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Digital Transformation of Companies in the Western Balkans

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Purpose: This paper assesses the state of digital transformation in the Western Balkans and identifies key opportunities and barriers to competitiveness, sustainable development, and integration into the European Single Digital Market.

Methodology: A comparative, indicator-based analysis is applied, combining statistical data, policy review, and a focus on small and medium-sized enterprises (SMEs) and national strategies.

Findings: Results reveal significant disparities: Croatia and Slovenia are near EU benchmarks, while Albania, Bosnia and Herzegovina, and North Macedonia lag due to weak digital skills and infrastructure. Advancing human capital, SME digital adoption, and supportive policy frameworks is essential for competitiveness and EU integration.

Contribution: The study provides one of the few comparative analyses of digital transformation in the Western Balkans, offering new insights on SMEs, structural barriers, and policy measures.

Keywords: digital transformation, digitalization, companies, digital world, Western Balkans

Introduction

The term Western Balkans is most commonly used by the European Union to refer to a region comprising Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, and Serbia. Croatia and Slovenia were previously considered part of the Western Balkans until their respective EU accessions in 2013 and 2004 (Grida 2015).

This paper focuses on researching the digital transformation of companies in the Western Balkans, a region undergoing significant socio-economic changes and seeking closer alignment with the European Union. Digital transformation refers to a fundamental shift in how companies leverage digital technologies—such as cloud computing, big data, artificial intelligence, and automation—to redefine business processes, develop innovative models, and create added value for both customers and stakeholders. It involves more than just adopting new tools; it requires a comprehensive rethinking of organizational culture, operational efficiency, and strategic vision.

The paper provides a comparative overview of the current state of digital transformation across Western Balkan countries, including Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, and Serbia, with additional reference to Croatia and Slovenia as post-transition economies and former Western Balkan members that have joined the EU. It examines key

indicators such as digital skills, internet access, business adoption of digital tools, and the availability of digital public services, aiming to assess how well-positioned these countries are for the ongoing digital transition.

Special attention is given to the industrial and SME sectors, which play a crucial role in the regional economy but often face structural barriers to digitalization, such as limited funding, underdeveloped infrastructure, and a shortage of skilled labor. The research also explores national strategies, policy frameworks, and international support programs that influence the pace and effectiveness of digital transformation efforts.

By evaluating these elements, the paper aims to identify opportunities, gaps, and best practices, contributing to a deeper understanding of how digital transformation can support sustainable development, increase competitiveness, and enhance integration into the broader European digital single market.

All of the aforementioned countries will be analyzed in the paper. To better assess the level of digital development and the current state of digital transformation, the following indicators will be examined: digital skills of the population, percentage of enterprises with a website, social media presence, online sales, and use of cloud computing services.

With this paper, we aim to answer the following question: How do differences in digital skills, business adoption of digital tools, and national policy frameworks shape the progress of digital transformation in Western Balkan countries, and what are the implications of these disparities for their competitiveness, sustainable development, and integration into the European Digital Single Market?

Literature review

Digitalization has become one of the most important business topics today, fueled by rapid technological progress. While many companies invest in new tools, such efforts are often insufficient or lack strategic planning. The digital economy—encompassing all operations conducted via digital platforms—places knowledge and intellectual capital above mass production, with success increasingly tied to understanding customer needs and delivering tailored solutions (Spremić 2017; Turban, Pollard and Wood 2021).

A key driver of this shift is the widespread adoption of ICT, which boosts productivity but also challenges traditional business models, consumer behavior, and regulatory systems (Turban, Pollard and Wood 2021). According to Ebert and Duarte (2018), the main goals of digital transformation are to apply innovative technologies to increase productivity, create value, and enhance social well-being. From a social perspective, this requires fostering innovation, reforming education, and building reliable digital infrastructure; from an economic perspective, it means adopting new business models, improving efficiency, and refining technical standards (Demir 2023). These processes build on decades of progress in robotics, computer science, AI, microelectronics, and related fields (Demir 2023).

Although adoption is spreading across industries, integrating internal systems into a unified workflow remains a challenge. Nevertheless, digitalization continues to significantly improve business operations (Quixy 2024). Beyond simple tool adoption, digital transformation represents a fundamental organizational shift requiring strategic planning, employee adaptation, customer orientation, and cost alignment to corporate goals (Quixy 2024; Whatfix 2022). Benefits include higher efficiency (e.g., IBM bots performing tasks 20 times faster with fewer errors), improved resource management through system consolidation, and sustainability gains via digital engineering tools such as CAD, PLM, simulation, and IoT (Quixy 2024).

