

# Digitalisation in the Western Balkans<sup>1</sup>

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*Digitalisation has been a top priority in the Western Balkans for the past decade. The European Union, recognising it as a driver of economic growth, is encouraging the countries of the region to invest in digital development from 2017. The necessary legislation has been adopted, the institutions responsible for this have been set up and developments have been launched to provide citizens with a wide range of services. At different times, all the countries in the region have set up their own e-public administration portals, which they are working to improve with their own resources and with the support of the European Union. A strong emphasis is being placed on developing the digital skills of the younger generation, as this kind of relationship between the state and its citizens will become the new norm for the generations to come. However, not only the citizens, but also economic operators will benefit from the transition, with reduced costs and faster turnaround times, which could also be an advantage for economic operators.*

**Keywords:** *digitalisation, Western Balkans, e-public administration*

## Introduction

The digitalisation of public administrations is a process whereby the previous paper-based, multi-step process is being replaced by online administration. Western European countries have been developing their e-public administration activities for several decades now, while the more backward countries of the Western Balkans have only recently started to introduce eGovernment. Digitalisation is transforming many areas of social and economic life, such as communication, shopping habits and education. And, not least for the topic at hand, the relationship with the state.

In the majority of the Western Balkan countries, the introduction of e-public administration has been linked to the spread of the Covid-19 pandemic, which has led to an even faster pace of development, so that at least this one positive consequence of the health emergency for the region can be mentioned. Progress has been made in a number

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of areas in recent years, covering a wide range of areas such as the digitalisation of public administration, education and healthcare systems.

It is important to note that the Internet penetration rate in the region has been quite high in the last few years, and has continued to increase. Figure 1 shows that in 2020, Albania had the lowest internet penetration among the states of the region, with 75.2 percent of the Albanian population using some form of Internet. Perhaps surprisingly, the highest figure, 96.4 percent, was measured in Kosovo. However, some argue that this is not surprising, as in countries where the normal system is slow, citizens are more confident in using online e-public administration systems.

Table 1: Internet penetration in the Western Balkans

	Albania	Kosovo	Montenegro	North Macedonia	Serbia
2019	73.5%	93.2%	74.3%	81.8%	80.1%
2020	75.2%	96.4%	80.3%	79.9%	81.0%

Source: JASHARI 2022: 13.

My hypothesis is that since the 2017 agreement, we have seen a big step forward in the development of e-public administration in the region. My study is divided into two parts. In the first half, I will present the European Union’s relationship with the region in relation to digitalisation. In the other half of the paper, I will summarise the steps and achievements of the Western Balkan countries so far. Albania, North Macedonia, Kosovo, Montenegro and Serbia are the countries under study. Bosnia and Herzegovina is unfortunately excluded from the analysis due to lack of available data.

## The role of the European Union – Digital Agenda

In July 2017, as the next step in the European integration of the Western Balkans and as part of the Berlin Process,<sup>3</sup> the EU – Western Balkans Summit<sup>4</sup> was held in Trieste. The aim of the summit was to establish new directions for the region in the process of catching-up as well as to identify key areas where cooperation could be enhanced. As part of the agreed multi-annual scheme,<sup>5</sup> the Regional Economic Area formed by the Western Balkan states foresaw cooperation in four areas, with digitalisation as one of the pillars.<sup>6</sup>

The Digital Agenda for the Western Balkans<sup>7</sup> was a joint vision of the six countries of the region and the European Commission, presented on 6 February 2018 as one of the six flagship initiatives of the commitment objectives in the Communication on a credible enlargement perspective and enhanced EU engagement with the Western Balkans. In May 2018, all six regional states pledged their support for the initiative, and in June, the EU

<sup>3</sup> MOMČILO 2020.

<sup>4</sup> EWB 2017.

<sup>5</sup> Shift2Rail Joint Undertaking 2020.

<sup>6</sup> European Commission 2017.

<sup>7</sup> Western Balkans Info Hub 2018.

formally launched its scheme at the Sofia Summit.<sup>8</sup> In April 2019, at the Western Balkans Digital Summit in Poznan,<sup>9</sup> participants committed to launching the Digital Agenda, which included a roadmap for reducing roaming charges between the EU and its Western Balkan partners.

