1-08c8-44b2-809a-43ada26269c5.pdf">https://askapi.rks-gov.net/Custom/35caacf1-08c8-44b2-809a-43ada26269c5.pdf</a>), and the number of mobile broadband users for the fourth quarter of 2023, as reported by ARKEP (ARKEP publication no.01/2014 pg. 14: <a href="https://arkep-rks.org/desk/inc/media/28dbbf24-489f-4473-8ea6-4b7afdc2fa6e.pdf">https://arkep-rks.org/desk/inc/media/28dbbf24-489f-4473-8ea6-4b7afdc2fa6e.pdf</a>).

<sup>&</sup>lt;sup>21</sup> International Telecommunication Union (ITU). (2023). Active mobile-broadband subscriptions: ITU Data Hub. Available at: <a href="https://datahub.itu.int/data/?e=ALB&c=701&i=11632&u=per+100+people">https://datahub.itu.int/data/?e=ALB&c=701&i=11632&u=per+100+people</a>. Accessed January 2025.

<sup>&</sup>lt;sup>22</sup> eu\_near. (2025). eu\_near Instagram Page. Available at: https://www.instagram.com/reel/DEcJUpgNAPJ/. Accessed February 2025.





on broadband network developments. Kosovo established such an office in 2020<sup>23</sup>. At the regional level, all participating economies have established similar offices<sup>24</sup>.

As part of advancing the Digital Agenda in terms of connectivity, the integration and use of fifth-generation mobile network technology, or 5G, is also included. At the Tirana Summit held in 2020, Kosovo signed a "Memorandum of Cooperation" regarding developments related to 5G infrastructure<sup>25</sup>, specifying the undertaking of concrete actions to adapt conditions for the development of 5G infrastructure. In 2022, after dialogue with stakeholders, a plan was approved for the release of the necessary frequencies for the 5G network, and the costs for the frequencies were also set<sup>26</sup>. Furthermore, in 2023, the Regulatory Authority of Electronic and Postal Communications (RAEPC) granted two operators the right to use the frequency channels necessary for the further development of the 5G network<sup>27</sup>. However, the simplification of procedures for the establishment of access points in restricted areas, which is considered essential for the further development of the 5G network, was yet to be implemented.

According to the data from the RAEPC and major telecommunications operators in Kosovo the majority of cities<sup>28</sup>, or over 70 % of settlements were covered by the  $5G^{29}$ , network in the past year, with around 65 % to 67 % of the population covered by one operator with this network<sup>30</sup>. In this regard, Kosovo has made progress in expanding the 5G network. However, according to 2024 data, Albania<sup>31</sup>, Serbia<sup>32</sup> and Bosnia and Herzegovina<sup>33</sup> had

<sup>&</sup>lt;sup>23</sup> Ministry of Economy. (2020). Minister Kuçi attended the Western Balkans Digital Summit: Two memoranda were signed. Available at: <a href="http://me.rks-gov.net/en/blog/minister-kuci-attended-the-western-balkans-digital-summit-two-memoranda-were-signed/">http://me.rks-gov.net/en/blog/minister-kuci-attended-the-western-balkans-digital-summit-two-memoranda-were-signed/</a>. Accessed January 2025.

<sup>&</sup>lt;sup>24</sup> European Commission. (2024). Broadband Competence Offices (BCOs) Network. Available at: https://digital-strategy.ec.europa.eu/en/policies/bco-network. Accessed January 2025.

<sup>&</sup>lt;sup>25</sup> Refer to footnote <sup>7</sup>

<sup>&</sup>lt;sup>26</sup> Regional Cooperation Council. (2022). *Common Regional Market Report on Implementation for 2022*. Available at: <a href="https://www.rcc.int/download/docs/2023-05-Common-Regional-Market-2022-spread.pdf/3e4e41db978a0f1aa37353f8152ef683.pdf">https://www.rcc.int/download/docs/2023-05-Common-Regional-Market-2022-spread.pdf/3e4e41db978a0f1aa37353f8152ef683.pdf</a>. Accessed November 2024.

<sup>&</sup>lt;sup>27</sup> The Regulatory Authority for Electronic and Postal Communications - RAEPC. (2024). Achievements of RAEPC over 20 years in regulating the electronic communications and postal market. Available at: <a href="https://www.arkep-rks.org/desk/inc/media/AD0E0220-3061-40A2-B5C1-5189AEB05B7D.pdf">https://www.arkep-rks.org/desk/inc/media/AD0E0220-3061-40A2-B5C1-5189AEB05B7D.pdf</a>. Accessed December 2024.

<sup>28</sup> Ibid.

<sup>&</sup>lt;sup>29</sup> Vala - Telecom of Kosovo. (2024). TELECOM 2024: Modernized the mobile network, stopped the financial haemorrhage, operated with profit: Vala - Telecom of Kosovo. Available: https://kosovotelecom.com/njoftime/. Accessed December 2024.

<sup>&</sup>lt;sup>30</sup> To estimate the number of people covered by this network, the network extension of the Vala operator in the residential areas of Kosovo was taken as a basis, and the assessment of the participation of the 5G network in this extension was taken into account.

<sup>&</sup>lt;sup>31</sup> Organisation for Economic Co-operation and Development (OECD). (2024). Western Balkans Competitiveness Outlook 2024: Albania. Available at:

https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/06/western-balkans-competitiveness-outlook-2024-albania\_a783c88e/541ec4e7-en.pdf.Accessed December 2024.