At the same time, several risks persist: shortages of IT expertise in areas like cybersecurity and data analytics, weak change management, high project costs, and integration risks that require careful allocation of resources (Whatfix 2022; Mai Xuan Truong 2023).

At the policy level, the European Commission's *Road to the Digital Decade* (Digital Compass) sets ambitious 2030 targets: 80% of adults with basic digital skills, 20 million ICT professionals, and greater female participation in tech; gigabit connectivity, universal 5G coverage, and Europe's first quantum computer; 75% of firms adopting cloud, big data, and AI, with 90% of SMEs accessing basic digital tools; and universal access to online public services, digital health records, and digital IDs (European Commission 2023).

Methodology

This study applies a comparative, indicator-based research design to assess the state of digital transformation in the Western Balkans. The analysis is grounded in quantitative data collected from national statistical offices, Eurostat, and international organizations (e.g., UNDP, GIZ), complemented by a review of national digital strategies and policy documents.

Five key indicators were selected to enable cross-country comparison and alignment with the European Commission's *Digital Economy and Society Index (DESI)* framework:

1. Digital skills of the population (percentage of adults with at least basic digital skills);
2. Enterprises with a website (as a proxy for online visibility);
3. Social media presence of enterprises (reflecting business use of digital communication channels);
4. Online sales by enterprises (indicating e-commerce adoption);
5. Use of cloud computing services by enterprises (capturing advanced digital tool adoption).

These indicators were chosen because they reflect both the demand side (citizens' skills) and the supply side (business adoption of digital tools), which together shape the level of digital readiness. For comparison, EU averages were used as benchmarks.

The comparative design emphasizes disparities between Western Balkan countries and EU members (Croatia and Slovenia included as reference points). Particular attention is given to small and medium-sized enterprises (SMEs), which dominate the region's economic structure but often face financial, infrastructural, and human capital constraints.

The analysis is constrained by uneven data availability across countries and years. For example, Montenegro lacks up-to-date and consistent statistical indicators, which limited its inclusion in some parts of the analysis. Furthermore, the comparability of indicators is occasionally affected by differences in national statistical methodologies. These constraints mean that results should be interpreted with caution, especially when drawing generalized conclusions for the entire region.

Digitalization of Western Balkan countries

Albania

The Albania Digital Agenda 2022–2026 aims to provide enterprises, public administration, and individuals with access to the latest resources and technologies by investing in advanced computing, data processing, artificial intelligence, cybersecurity, and digital skills. The digital

government initiative enables the implementation of smart policies, efficient procedures, and innovative solutions on secure platforms. The Digital Business component supports the creation of new enterprises and startups, especially through the application of Internet of Things (IoT) technologies to enhance efficiency and cost management (Aliaj and Tiri 2023).

To further expand the use of digital services and increase the competitiveness of Albanian businesses, the government is encouraged to adopt best practices for digitalization—particularly focusing on internet connectivity, IoT, and cloud services. The development of financial technology (fintech) will also be supported to ensure sustainability, improve efficiency, boost competitiveness, and increase financial access and inclusion (United Nations 2022).

State of Digital Transformation in Albania (INSTAT 2023):

- Population with basic digital skills: 21% (2019)
- Enterprises with a website: 54.9% (2023)
- Enterprises with a social media presence: 80.5% (2023)
- Enterprises conducting online sales: 14.8% (2023)
- Enterprises using cloud computing services: 22.9% (2023)

The lack of digital skills negatively affects both the demand and supply of digital products. To address this, digital competencies must be integrated into the education system from an early stage.

Digitalization and the promotion of digital skills have the potential to reduce high unemployment, particularly in rural areas. They may also generate positive spillover effects in sectors such as tourism and exports, contributing to broader economic development (Albania Investment Council 2023).

Additionally, the NEET rate (Not in Employment, Education, or Training) peaks at 37.7% among the 25–29 age group, highlighting the difficulties young people face in entering the labor market. Furthermore, long-term unemployment affects two-thirds of the workforce, and the skills gap remains a persistent challenge (Albania Investment Council 2023).

Croatia

Croatia ranked 21st out of 27 EU Member States in the 2022 edition of the Digital Economy and Society Index (European Commission 2022).