The Digital Agenda for the Western Balkans aims to support the region's transition to a digital economy, highlighting the benefits of digital transformation, such as faster economic growth, more jobs and better services.<sup>10</sup> In 2018, the six Western Balkan countries – Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia – committed to the following:

1. Investment into broadband connection:

A good digital infrastructure is essential for the roll-out of broadband in the Western Balkans. Through the Western Balkans Investment Framework (WBIF), €30 million of EU funding will be made available to build broadband infrastructure in the region to mobilise strategic investments and promote socio-economic growth. A technical assistance package has already been approved for Albania as one of the first investment packages under the WBIF.<sup>11</sup> To achieve this objective, two tasks have been identified: harmonisation of roaming tariffs and deployment of broadband internet.

a) With the new agreement on regional roaming charges, at the Digital Assembly in Belgrade (4–5 April 2019), the six participating countries agreed to extend the previous agreement on the subject from four to six countries (with the accession of Albania and Kosovo) and to gradually reduce price rates until 2021. “38 telecommunication operators from the EU and the Western Balkans have agreed to make data roaming between the Western Balkans and the EU more affordable for citizens and businesses in both regions. Maximum retail price levels (‘price caps’) for 1 gigabyte will decrease from October 2023 to 2028 as follows: €18 from 1 October 2023, €14 from 2026, and €9 from 2028.”<sup>12</sup>

In case of roaming rules between the EU and the Western Balkan states, it was pointed out that there is no legal basis for expectation and implementation until their EU accession. The establishment of voluntary, commercial agreements between operators is the basis for, and the need to meet the following expectations in the economic environment for telecoms operators: equal and fair treatment; rule of law, enforcement of existing rules; harmonisation and market-based spectrum and construction license fees, etc.; rationalisation and simplification of investment and deployment procedures.

b) In terms of broadband access, the huge digital divide between the Western Balkans and the EU are pointed out. Remote areas are not well-connected and generally have low average connection speed. Broadband is at the heart of digital transformation (e.g. eGov, eHealth, digitisation of the industry, research and innovation, small and medium enterprises and startups, education, digital

<sup>8</sup> European Council 2018.

<sup>9</sup> European Commission 2019.

<sup>10</sup> Western Balkans Info Hub 2018.

<sup>11</sup> European Commission 2018.

<sup>12</sup> European Commission 2023.

skills). Its development is crucial for the region’s economic growth. Businesses can reduce their costs by relocating to rural regions, increasing local employment opportunities, tax revenues and investment. Future developments (smart cities, autonomous vehicles, 5G deployment, etc.) will be based on broadband access. The discussions on 5G development in the region started in October 2020, including kick starting the implementation of the Memorandum of Understanding on 5G Roadmap for Digital Transformation in the Western Balkans signed during the third WB Digital Summit held in Tirana in October 2020. In three Western Balkan economies all three 5G pioneer bands are free (Montenegro, North Macedonia and Serbia) and in two economies only 700 MHz band is not freed up (Albania and Kosovo). Three economies are preparing for 5G auction in 2022.<sup>13</sup>