<sup>&</sup>lt;sup>32</sup> Organisation for Economic Co-operation and Development (OECD). (2024). Western Balkans Competitiveness Outlook 2024: Serbia. Available at:

https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/06/western-balkans-competitiveness-outlook-2024-serbia\_1df89dd8/3699c0d5-en.pdf. Accessed December 2024.

<sup>&</sup>lt;sup>33</sup> Organisation for Economic Co-operation and Development (OECD). (2024). Western Balkans Competitiveness Outlook 2024: Bosnia and Herzegovina. Available at:





not yet rolled out this network. Additionally, in Montenegro and North Macedonia, by 2024, operators in these economies reported covering 89  $\%^{34}$  and nearly 99 % of their population with the  $5G^{35}$  network.

#### 3.3. eGovernance and digitalisation of public administration

One of the key topics of the Digital Agenda for the Western Balkans is electronic governance, which also includes the digitalisation of public administration. This concept is based on the Declaration on Electronic Governance adopted in Tallinn<sup>36</sup>, with the goal of advancing digital initiatives that will reduce bureaucratic procedures and increase the efficiency of services for citizens.

Regarding governance, Kosovo has taken the first steps in this direction by adopting the eGovernment Strategy for the period 2009-2015. Furthermore, the digitalisation of public services is an important objective in Kosovo's Digital Agenda 2030<sup>37</sup>, which aims at digitalising key services and public administration by 2030. Kosovo's new eGovernment Strategy for 2023-2027<sup>38</sup> identified two key challenges in this area: the low usage of digital platforms and legal gaps. Additionally, this strategy aims at creating a unique governmental architecture, increase institutional participation, and enhance the digital competencies of public officials.

The digitalisation of public administration was also an important component of the "Public Administration Modernisation Strategy 2015-2022". At the time of the adoption of this strategy, digitalisation was in its early stages, and the goal was to create an integrated digital platform for services through the integration of various institutional digital platforms and the establishment of a "one-stop-shop" such as the e-Kosova platform. In 2021, the e-Kosova platform began its operationalisation<sup>39</sup>, with some of the integrated services including those in the fields of health, family and taxation<sup>40</sup>, continuing with the

https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/06/western-balkans-competitiveness-outlook-2024-bosnia-and-herzegovina\_bcc1529d/82e0432e-en.pdf. Accessed December 2024.

<sup>&</sup>lt;sup>34</sup> Crnogorski Telekom AD. (2024). Odigraj pametno, biraj vodeću mrežu!: Crnogorski Telekom AD. Available at: https://telekom.me/privatni-korisnici/vodeca-mreza Accessed December 2024.

<sup>&</sup>lt;sup>35</sup> A1 Group. (2024). Results for Q1 2024. Available at: <a href="https://a1.group/wp-content/uploads/sites/6/2024/04/A1-Results\_presentation\_Q1-2024.pdf">https://a1.group/wp-content/uploads/sites/6/2024/04/A1-Results\_presentation\_Q1-2024.pdf</a> Accessed December 2024.

<sup>&</sup>lt;sup>36</sup> European Commission. (2017). Ministerial Declaration on eGovernment - the Tallinn Declaration: European Commission. Available at: <a href="https://ec.europa.eu/newsroom/dae/redirection/document/47559">https://ec.europa.eu/newsroom/dae/redirection/document/47559</a>. Accessed October 2024.

<sup>&</sup>lt;sup>37</sup> Government of Kosovo (2023). Kosovo Digital Agenda 2030. Available at: <a href="https://arkep-rks.org/desk/inc/media/82582FB3-CD31-4D3D-A2AA-F7CC21ACADCA.pdf">https://arkep-rks.org/desk/inc/media/82582FB3-CD31-4D3D-A2AA-F7CC21ACADCA.pdf</a>. Accessed December 2024.

<sup>&</sup>lt;sup>38</sup> Government of Kosovo (2023). The E-Government Strategy of Kosovo 2023-2027. Available at: https://mpb.rks-

gov.net/Uploads/Documents/Pdf/AL/2700/Strategjia%20e%20Kosov%C3%ABs%20p%C3%ABr%20Qeverisje%20 Elektronike%202023-2027.pdf. Accessed October 2024.

<sup>&</sup>lt;sup>39</sup> Interoperable Europe. (2024). Kosovo: 2024 Digital Public Administration Factsheet. Available at: https://interoperable-europe.ec.europa.eu/sites/default/files/inline-

files/NIFO\_2024%20Supporting%20Document\_Kosovo\_vFinal\_rev.pdf. Accessed December 2024.

<sup>&</sup>lt;sup>40</sup> AIS - Agency for Information Society. (2023). AIS - Agency for Information Society Facebook. Available at: <a href="https://www.facebook.com/ekosovaplatform/videos/888648981745749">https://www.facebook.com/ekosovaplatform/videos/888648981745749</a>. Accessed December 2024.





integration of services related to property, police, subsidies, municipal payments, education and the judiciary<sup>41</sup>. By 2024, it was reported that 195 services were offered on this platform<sup>42</sup>. However, the challenges faced by the e-Kosova platform, from the beginning of its development in 2019 to its completion in 2022, included the non-functionality of some services due to a lack of coordination with stakeholders and a lack of capacity<sup>43</sup>.

According to data from the 2024 OECD report on Competitiveness in the Western Balkans, the number of services offered on the e-Kosova platform accounts for about 10 % of all services, while Albania leads the region with over 95 % of services offered on its national electronic portal<sup>44</sup>. It should be emphasised that increasing the number of services on this platform is an important objective included in the Digital Agenda 2030 and the eGovernment Strategy, focusing on the need to improve services and increase access for citizens.