As early as 2018, the Government of the Republic of Croatia began drafting the National Development Strategy until 2030, aiming to establish a foundation for sustainable, inclusive, and innovative development. One of its key instruments is the Recovery and Resilience Plan, developed in cooperation with the European Commission. These plans serve as the primary strategic documents for planning and implementing reforms, investments, and projects that promote economic recovery, sustainable development, and digital transition. The plan outlines reforms and investments that Croatia intends to implement in the coming years, in line with the objectives of the Recovery and Resilience Mechanism (Vlada Republike Hrvatske 2021).

Goals of the Recovery and Resilience Plan for Digital Transformation (Vlada Republike Hrvatske 2021):

1. Establish a strategic framework to ensure a systematic approach to digitalization, including the development of standards and mechanisms for coordination, monitoring, and evaluation, ensuring that future digital projects maximize their contribution to the digital transition.
2. Fully implement a central interoperability system to enable secure data exchange and seamless integration of services between public administration and the private sector.

3. Align state information infrastructure with European initiatives, and modernize key public digital services for the benefit of both citizens and businesses.
4. Ensure adequate broadband coverage and capacity, especially in critical sectors such as the economy, agriculture, transport, health, and education.

Current State of Digital Transformation in Croatia (Državni zavod za statistiku 2023):

- Population with basic digital skills: 63% (2021)
- Enterprises with a website: 69% (2023)
- Enterprises with a social media presence: 24% (2021)
- Enterprises conducting online sales: 15% (2023)
- Enterprises using cloud computing services: 45% (2023)

Bosnia and Herzegovina

Bosnia and Herzegovina's digital readiness remains low. As of 2019, only 72% of households had internet access, and a small portion of adults used the internet even once per year, indicating the need for stronger digitalization efforts (Regional Cooperation Council 2021). Digital skills are also insufficient: only 24% of the population had basic or above-basic skills, compared to the EU average of 57%. Just 8% had more than basic digital abilities, while 46% had low digital skills, versus 29% in the EU. Software-related skills were also weak, with only 12% of individuals proficient— the lowest rate in the Western Balkans (Regional Cooperation Council 2021).

SMEs in Bosnia and Herzegovina face additional barriers**,** including limited access to affordable and reliable internet, insufficient training, and a lack of awareness of digitalization benefits. These issues were confirmed by business support providers (GIZ 2023). Nonetheless, progress is being made. The government and private sector have introduced support measures, such as technology upgrades, digital skills training, and advisory programs for SMEs (GIZ 2023).

While 98% of companies use computers and 96% have internet access, only about 60% of small businesses have websites, and just 18% engage in e-commerce. Bosnia and Herzegovina ranked 75th out of 132 countries in the 2021 Global Innovation Index (WIPO 2021). Low R&D commercialization is linked to limited public investment (0.03% of GDP) and underdeveloped innovation ecosystems, including poor collaboration between SMEs and research institutions (GIZ, 2023).

Key challenges for digital transformation in Bosnia and Herzegovina (GIZ 2023)**:**

- Bureaucratic inefficiencies are slowing both economic growth and digital skill development
- Shortage of ICT professionals
- Underdeveloped startup ecosystems
- Emerging smart specialization strategies focusing on ICT, creative industries, organic food, and tourism

In addition to national strategies, various international projects support digital transformation, particularly those led by UNDP, GIZ, and the Chamber of Commerce of the Republic of Srpska (Turulja, et al. 2021).

The UNDP project “Digital Transformation in the Public Sector in Bosnia and Herzegovina (2020–2024)” aims to improve public service delivery through technology, strengthen legal frameworks, develop inclusive e-services, and foster open innovation and knowledge sharing (Turulja, et al. 2021).

The GIZ project "Innovations and Digitalization in SMEs" promotes digital awareness and innovation, especially in traditional sectors like agriculture, wood and metal processing, and tourism. It supports service providers working with SMEs and improves digital transformation infrastructure (Turulja, et al. 2021).

The Chamber of Commerce of the Republic of Srpska plays a central role through its Center for Digital Transformation, established in 2020. The center offers standardized consulting, training, and advisory services, and has certified 10 digital transformation consultants following models from Austria, Germany, and Serbia (Privredna komora Republike Srpske 2020).