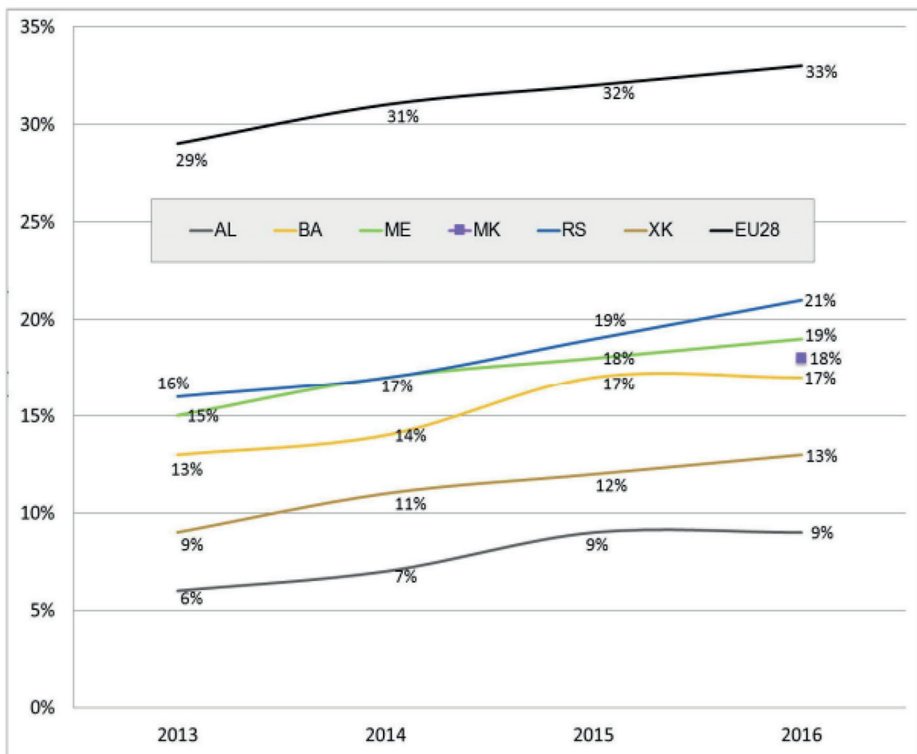


Figure 1: Broadband internet access (proportional to population)

Source: Compiled by the author.

2. Increasing cybersecurity, trust and digitisation of the industry:

The EU and the Western Balkans share a common goal of improving online security and trust. The Digital Agenda for the Western Balkans supports capacity building

<sup>13</sup> Regional Cooperation Council s. a.

in trust and security and the digitalisation of industry in the Western Balkans to ensure that all sectors benefit from digital innovation.<sup>14</sup> The cooperation aims to adopt regional cybersecurity projects to enhance cyber resilience. Digital Innovation Centers – One Stop Shops where firms (especially SMEs and startups) – can access technology testing, funding advice, market intelligence and networking opportunities.

3. Strengthening the digital economy and society:

The Digital Agenda will support the use of e-government, e-procurement and e-health tools and help citizens to develop their digital skills. This is done by supporting the participation and representation of the Western Balkans in EU initiatives and events. This has included the 2018 Startup Europe Summit in Sofia, which enabled regional startups to network with major European hubs; opening digital internships for students and young people in the Western Balkans to gain first-hand training in digital areas; opening EU Code Week to all Western Balkan partners, bringing coding skills and digital literacy to the region.<sup>15</sup>

Relevant areas of harmonisation with the EU include: eGovernment Action Plan (public administration); ISA scheme for digital public services and cross-border interoperability; eProcurement; eHealth network.

Digital skills development is being implemented through the following projects in the region: Code Week; developing coding skills and digital literacy; Digital Opportunity Traineeships for students.

4. Promoting research and innovation:

The Digital Agenda will facilitate the setting up of national research facilities and the development of state-of-the-art e-infrastructures in the Western Balkans as well as integrating them into an emerging digital European Research Area. This effort will provide world-class training for a new generation of researchers and engineers and foster interdisciplinary collaboration across Europe.<sup>16</sup>

Following a decision in 2017, the European Union also provided funding for the development of digital infrastructure through the Western Balkans Investment Framework (WBIF). In December 2019, the scope of support was extended to cover the interconnection of administrative, research and education networks, as well as high-performance computing. The new sector was developed in line with the European Commission's policies and strategies, the Digital Agenda for the Western Balkans, the Southeast Europe 2020 strategy and the infrastructure needs identified in the ONE Project. The organisation has supported 13 projects in 2022 with an investment value of up to €682,399,619.<sup>17</sup>

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<sup>14</sup> European Commission 2018.

<sup>15</sup> European Commission 2018.

<sup>16</sup> European Commission 2018.

<sup>17</sup> WBIF s. a.

## Digitalisation and the Western Balkans

Among the challenges facing the region, the most significant factor influencing economic development is the advance of digitalisation. A main question is the extent to which citizens can manage their affairs online and the interconnectivity of these e-public administration systems. Last but not least, the economic aspect should be mentioned, as in the 21<sup>st</sup> century, electronic administration allows businesses to save costs and communicate quickly. To this end, the Western Balkan countries have introduced and developed their own e-public administration portals to serve both ‘types of customers’.

Table 2: e-Government portals in the Western Balkans

Country	E-gov portal
Albania	<a href="https://e-albania.al/">https://e-albania.al/</a>
North Macedonia	<a href="http://www.uslugi.gov.mk/">www.uslugi.gov.mk/</a>
Kosovo	<a href="https://ekosova.rks-gov.net/">https://ekosova.rks-gov.net/</a>
Montenegro	<a href="http://www.euprava.me/en">www.euprava.me/en</a>
Serbia	<a href="https://euprava.gov.rs/">https://euprava.gov.rs/</a>

Source: Compiled by the author.

Digitalisation is both an opportunity and a challenge for governments, as secure use requires the right legal framework and safeguards to protect data against cyberattacks. The countries of the region have adopted a number of standards for digitisation, which are reflected in legislation in several areas.