With the new Public Administration Reform Strategy 2022-2027<sup>45</sup>, numerous activities are planned to improve transparency through the increased use of digital platforms and the updating of relevant information. On the other hand, regarding the number of registered users on national electronic service platforms, in 2024, Kosovo had over 950,000 registered users, Serbia 2.3 million<sup>46</sup>, Albania 3.2 million<sup>47</sup> and North Macedonia had the lowest number of registered users, around 130,000<sup>48</sup>. Montenegro did not have publicly available data online regarding the number of registered users in 2024.

Regarding open data, the government's open data portal "Open Data Republic of Kosovo" has not been updated recently with new data from institutions, with the most recent data being from 2023. By 2024, the portal reported that 205 datasets from 14 organizations

<sup>&</sup>lt;sup>41</sup> AIS - Agency for Information Society. (2023). AIS - Agency for Information Society Facebook. Available at: https://www.facebook.com/watch/?v=734584000915417&ref=sharing.

<sup>&</sup>lt;sup>42</sup> OECD. Public administration in Kosovo\*. (2024). Accessed December 2024. https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/01/public-administration-in-kosovo-2024\_d9378da9/a53fce6b-en.pdf. Accessed December 2024.

<sup>&</sup>lt;sup>43</sup> National Audit Office. (2023). Information Technology Audit Report: Management of Information Technology Systems Projects in the Agency for Information Society. Available at: <a href="https://zka-rks.org/cms/uploads/2023/07/Raporti\_Audititmit\_ASHI-shqip.pdf">https://zka-rks.org/cms/uploads/2023/07/Raporti\_Audititmit\_ASHI-shqip.pdf</a>. Accessed November 2024.

<sup>&</sup>lt;sup>44</sup> Organisation for Economic Co-operation and Development (OECD). (2024). Western Balkans Competitiveness Outlook 2024: Regional Profile.

https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/06/western-balkans-competitiveness-outlook-2024-regional-profile\_359dd5b9/170b0e53-en.pdf. Accessed November 2024.

<sup>&</sup>lt;sup>45</sup> Republic of Kosovo: Ministry of Internal Affairs. (2022). Public Administration Reform Strategy 2022-2027. Available at: <a href="https://kryeministri.rks-gov.net/wp-content/uploads/2023/01/STRATEGJIA-E-REFORMES-SE-ADMINISTRATES-PUBLIKE-2022-2027.pdf">https://kryeministri.rks-gov.net/wp-content/uploads/2023/01/STRATEGJIA-E-REFORMES-SE-ADMINISTRATES-PUBLIKE-2022-2027.pdf</a>. Accessed November 2024.

 <sup>&</sup>lt;sup>46</sup> Kancelarija za IT i eUpravu. (2024). kancelarijaite Instagram page. Available at:
 <a href="https://www.instagram.com/p/C9MvXyUM598/?utm\_source=ig\_web\_copy\_link">https://www.instagram.com/p/C9MvXyUM598/?utm\_source=ig\_web\_copy\_link</a>. Accessed November 2024.
 <sup>47</sup> ealbaniaofficial. (2024). e-Albania Instagram page. Available at:

https://www.instagram.com/p/DExTPiztRrA/?utm\_source=ig\_web\_copy\_link . Accessed November 2024.

<sup>&</sup>lt;sup>48</sup> Organisation for Economic Co-operation and Development (OECD). (2024). *Public Administration In The Republic Of North Macedonia 2024*. Available at:

https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/01/public-administration-in-the-republic-of-north-macedonia-2024\_03a4d4f2/071bad9d-en.pdf. Accessed November 2024.





had been integrated<sup>49</sup>. Some of the organisations that were featured on the portal operated under the domain of five ministries, while others are independent institutions, including the Prime Minister's Office, the Anti-Corruption Agency and the Kosovo Agency of Statistics. Additionally, at the regional level, all WB economies have open data portals at the central level, but some of them are not accessible.

#### 3.4. eProcurement

Several other areas mentioned in the digitalisation of public administration within the framework of the Digital Agenda for the Western Balkans include eProcurement, eHealth and the development of digital skills. Specifically, the electronic procurement platform, known as eProcurement, is one of the main elements of this agenda. Electronic procurement in Kosovo is based on the law "Law No. 2003/17 on Public Procurement in Kosovo", amended in 2007 and the Public Procurement Law No. 04/L-042, adopted in 2011, which specifies the basic methods for regulating and functioning of electronic procurement. This law has been amended with Law No. 04/L-237 and Law No. 05/L-068.

In 2014, the development of the eProcurement platform began<sup>50</sup>, and in 2016, it became operational, continuing with the registration of contracting authorities through 2017<sup>51</sup>. According to the latest report for 2023, the use of this platform has shown high values for contracting and a 13 % increase in the participation of economic operators from 2022 to 2023<sup>52</sup>. Additionally, since 2021, the vast majority, or 99 %, of the application-contracting process has taken place through this platform<sup>53</sup>. At the WB level, all economies have their own electronic procurement platforms and have adapted their legislation to the relevant EU regulations regarding procurement. Regarding the alignment of procurement legislation with EU directives, partial alignment has been reported<sup>54</sup>, as the new draft law on public procurement has not yet been adopted<sup>55</sup>.