Table 3: Legislation concerning digitalisation in the Western Balkans

Country	Legislative background
Albania	Law on Electronic Signatures Data Protection Law Law on Electronic Communications Law on Electronic Commerce Law on Electronic Documents Law on State Database
North Macedonia	Law on e-Government and e-Services Law on Electronic Documents, Electronic Identification and Trust Services Law on the Central Population Register Law on the Protection of Personal Data Law on Free Access to Public Information
Kosovo	Law on the Protection of Personal Data Law on Access to Public Documents Law on Governmental Bodies of the Information Society Law on Electronic Communications Regulation on Electronic Databases Law on Local Self-Government Regulation on Minimum Requirements for Public Consultation Draft Law on Digital Identification and Trust Services in Electronic Transactions Draft Law on Cybersecurity

Country	Legislative background
Montenegro	Law on Electronic Administration Law on Electronic Identification and Electronic Signature Law on Information Society Law on Electronic Documents
Serbia	Law on Electronic Communications Law on Electronic Documents, Electronic Identification and Security Services Law on Electronic Commerce Law on Electronic Administration Law on Free Access to Information of Public Interest Act on the Protection of Personal Data

Source: JASHARI 2022: 21.

As we reviewed the regulatory background and the portals that operate, the remainder of the paper will describe the practical operation, positive and negative experiences of each state.

## Albania

In Albania, a total of 7,705,068 applications for e-services have been made through the separate platforms provided by the different institutions, and a total of 1,210,093 citizens and businesses have applied through the e-Albania portal.<sup>18</sup>

In its Digital Agenda Horizontal Strategy 2015–2020,<sup>19</sup> Albania has set the objective of increasing and promoting the use of e-services, promoting ICT in education, consolidating digital infrastructure. During this period, public attention has focused on the creation and operation of a government portal through which citizens and businesses can access public e-services. The continuation of this strategy is still to be developed for the period 2021–2026.<sup>20</sup>

For the practical implementation of e-public administration in Albania, the government has set up the institutions responsible for its efficiency and legality: the National Authority for Electronic Certification and Cybersecurity (NAECCS), the National Agency for Information Society (NAIS), the Ministry of Energy and Infrastructure, the Ministry of Finance and Economy, the Ministry of Education, Sports and Youth, the Public Services Information Centre and the Commissioner for the Right of Information and Personal Data Protection.<sup>21</sup>

e-Albania has completed 95% of the public e-services, reaching 1,217 services, of which 300 are business-related. Currently, the e-Albania portal is the only platform in the region where citizens can receive their personal public services electronically.<sup>22</sup>

The ease of access to services in Albania is demonstrated by the widespread use of e-Albania. In 2020, a total of 7,705,068 e-service requests were submitted by

<sup>18</sup> JASHARI 2022: 13.

<sup>19</sup> Ministry of Innovation and Public Administration 2018.

<sup>20</sup> JASHARI 2022: 16.

<sup>21</sup> JASHARI 2022: 19.

<sup>22</sup> JASHARI 2022: 23.

1,210,093 citizens and businesses. A total of 12,000 administrative staff have been trained to deliver digitised, electronically signed public services, as well as 2,000 employee-based customer contact staff to help citizens apply online for the services they require from the public administration. 180 public institutions have created a total of 13 million official electronic documents to assist citizens. To increase the number of portal users and facilitate the understanding of the digital procedures for accessing public services online, NAIS aims to produce 132 promotional and training videos, mainly related to e-services, 141 e-Albania infographics and instructions on how to use specific e-services, and 30 explanatory media materials by the end of 2022.<sup>23</sup>

According to the Law on Cybersecurity,<sup>24</sup> NAECCS is the authority responsible for cybersecurity in Albania, whose tasks include contributing to the development, implementation and monitoring of law enforcement in the field of cybersecurity. According to the Commissioner for Information Rights and Personal Data Protection,<sup>25</sup> 308 complaints from citizens have been handled this year about the misuse of their personal data for marketing purposes, including online platforms during the Covid-19 pandemic. The report also shows that there are problems with the implementation of all steps of data management by public institutions, lack of legal and technical knowledge, lack of management of legal guarantees based on contractual relationships, lack of training of staff dealing with data management, lack of a data processing strategy. As regards the reporting of cybercrime, the responsibility for mitigating cybercrime lies with the State Police in conjunction with its associated institutions, while cyber incidents are dealt with by cybersecurity institutions, in this case infrastructure operators.<sup>26</sup> An OECD report praised Albania for enhancing intragovernmental cooperation, emphasising the cross-cutting character of ICT in its development strategies, and allocating resources towards the implementation of its digital strategy. Despite the proliferation of such policies, however, the country is currently the 5<sup>th</sup> largest source of cybercrime in Europe, suffering at least 1.3 million cyberattacks yearly.<sup>27</sup>

## Kosovo

Kosovo launched its national e-services portal in February 2021, with a total of 5,945 registered citizens and businesses who have used 57,414 services through the site, mainly in the areas of tax, police and healthcare.<sup>28</sup>

Kosovo has also demonstrated political will and strategic commitment through the adoption and implementation of legislation, such as the Open Government Partnership (OGP). A strategy has been developed in the areas of cybersecurity, public administration

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<sup>23</sup> JASHARI 2022: 29.

<sup>24</sup> CMS s. a.

<sup>25</sup> *Commissioner for the Right of Information and Personal Data Protection Report 2020.*

<sup>26</sup> JASHARI 2022: 32.

<sup>27</sup> OECD 2018.

<sup>28</sup> JASHARI 2022: 13.



reform, e-government, with the aim of promoting an interoperability system through the e-Kosovo portal.<sup>29</sup>

Within the Information Society Agency, the e-Government Development Department of Kosovo is responsible for the implementation of e-Government, which consists of two sectors: the policy, monitoring and analysis sector and the sector of online support and promotion of e-Government.<sup>30</sup>

Kosovo has seen significant developments taking place since 2020: 1. the development of the e-Kosovo national e-services portal, which is continuously being expanded with new e-services in cooperation with other institutions; 2. the creation of an interoperability platform that allows secure data exchange between several institutions, such as the Kosovo Business Registration Agency, the Civil Registry Agency, the Kosovo Tax Authority, the Customs, the Kosovo Cadastral Agency, etc.; 3. Draft Law on electronic identification and reliable services in electronic transactions. These recent developments are promising so far, though they are only the first steps towards the widespread use of e-services.<sup>31</sup>

In Kosovo, the Kosovo Institute of Public Administration (IPAK) within the Ministry of the Interior and Public Administration is responsible for building the capacity of civil servants and increasing the sustainability of the civil service. The IPAK trains civil servants responsible for IT management in individual institutions, but attendance at these training courses is not very high as they are not mandatory and civil servants are not encouraged to participate as, in terms of ICT training for the general public, in addition to the many projects implemented by ODK and other Kosovo NGOs, the ongoing “KODE” project,<sup>32</sup> implemented by the Ministry of Economy with the following main components, and aiming at addressing ICT capacity is publicly available: funding for Digital Connectivity, National Spectrum Monitoring, training for unemployed and underemployed young people through the Youth Online and Upward (YOU) scheme, and the National Research and Education Network.<sup>33</sup>

Kosovo launched a national e-services portal in February 2021 with a low number of services due to 1. the identification of e-services currently offered at central and local levels, which requires time and extensive research; 2. the need to inform public institutions and facilitate the migration of their e-services from their websites to e-Kosovo; and 3. the lack of legislation on digital signature/stamping, which hinders the full online availability of certain documents. As this portal is relatively new, there has not been a large-scale promotional campaign, which is also the case for other e-services offered by other public institutions.<sup>34</sup>

In Kosovo, the government body responsible for cybersecurity is the Agency for Information and Society within the Directorate for Operations and Security. As no legislation directly addresses cybersecurity, a Law on Cybersecurity is currently being drafted. The law foresees the creation of a State Cybersecurity Agency responsible for

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<sup>29</sup> JASHARI 2022: 16.

<sup>30</sup> JASHARI 2022: 19.

<sup>31</sup> JASHARI 2022: 23.

<sup>32</sup> Kosovo Digital Economy Project s. a.

<sup>33</sup> JASHARI 2022: 26.