<sup>&</sup>lt;sup>49</sup> Open Data. Republic of Kosovo. Available at: <a href="https://opendata.rks-gov.net/">https://opendata.rks-gov.net/</a>. Accessed January 2025.

<sup>&</sup>lt;sup>50</sup> Public Procurement Regulatory Commission. (2015). Report on Public Procurement Activities in Kosovo for the Year 2014. <a href="https://e-prokurimi.rks-">https://e-prokurimi.rks-</a>

gov.net/HOME/Documents/Legislation/Raportet%20Vjetore/shq/Raporti%20vjetor%202014%20Shqip%20KRP P.pdf. Accessed December 2024.

<sup>&</sup>lt;sup>51</sup> Public Procurement Regulatory Commission. (2018). Report on Public Procurement Activities in Kosovo for the Year 2017. <a href="https://e-prokurimi.rks-">https://e-prokurimi.rks-</a>

gov.net/HOME/Documents/Legislation/Raportet%20Vjetore/shq/sh-

Raporti%20vjetor%202017%20Komplet.pdf. Accessed December 2024.

<sup>&</sup>lt;sup>52</sup> Public Procurement Regulatory Commission. (2024). Annual Report 2023. <a href="https://e-prokurimi.rks-gov.net/HOME/Documents/Legislation/Raportet%20Vjetore/shq/Raporti%20Vjetor%202023.pdf">https://e-prokurimi.rks-gov.net/HOME/Documents/Legislation/Raportet%20Vjetore/shq/Raporti%20Vjetor%202023.pdf</a>. Accessed December 2024.

<sup>&</sup>lt;sup>53</sup> Public Procurement Regulatory Commission. (2022). Report on Public Procurement Activities in Kosovo for the Year 2021. <a href="https://e-prokurimi.rks-">https://e-prokurimi.rks-</a>

gov.net/HOME/Documents/Legislation/Raportet%20Vjetore/shq/Raporti%20vjetor%20i%20aktiviteteve%20t e%20prokurimit%20-%202021.pdf. Accessed December 2024.

<sup>&</sup>lt;sup>54</sup> Refer to footnote <sup>5</sup>.

<sup>&</sup>lt;sup>55</sup> Public Procurement Regulatory Commission. (2024). Performance plan for 2025. Available at: <a href="https://krppcms.rks-gov.net//uploads/Plani\_i\_Performances\_2025\_KRPP\_71a60fdcf0.pdf">https://krppcms.rks-gov.net//uploads/Plani\_i\_Performances\_2025\_KRPP\_71a60fdcf0.pdf</a>. Accessed December 2024.





#### 3.5. eHealth

One of the initiatives mentioned in the Digital Agenda for the Western Balkans is the "EU Health Network", a voluntary network that connects national authorities responsible for electronic health. In order to become an observer member of this network, Kosovo must have a fully functional electronic health system, or eHealth, and hold candidate status for EU membership<sup>56</sup>.

With the health sector strategy 2023-2030, the continuation of health digitalisation is foreseen through the revitalisation of the Health Information System (HIS), as Kosovo is one of the economies that still does not have a fully functional HIS<sup>57</sup>. Concrete steps in this direction have included the implementation of a feasibility plan, which outlined ways to reactivate the health information system and create a broader electronic health or eHealth system over a three-year period<sup>58</sup>.

Based on the recommendations from the feasibility study, in 2023, the Ministry of Health (MoH) drafted the strategic plan for the development of the HIS 2024-2030, which outlines the next six-year plans to expand and consolidate the current HIS network through integration with other existing and planned systems<sup>59</sup>. In the same document, the necessary and upcoming challenges for the proper implementation of the HIS are identified, as: legal gaps, infrastructure deficiencies, human resource shortages and potential financial shortages. Overall, progress in this sector has been very slow. This fact is negatively impacting the advancement of healthcare services, especially the implementation of the health insurance system. Its consolidation is facing delays and chronic issues, which, nonetheless, need to be addressed more efficiently and responsibly.

### 3.6. elnvoicing

Electronic invoicing, or "elnvoicing", is an advanced system for managing invoices that contributes to increasing transparency and formalising the economy in Kosovo. This system is indirectly regulated by two different laws: Law No. 08/L-257 on the Tax Administration and Law No. 04/L-155 on Payment Services. Another important aspect of electronic invoicing is its connection with property tax. However, regarding the electronic invoicing of VAT, such a system has not yet been implemented, although it is listed among the upcoming actions according to the Kosovo Tax Administration (KTA)<sup>60</sup>.

<sup>&</sup>lt;sup>56</sup> European Commission. Rules of procedure of the eHealth Network. Available at: https://health.ec.europa.eu/document/download/4ba1d5cc-87a3-44c0-83c4-

Odf54038602e\_en?filename=rules\_procedures\_ehealth\_network\_en.pdf. Accessed November 2024.

57 Republic of Kosovo: Ministry of Health (2023) HEALTH SECTOR STRATEGY 2023-2030 Available:

Fraction Fra

<sup>&</sup>lt;sup>58</sup> management4health GmbH; Civitta International OÜ. (2023). Development of a feasibility study for eHealth in Kosovo. Available at: <a href="https://msh.rks-">https://msh.rks-</a>

gov.net/Documents/DownloadDocument?fileName=Kosov41051093.5132.pdf. Accessed December 2024.

<sup>&</sup>lt;sup>59</sup> Refer to footnote <sup>57</sup>.