<sup>34</sup> JASHARI 2022: 29.

overseeing, monitoring and defining cybersecurity standards, and the creation of two state teams (one for cyber emergencies and the other for cybersecurity incidents).<sup>35</sup>

## Montenegro

In Montenegro, e-services have been available since 2017, with a total of 491 applications submitted through the e-services portal in the first half of 2020.<sup>36</sup>

Despite changes in the structure of government in Montenegro, the quality of eGovernment remains a priority. The adopted Montenegrin strategies supporting the Digital Agenda are the Public Administration Reform Strategy 2016–2020, the Cybersecurity Strategy 2018–2021, the Information Society Development by 2020 and the OGP National Scheme 2018–2020.<sup>37</sup>

In Montenegro, the Ministry of Public Administration, Digital Society and Media (MPADSM) is responsible for implementation. The Ministry also deals with digital transformation in the Montenegrin public administration system, aiming at better quality of services and provision of new digital services. The other ministries involved in the process are the Ministry of Finance and Social Welfare, the Ministry of the Interior, the Ministry of Health and the Ministry of Education, Science, Culture and Sports.<sup>38</sup>

Some e-services are offered through the national e-services portal and some through the websites of individual institutions. Montenegro also uses a document management system, where more than 680,000 cases and more than one million documents have been registered so far. Recently, significant progress has been made in the use of digital signatures and electronic identification. In the past, digital certificates were predominantly used by companies in their communication with the tax authorities (20,000 companies in 2018), but not so much by individuals (400 individuals in 2018). With the introduction of the new chip ID cards in 2020 and the planned amendments to the Electronic Documents Act, negotiators estimate that around 70,000 people (more than 10% of the population) have new electronic ID cards.<sup>39</sup>

Data on the specific forms of developing and upgrading the digital skills of civil servants or citizens has yet to be collected. The MPADSM objectives include the development of common information systems: electronic identity system, electronic payment system for administrative and other fees, electronic data exchange system, development and application of e-administration, development and application of modern e-government portal and training on the use of common information systems.<sup>40</sup>

In Montenegro, a positive development in promoting and improving access to e-services is the upgrade of the government website launched in mid-May 2021. The new layout for the website is mainly focused on greater citizen orientation, better presentation

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<sup>35</sup> VLLAHIU 2022.

<sup>36</sup> JASHARI 2022: 13.

<sup>37</sup> JASHARI 2022: 16.

<sup>38</sup> JASHARI 2022: 19.

<sup>39</sup> JASHARI 2022: 23.

<sup>40</sup> JASHARI 2022: 26.

of services, information and news about government meetings, ministry news, etc. In addition, most e-services can be found on the e-government portal ([www.euprava.me](http://www.euprava.me)), which currently contains 596 services from 52 institutions, of which 187 can be fully completed electronically. The portal has a “Frequently Asked Questions” section, which contains only five questions, but there is customer service available via the contact person’s e-mail address and a short guide on how to use the portal. Unfortunately, it is currently not possible to file a complaint via the portal. The design of the portal is outdated and not very user-friendly compared to the new government website.<sup>41</sup>

The Montenegrin Directorate for Information Security and Computer Identity (CIRT) is one of the key mechanisms in the field of information and cybersecurity. One of the most significant achievements in this area is the adoption of the Law on Information Security, which transposed the EU Directive on Network and Information Security. In addition, the Regulation on Information Security Measures and the Law on the Designation and Protection of Critical Infrastructures have been adopted. The strategic planning of cybersecurity in Montenegro was based on the 2018–2021 Cybersecurity Strategy, which defines the mechanisms and tools for the implementation of national security interests, and on the work of the Information Security Council, which was established in 2019. When it comes to changes in this area, the most important compared to the baseline report is that the activities of the CIRT teams have been transferred to the competence of the Qualified Directorate for Data Protection, which operates within the Ministry of Defence, according to the amendments to the Law on Data Protection adopted at the end of 2020.<sup>42</sup> The government has not adopted a new Cybersecurity Strategy after the last one became outdated in 2021. In July 2021, the then Minister of Public Administration, Digital Society and Media, Tamara Srzentic, said that the government would improve its administrative capacities in the cybersecurity sector, and push for international cooperation and staff education.<sup>43</sup>

## North Macedonia

In North Macedonia, the national e-services system was launched only in December 2019. In 2020, there were 17,241 registered users on the portal, and this number had doubled by 2021 (34,834 registered users). No information on the number of cases opened was provided by the North Macedonian authorities.<sup>44</sup>

North Macedonia has a number of documents that provide relevant guidance, but these are considered outdated rules. New opportunities to support the Digital Agenda are provided by the scheme for 2021–2023<sup>45</sup> adopted by the Ministry of Finance and the

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<sup>41</sup> JASHARI 2022: 29.

<sup>42</sup> JASHARI 2022: 32–33.