<sup>&</sup>lt;sup>60</sup> Kosovo Tax Administration. (2023). Work Report: January-December 2023. Available at: <a href="https://www.atk-ks.org/wp-content/uploads/2024/04/Raporti-i-Punes-Janar-Dhjetor-2023.pdf">https://www.atk-ks.org/wp-content/uploads/2024/04/Raporti-i-Punes-Janar-Dhjetor-2023.pdf</a>. Accessed November 2024.





Progress in this area has begun through the initiative to switch from manual invoicing records to electronic records<sup>61</sup>. By 2024, all WB economies had either functional electronic invoicing platforms or were in the process of implementing such a platform, with the exception of Bosnia and Herzegovina<sup>62</sup>.

#### 3.7. Electronic identity and electronic signature

An important area addressed within the framework of the Digital Agenda for the Western Balkans in Kosovo is the development of electronic signature systems. An electronic signature is a means of identification where the signature of the signatory appears in digital form. The EU legislation concerning electronic signatures is included within the broader context of electronic identification. The EU Regulation of 2014, eIDAS No. 910/2014, as well as the new 2024/1183 regulation on electronic identity, address the issue of electronic identity. In Kosovo, the law "No. 08/L-022 on Electronic Identification and Trust Services in Electronic Transactions" was adopted in 2021. Additionally, all WB economies have aligned, or are in the process of aligning, their legal frameworks with the EU Regulation 910/2014<sup>63</sup>.

The previous eGovernment Strategy for 2009-2015 emphasised the importance of developing electronic identity through the implementation of electronic cards. Similarly, in the Kosovo eGovernment Strategy 2023-2027, enabling and implementing "electronic identity and electronic signature" is an objective to be achieved through the e-Kosova platform.

In addition to the development of Electronic Identity, in the Digital Agenda 2030 it is envisioned that by 2030, a significant number of citizens will already use one of the forms of electronic identity. The development of the electronic identity platform, eID, is in the finalisation phase and is being developed under the EU4Innovation project<sup>64</sup>. In 2024, training sessions were held on how to utilise this platform<sup>65</sup>, and its functionality was also tested during the same year<sup>66</sup>.

As for the progress of regional cooperation related to electronic identification, actions have been taken. During the 2020 Digital Summit in Tirana, a Memorandum of Cooperation

<sup>&</sup>lt;sup>61</sup> Refer to footnote <sup>39</sup>.

<sup>&</sup>lt;sup>62</sup> The data are from IOPEU Monitoring Digital Public Administration factsheets - 2024, of the respective countries. Available at: <a href="https://interoperable-europe.ec.europa.eu/collection/nifo-national-interoperablity-framework-observatory/digital-public-administration-factsheets-2024">https://interoperable-europe.ec.europa.eu/collection/nifo-national-interoperablity-framework-observatory/digital-public-administration-factsheets-2024</a>

<sup>63</sup> Ihid

<sup>&</sup>lt;sup>64</sup> European Commission. (2019). INSTRUMENT FOR PRE-ACCESSION ASSISTANCE (IPA II) 2014-2020. Kosovo\* EU for Innovation. Available at: <a href="https://neighbourhood-enlargement.ec.europa.eu/document/download/551fb600-b673-4830-9e04-1e69db081d04\_en?filename=03.\_ad\_eu\_for\_innovation.pdf">https://neighbourhood-enlargement.ec.europa.eu/document/download/551fb600-b673-4830-9e04-1e69db081d04\_en?filename=03.\_ad\_eu\_for\_innovation.pdf</a>. Accessed November 2024.

<sup>&</sup>lt;sup>65</sup> Ministry of Economy. (2024). Ministry of Economy: Trainings for the e-ID platform continue. Available at: https://me.rks-gov.net/blog/vazhdojne-trajnimet-per-platformen-e-id/. Accessed November 2024.

<sup>&</sup>lt;sup>66</sup> Ministry of Economy, Republic of Kosovo. (2024). Ministry of Economy: Testing the functionalities of the eID Kosovo platform before its final launch. Available at: <a href="https://me.rks-gov.net/blog/testohen-funksionalitetet-platformes-eid-kosova-para-lansimit-finale-te-saj/">https://me.rks-gov.net/blog/testohen-funksionalitetet-platformes-eid-kosova-para-lansimit-finale-te-saj/</a>. Accessed November 2024.





on "Interoperability and Trust Services" was signed among the WB economies, where the parties committed to continue progress in the implementation of electronic identity<sup>67</sup>.

#### 3.8. Innovation ecosystem and digital skills

Another area stemming from the Digital Agenda for the Western Balkans is the development of skills and digital capacity building. Various strategic documents have addressed the need for digital skills. For example, the previous Strategy for Training of Civil Servants 2016-2020 aimed at building capacities in information technology through training to improve the use of electronic administrative platforms. In the Education Strategy 2022-2026, building digital skills among individuals involved in the education system is one of the main objectives. The new eGovernment Strategy 2023-2027 again emphasises the importance of enhancing digital capacities for public officials. Furthermore, Kosovo's Digital Agenda 2030 includes significant objectives, such as the development of digital skills among the general population, employees in enterprises, and public institution workers. This strategy aims at strengthening digital capacities through several measures, including increasing the number of graduates in ICT fields, improving the use of new technologies by enterprises, and increasing the number of ICT specialists employed in the technology sector.

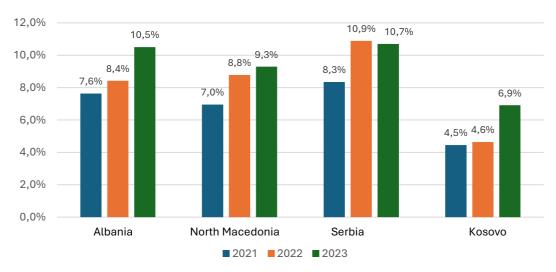


Figure 2: Share of graduates from universities and private colleges in the field of ICT in some WB economies, expressed as a percentage of the total number of graduates.

Source: Calculation by authors based on data from national statistics agencies of the WB.

Although there has been an increase in interest in computer science and ICT studies over the past three years, Kosovo still lags behind in terms of the percentage of graduates at the Bachelor level compared to the total number of graduates (see Figure 2). Compared to the region, the percentage of graduates in ICT in Kosovo is approximately 7 %, while the regional average stands at 9.4 % (excluding Montenegro, which had no published

<sup>&</sup>lt;sup>67</sup> Regional Cooperation Council. (2024). Regional Interoperability and Trust Services in Western Balkans - Methodology, Implementation Vision and Action Plan. Available at:

https://www.rcc.int/pubs/132/regional-interoperability-and-trust-services-in-western-balkans-methodology-implementation-vision-and-action-plan. Accessed November 2024.





statistics regarding the number of graduates in relevant fields of tertiary education) 68,69,70,71,72

In terms of public universities in Kosovo, a research study conducted by the Riinvest Institute in 2024 identified elements of digitalisation in their programmes and curricula<sup>73</sup>. It should be noted that official public data on the number of ICT specialists currently in the labour market is lacking. It is important to highlight that in recent years, a series of actions have been taken regarding the identification of needs for the development of digital knowledge and capacities among future employees. Since 2022, under the KODE project, the YOU programme has been implemented, aimed at enhancing digital skills among young people, with approximately 2,000 individuals trained in various technologies<sup>74</sup>. Another project, implemented under the IPA 2 financial instrument, which aims at providing training in programming languages and digital awareness, is "EU Support for the Competitiveness of the ICT Sector of Kosovo". Under this project, over 2,100 individuals were trained in increasing digital skills by 2024<sup>75</sup>.

On the other hand, participation in the innovation ecosystem is composed of "Digital Innovation Centres (DIC)", where, in 2021, five organisations were self-identified as such centres<sup>76</sup>. The establishment of DIC in Kosovo is also an objective outlined in the Digital

<sup>&</sup>lt;sup>68</sup> Kosovo Agency of Statistics (KAS). (2023). HIGHER EDUCATION STATISTICS BY FIELDS OF STUDY 2022/2023. Available at: <a href="https://askapi.rks-gov.net/Custom/dcc09a63-5933-4f73-9af1-7c4033154f64.pdf">https://askapi.rks-gov.net/Custom/dcc09a63-5933-4f73-9af1-7c4033154f64.pdf</a>. Accessed December 2024.

<sup>&</sup>lt;sup>69</sup> Kosovo Agency of Statistics (KAS) (2023). HIGHER EDUCATION STATISTICS BY FIELDS OF STUDY 2023/2024. Available at: <a href="https://askapi.rks-gov.net/Custom/00e59dca-0f4a-4d7d-ae69-f4c5920091aa.pdf">https://askapi.rks-gov.net/Custom/00e59dca-0f4a-4d7d-ae69-f4c5920091aa.pdf</a>. Accessed December 2024.

<sup>&</sup>lt;sup>70</sup> Statistical Office of the Republic of Serbia. (2024). Number of graduated students, by fields of education - I degree studies: Statistical Office of the Republic of Serbia. Available at: https://data.stat.gov.rs/Home/Result/1104020102?languageCode=en-US. Accessed December 2024.

<sup>&</sup>lt;sup>71</sup> Republic of Albania Institute of Statistics. (2023). Students graduated of higher education according to programs and areas of study 2015 - 2023: iNSTAT. Available at: <a href="https://databaza.instat.gov.al:8083/pxweb/en/DST/START\_ED\_GRA/NewGRA02/table/tableViewLayout1/">https://databaza.instat.gov.al:8083/pxweb/en/DST/START\_ED\_GRA/NewGRA02/table/tableViewLayout1/</a>. Accessed December 2024.

The State Statistical Office of the Republic of Macedonia. (2024). Graduated students by mode of study, established deadline and field of study, by year, ISCED 2013: MAKSTAT database. Available at: <a href="https://makstat.stat.gov.mk/PXWeb/pxweb/en/MakStat/MakStat\_ObrazovanieNauka\_VisokoObrazovanie">https://makstat.stat.gov.mk/PXWeb/pxweb/en/MakStat/MakStat\_ObrazovanieNauka\_VisokoObrazovanie</a> DipolmiraniStudenti DipPrvCiklus/206 VsObr RM T5 ml.px/?rxid=46ee0f64-2992-4b45-a2d9-

<sup>&</sup>lt;u>cb4e5f7ec5ef</u>. Accessed December 2024.

73 Mustafa, M; Berisha, I; Kryeziu, L; Maloku, B; Bajramaj, A. (2024). Incorporating elements of the Green Agenda, Digitalization, Research and Innovation into study programs at Higher Education Institutions (HEIs) in Kosovo. Available at:

https://riinvestinstitute.org/uploads/files/2024/July/17/Raporti\_Studimor\_FINAL1721209088.pdf. Accessed December 2024.

<sup>&</sup>lt;sup>74</sup> KODE Project. (2024). KODE Project. Available at: <a href="https://kodeproject.org/en/">https://kodeproject.org/en/</a>. Accessed December 2024.