<sup>43</sup> KAJOSEVIC 2022.

<sup>44</sup> JASHARI 2022: 14.

<sup>45</sup> *Economic Reform Program for the period 2021–2023*.

strategic plan for 2021–2023 of the Ministry of Information Society and Administration (MISA). The preparation of the National Strategy<sup>46</sup> on Artificial Intelligence is underway.<sup>47</sup>

In case of North Macedonia, MISA is the central body in charge of the coordination process, with its own completed projects, strategic plan and annual work scheme.<sup>48</sup> Its activities are related to the development and promotion of the information society, as well as to the integrated information and communication network, databases, interconnection and exchange of information, security aspects and infrastructure development.<sup>49</sup>

MISA has developed a new document management system where, according to the survey, only 9 out of 101 institutions responding to the survey noted that they had a DMS. Nevertheless, North Macedonia has a national interoperability framework covering legal, organisational, semantic and technical interoperability.<sup>50</sup> In addition, the Law on Electronic Management and Services and the Law on Electronic Documents, Electronic Identification and Trust Services (MISA) issued by the competent authority are at an advanced stage of implementation.<sup>51</sup>

Research shows that digital skills are lacking not only among the general population of North Macedonia, but also in its public administration. With this level of digital skills, the transition to fully digital operations and services will be neither quick nor easy, and the state needs to adopt a strategic approach promptly for the mitigation of the problem.<sup>52</sup> The latest European Commission progress report<sup>53</sup> on the country states that the drawing-up of a Digital Skills Development Strategy is on its way and digital literacy is a priority in the new Education Strategy, which is likely to be coordinated by the Ministry of Education and Science (although MISA may turn out to be the coordinator). In this respect, a National ICT Strategy 2021–2025 is to be adopted, but it is still yet to occur.<sup>54</sup>

In North Macedonia, the national e-services portal is being promoted as the main tool for citizens to access e-services with a total of 151 e-services. Accordingly, the concept of “One Stop Shop for services and e-services intermediary” is a temporary or complementary solution that would allow all citizens to access e-services quickly and easily. In line with this, the implementation of the DA is being monitored by a strong NGO sector, of which the Metamorphosis Foundation for Internet and Society and the Center for Change Management stand out as two specialised NGOs that have carried out a number of research projects. Through their research and publications, they have a significant influence on the collection of data and the publication of research results that allow the country to be measured and compared with other countries. However, the institutions have made very little effort to promote the portal and the e-services offered through it.<sup>55</sup>

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<sup>46</sup> *National Strategy for Artificial Intelligence* s. a.

<sup>47</sup> JASHARI 2022: 16–17.

<sup>48</sup> *North Macedonia Scheme Regarding e-Governance Coordination* 2020.

<sup>49</sup> JASHARI 2022: 19.

<sup>50</sup> *North Macedonia National Operability Framework* s. a.

<sup>51</sup> JASHARI 2022: 23.

<sup>52</sup> ITU 2021.

<sup>53</sup> European Commission 2020.

<sup>54</sup> JASHARI 2022: 26.

<sup>55</sup> JASHARI 2022: 30.

North Macedonia has a National Cybersecurity Strategy<sup>56</sup> for the Republic of Macedonia 2018–2022. The rules on the security and integrity of networks are set by the Electronic Communications Agency (AEC) with the rules to ensure the security and integrity of networks, public electronic communications networks and services and actions that operators must take in the event of a personal security breach, dated 2015 and amended in 2019. In addition, the Electronic Communications Act established the National Centre for Computer Incident Response, MKD-CIRT, as a separate entity. It is the department of the AEC that institutionalises the protection of network and information security, especially for entities with critical infrastructure.<sup>57</sup>

## Serbia

As of April 2020, the number of registered users of the Serbian eGovernment portal has skyrocketed from 17,857 to 1,026,347, representing 15% of the country's population. However, the number of services provided has not changed compared to the previous period, with an average of 76,028 requests per month.<sup>58</sup>

Serbia is showing political will and strategic commitment to move forward in the field of eGovernment. Serbia has adopted the eGovernment Development Scheme and Action Plan for 2020–2022, which paves the way for further development of eGovernment.<sup>59</sup> The scheme is expected to deliver 300 new e-services to citizens and the economy over the next two years.<sup>60</sup>