<sup>&</sup>lt;sup>75</sup> Kosovo ICT Support Linkedin page. Available at: <a href="https://www.linkedin.com/posts/kosovo-ict-support\_the-ict-for-kosovos-growth-project-activity-7165778123010109441-Mr03">https://www.linkedin.com/posts/kosovo-ict-support\_the-ict-for-kosovos-growth-project-activity-7165778123010109441-Mr03</a>. Accessed December 2024

<sup>&</sup>lt;sup>76</sup> Regional Cooperation Council (RCC). (2021). *Mapping of digital innovation hubs, and identification of needs within Western Balkans and of prospective regional cooperation actions*. Available at: <a href="https://www.rcc.int/download/docs/Mapping%20of%20digital%20innovation%20hubs\_final.pdf/b2d3533b3">https://www.rcc.int/download/docs/Mapping%20of%20digital%20innovation%20hubs\_final.pdf/b2d3533b3</a> <a href="https://www.rcc.int/download/docs/Mapping%20of%20digital%20innovation%20hubs\_final.pdf/b2d3533b3">https://www.rcc.int/download/docs/Mapping%20of%20digital%20innovation%20hubs\_final.pdf/b2d3533b3</a> <a href="https://www.rcc.int/download/docs/Mapping%20of%20digital%20innovation%20hubs\_final.pdf/b2d3533b3">https://www.rcc.int/download/docs/Mapping%20of%20digital%20innovation%20hubs\_final.pdf/b2d3533b3</a> <a href="https://www.rcc.int/download/docs/Mapping%20of%20digital%20innovation%20hubs\_final.pdf/b2d3533b3">https://www.rcc.int/download/docs/Mapping%20of%20digital%20innovation%20hubs\_final.pdf/b2d3533b3</a> <a href="https://www.rcc.int/download/docs/Mapping%20of%20digital%20innovation%20hubs\_final.pdf/b2d3533b3">https://www.rcc.int/download/docs/Mapping%20of%20digital%20innovation%20hubs\_final.pdf/b2d3533b3</a>





Agenda 2030, and one such centre is the Innovation Training Park Prizren (ITP), which provides skills development training, support for access to finance and networking opportunities<sup>77</sup>.

Furthermore, Kosovo's participation in the "Digital Europe" programme will enable access to financial schemes for fields such as AI and cybersecurity as well as strengthening the "Digital Innovation Centres" A project that began its implementation under the aforementioned programme by various organisations in 2025 is the "Digital Innovation Gateway for Kosovo", and among its goals is the development of the digital ecosystem through the enhancement of digital skills<sup>79</sup>. In the Digital Agenda 2030, as part of increasing the level of digitalisation among enterprises, the emphasis is placed on increasing the use of new technologies such as "Big Data", "Cloud" and "AI". While official public data on the level of adoption of these technologies is missing, according to the Business Barometer survey by RCC, the percentage of enterprises using AI and one of the "Cloud" systems is quite low. Approximately only 4 % and 5 % of businesses have reported using one of these tools. According to the same survey, even at the regional level, the average use of these technologies is quite low, with around 13 % for Cloud Systems and about 2 % for AI<sup>80</sup>.

Meanwhile, in a research study conducted by the Riinvest Institute in 2022 with enterprises in the manufacturing sector, it was found that enhancing digital skills among management and workers was crucial for the further progress of businesses<sup>81</sup>.

#### 3.9. Cybersecurity and the ICT research ecosystem

Another key area of the Digital Agenda for the Western Balkans is cybersecurity. The planned measures include: aligning local legislation on cybersecurity with EU directives, developing cybersecurity strategies and establishing competent bodies to monitor cyber risks. Kosovo has made significant progress in strengthening cybersecurity to protect its digital infrastructure and citizens' data. In 2023, Kosovo adopted Law 08/L-173, which also established the Agency for Cybersecurity. This law is in line with the EU Acquis on cybersecurity, but further alignment has been suggested to continue with the EU's new cybersecurity directive, EU NIS2<sup>82</sup>.

<sup>&</sup>lt;sup>77</sup> European Commission. (2024). European Digital Innovation Hubs Network. Available at: <a href="https://european-digital-innovation-hubs.ec.europa.eu/edih-catalogue/dig-4k">https://european-digital-innovation-hubs.ec.europa.eu/edih-catalogue/dig-4k</a>. Accessed November 2024.

<sup>&</sup>lt;sup>78</sup> Ministry of Economy. (2023). Kosovo to join the 7 billion euro Digital Europe Programme: Ministry of Economy. Available at: <a href="https://me.rks-gov.net/en/blog/kosovo-to-join-the-7-billion-euro-digital-europe-programme/">https://me.rks-gov.net/en/blog/kosovo-to-join-the-7-billion-euro-digital-europe-programme/</a>. Accessed December 2024.

<sup>&</sup>lt;sup>79</sup> Refer to footnote <sup>77</sup>.

Regional Cooperation Council (RCC). (2024). Balkan Business Barometer. Usage of online and digital tools. Available at: <a href="https://www.rcc.int/balkanbarometer/results/1/business">https://www.rcc.int/balkanbarometer/results/1/business</a>. Accessed November 2024.
 Hashani, A. et al. (2022). Digital Capacities in Manufacturing Sector in Kosovo: Riinvest Institute.
 11667816562.pdf. Accessed October 2024.

<sup>&</sup>lt;sup>82</sup> Organisation for Economic Co-operation and Development (OECD). (2024). Western Balkans Competitiveness Outlook 2024: Kosovo. Available at: <a href="https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/06/western-balkans-competitiveness-outlook-2024-kosovo\_8d0f23ec/ff74ae0e-en.pdf">https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/06/western-balkans-competitiveness-outlook-2024-kosovo\_8d0f23ec/ff74ae0e-en.pdf</a>. Accessed January 2024.





Cybersecurity has also been addressed through strategies at the local and sector levels. In 2023. Kosovo adopted its National Cybersecurity Strategy, which set objectives for raising public awareness, enhancing infrastructural and legal capacities and providing support to businesses in the development of resources for cybersecurity<sup>83</sup>. In addition to the cybersecurity strategy, the Digital Agenda 2030 also incorporates objectives related to increasing public awareness of cybersecurity risks and measuring regulatory aspects at the enterprise and national levels. The eGovernment Strategy outlines strengthening the administrative capacities of public institutions through increasing human, organisational and financial capacities.

It should be emphasised that at the regional level, by 2024, Bosnia and Herzegovina<sup>84</sup> was the only WB economy that did not have a national cybersecurity strategy and had not yet aligned its legislation with EU directives. On the other hand, North Macedonia had drafted its national cybersecurity strategy, which had not yet been adopted<sup>85</sup>. Regarding the bodies that monitor cyber risks, Kosovo has such a centre in place, the "National Cyber Security Unit" KOS-CERT, which operates under RAEPC86. Similarly, all economies in the region have established and are operating such centres<sup>87,88</sup>.

Furthermore, in the field of the ICT Research Ecosystem, one of the actions outlined in the Digital Agenda for the Western Balkans was the membership of the WB economies in the Gigabit European Academic Network (GEANT). GEANT is a connection network for national research and education networks of the European countries. In 2022, the "Kosovo Research and Education Network (KREN)" was operationalised, and shortly after the operationalisation of the KREN network, Kosovo became a member of GEANT<sup>89</sup>. At the regional level, all WB economies have their own national research and education networks, which are also part of the GEANT network<sup>90</sup>.

<sup>83</sup> Government of Kosovo. (2023). National Strategy for Cyber Security. Available at: https://mpb.rksgov.net/Uploads/Documents/Pdf/AL/2692/Strategjia%20p%C3%ABr%20Siguri%20Kibernetike%20-%20ALB..pdf. Accessed December 2024.

<sup>84</sup> Refer to footnote 33, Page: 170

<sup>85</sup> Refer to footnote 48.

<sup>&</sup>lt;sup>86</sup> National Cyber Security Unit (KOS-CERT). (2024). Homepage: National Cyber Security Unit (KOS-CERT). Available at: https://www.kos-cert.org/index.php/. Accessed November 2024.

<sup>&</sup>lt;sup>87</sup> Geneva Centre for Security Sector Governance (DCAF). Western Balkan CERT Cooperation. Available at: <a href="https://www.dcaf.ch/sites/default/files/publications/documents/Western%20Balkan%20CERT%20Coop">https://www.dcaf.ch/sites/default/files/publications/documents/Western%20Balkan%20CERT%20Coop</a> eration%20-%20mar%202021%20-%20final.pdf. Accessed November 2024.

<sup>88</sup> Interoperable Europe. (2024). Bosnia and Herzegovina, Digital Public Administration Factsheet 2024. Available at: https://interoperable-europe.ec.europa.eu/sites/default/files/inlinefiles/NIFO\_2024%20DPAF\_Bosnia%20and%20Herzegovina\_vFinal\_1.pdf. Accessed November 2024.

<sup>&</sup>lt;sup>89</sup> Ministry of Economy. (2020). Lajm i mirë për Kosovën: Një muaj pas krijimit të Rrjetit për Hulumtim dhe Edukim, anëtarësohemi në rrjetin evropian GÉANT. Available at: https://me.rks-gov.net/blog/lajm-imire-per-kosoven-nje-muaj-pas-krijimit-te-rrjetit-per-hulumtim-dhe-edukim-anetaresohemi-ne-rrjetinevropian-geant/. Accessed January 2025.

<sup>90</sup> European National Research and Education Networks (GÉANT). (2025). GÉANT Connectivity Map: GÉANT. Available at: https://map.geant.org/. Accessed December 2024.





#### ABOUT POLICY ANSWERS

POLICY ANSWERS (R&I POLICY making, implementation ANd Support in the WEsteRn Balkans) supports policy coordination in the Western Balkans and with the EC and the EU. 14 partner organisations, representing network nodes in the region and EU expert organisations, support policy dialogue through formal meetings (such as ministerial and steering platform and ad-hoc policy meetings), monitoring and agenda setting, capacity building and implementation of the EU's Western Balkan Agenda, as well as the alignment of thematic priorities. The project implements regional pilot activities and offers an information hub based on the westernbalkans-infohub.eu online information platform. The partners provide analytical evidence via monitoring and mapping activities of the stakeholder ecosystem, of the implementation of the Western Balkans Agenda and of the Western Balkans' integration into the European Research Area as well as via strategic foresight. POLICY ANSWERS also allows for tailored and targeted capacity building activities in the Western Balkans as well as regional alignment of priorities in relation to the digital transformation, the green agenda and towards healthy societies. Pilot activities provide learning opportunities on policy and programme level and reach out to final beneficiaries related to improved academia-industry cooperation, researcher mobility, inclusion of youth in policy processes, promotion of research infrastructures and increased innovation skills in all areas.