In Serbia, the main body overseeing and implementing e-government is the Information Technology and e-Government Agency. The Office is responsible for the design, harmonisation, development and operation of e-public administration and information systems and infrastructure for public administrations and government services.<sup>61</sup> The preparation of the legislative framework is the responsibility of two ministries: the Ministry of State Administration and Local Government, which is in charge of administrative reform and e-government, and the Digital Agenda Department of the Ministry of Trade, Tourism and Telecommunications.<sup>62</sup>

In contrast, Serbia's eGovernment portal was launched in 2010 and now has 1,026,347 registered users. In 2020, the portal underwent a major overhaul, with a two-step authentication process to improve the security of user profiles, a new design and enhanced functionality. More importantly, the portal has linked 15 different public registers and made them accessible to users.<sup>63</sup>

<sup>56</sup> *North Macedonia National Cybersecurity Strategy of the Republic of Macedonia 2018–2022.*

<sup>57</sup> JASHARI 2022: 33.

<sup>58</sup> JASHARI 2022: 14.

<sup>59</sup> *eGovernment Development Scheme 2020.*

<sup>60</sup> JASHARI 2022: 17.

<sup>61</sup> *Office for IT and Government in Serbia s. a.*

<sup>62</sup> JASHARI 2022: 19.

<sup>63</sup> JASHARI 2022: 23–24.

Serbia is the only country in the region with a strategic approach to digital literacy, i.e. The Digital Skills Strategy 2020–2024.<sup>64</sup> It aims to develop the digital skills of citizens with the aim of fully exploiting the potential of information and communication technologies to improve the level of standard and quality of services.

The latest information on digital literacy for 2020 shows that 51% of the population of Serbia is digitally illiterate, 15% is only partially literate, leaving the remaining 34% of the population fully literate. As for the gender gap, the female population has 4% higher digital illiteracy than the male population.<sup>65</sup>

In 2020, the Serbian e-government portal underwent a major overhaul, improving online security for profile users and adapting the portal to the parameters for accessing services via mobile platforms. With around 15% of the population registered as users, the number of users has increased by 2% in the last year. The portal lists services provided by 124 institutions at local and national level, with one of the most frequently used services being the registration of children in kindergarten, which was used by 47,964 parents.<sup>66</sup>

Meanwhile, Serbia has recently renewed the Strategy for the Development of the Information Society and Information Security<sup>67</sup> in the Republic of Serbia for the period 2021–2026, in line with EU directives. In addition, the Law on Information Security regulates this field. According to the Law on Information Security, the Regulatory Agency for Electronic Communications and Postal Services has become the National Center for the Prevention of Security Risks in ICT Systems of the Republic of Serbia (CERT),<sup>68</sup> which is supervised by the competent authority, the Ministry of Trade, Tourism and Telecommunications. The national CERT collects and exchanges all information related to information security risks, and notifies, alerts and advises ICT management teams in the Republic of Serbia, as well as the general public.<sup>69</sup> So far, there are 15 registered CERT members, most of which are large business companies.<sup>70</sup>

## Summary

Digitalisation is a new area of cooperation in the Western Balkans, where the European Union foresaw developments in 2017. As can be seen, over the last decade, the states in the region have gradually established e-public administration portals where they can now manage a wide range of transactions electronically. Financial support is provided jointly by the individual states and the European Union. Cooperation is proceeding according to the roadmap set out in the agreement, which initially involved a reduction in roaming charges between the two countries. Reforms also require an appropriate legislative

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<sup>64</sup> *Strategy for the Development of Digital Skills for the period 2020–2024 in Serbia 2020.*

<sup>65</sup> *Serbia's Statistical Yearbook 2020.*

<sup>66</sup> JASHARI 2022: 30.

<sup>67</sup> *Strategy for the Development of Information Society and Information Security in the Republic of Serbia for 2021–2026.*

<sup>68</sup> *National Center for the Prevention of Security Risks in ICT Systems of the Republic of Serbia s. a.*

<sup>69</sup> *Serbia National CERT s. a.*

<sup>70</sup> *Registered CERT Associates in Serbia s. a.*

framework, which has been adopted in all the countries concerned, albeit in a fragmented way, but with a number of laws dealing with e-government, personal data protection or cybersecurity challenges. By setting up coordinating institutions, we can be confident that digitisation will proceed at the right pace and even that good practices will be shared across the region. And the increase in the number of cases and users suggests that e-public administration has been increasingly used in recent years, with large-scale developments, especially during the Covid-19 pandemic, and citizens learning and getting used to using these platforms.

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