Current State of Digital Transformation in Bosnia and Herzegovina (Agencija za statistiku Bosne i Hercegovine 2023):

- Population with basic digital skills: 24%
- Enterprises with a website: /
- Enterprises with a social media presence: /
- Enterprises conducting online sales: 27%
- Enterprises using cloud computing services: 21%

Montenegro

The Government of Montenegro has launched the Strategy for the Digital Transformation of Montenegro 2022–2026 to promote innovation, modernization, competitiveness, and comprehensive socio-economic development. The strategy aims to enhance public services by leveraging new technologies and digital tools to better meet citizens' needs efficiently and effectively. Its development involved broad collaboration between the Ministry of Public Administration, Digital Society and Media, business associations, ICT companies, and members of the civil and academic sectors, as well as input from citizens across Montenegro (eKapija 2023).

The strategy was developed through an inclusive and participatory process, which included public consultations, situational analyses, and the definition of both strategic and operational goals. The Action Plan outlines a wide range of activities intended to accelerate the country's digital transformation. While technology itself has not altered the core mission of public services, it has introduced new tools to improve delivery. Both public servants and private sector professionals are working to ensure that policies, services, and products are designed to meet the real needs of users, including parents, students, and the elderly (Ministarstvo javne uprave, digitalnog društva i medija 2021).

The main objectives of the strategy are to strengthen institutional capacities for digital transformation, raise digital awareness, and enhance the competitiveness of the ICT sector. As such, the strategy represents a key component in achieving the country's digital ambitions and in ensuring effective governance of the digital transition (Ministrstvo za gospodarski razvoj in tehnologijo 2022).

Due to the early stage of digital transformation in Montenegro, up-to-date statistical data is limited. The last available figures were published in 2011, and therefore, have not been included in this analysis (Monstat 2011).

North Macedonia

North Macedonia is making significant progress in its digital transformation, with near-ubiquitous 3G and 4G coverage, 5G coverage in 16 cities, and a global ranking of 30th for mobile broadband speeds. The country's digital governance is also improving, guided by EU-aligned frameworks. However, persistent challenges include the high cost of digital services, limited public awareness, digital skill gaps, and regulatory barriers (UNDP 2023).

The capital, Skopje, is emerging as a hub for technological innovation. To address existing challenges, multilateral discussions on pricing models and strategies to improve public sector connectivity have been recommended. The government is also developing a comprehensive Monitoring and Evaluation framework, promoting digital literacy among civil servants, and increasing public awareness through national campaigns (UNDP 2023).

North Macedonia has made notable progress in regulatory transparency, e-commerce, and cybersecurity. However, data privacy, public awareness, and access to skilled talent remain ongoing issues. Despite financial support such as the EUR 85 million Green Economy Financing Facility, the startup ecosystem continues to face obstacles due to regulatory complexities and talent shortages. Although 80% of the population has internet access, only 32% possess basic digital skills, with older and vulnerable groups being most affected (UNDP 2023).

Enterprises that have adopted digital transformation report an average growth rate of 26%. In North Macedonia and across the Western Balkans, digital operations make up approximately 10% of overall business activity. Notably, 63.3% of companies in North Macedonia recognize digitalization as a key opportunity to improve their operations (Tasevska and Nedanovski 2021).

State of Digital Transformation in North Macedonia (MAKSTAT 2023):

- Population with basic digital skills: 32% (2021)
- Enterprises with a website: 52.5% (2023)
- Enterprises with social media presence: *no data available*
- Enterprises conducting online sales: 14.3% (2023)
- Enterprises using cloud computing services: *no data available*

Serbia

With the onset of the Fourth Industrial Revolution, digitalization has become a key driver of innovation, modernization, economic growth, competitiveness, and overall socio-economic development. The Government of the Republic of Serbia has recognized the importance of digitalization and the development of electronic administration, which has led to significant progress in recent years. As one of the government's top priorities, digitalization is transforming public administration by enhancing efficiency, transparency, and quality of services (Kancelarija za informacione tehnologije i elektronsku upravu 2021).

Several countries have expressed interest in e-government solutions, with political support for digital transformation demonstrated during the Western Balkans Digital Summit held in April 2019. In this context, the "Serbia Digitalizes" program was launched to strengthen technical and professional capacities in e-government, enhance economic and political cooperation, and lay the foundation for future international development partnerships. The program serves as a tool for cooperation between Serbia and its partner countries, promoting regional knowledge exchange and facilitating the provision of electronic services across the region (Kancelarija za informacione tehnologije i elektronsku upravu 2021).

State of Digital Transformation in Serbia (Republički zavod za statistiku 2023):

- Population with basic digital skills: 47.7% (2023)
- Enterprises with a website: 85.1% (2023)
- Enterprises with a social media presence: 53% (2023)
- Enterprises conducting online sales: 28.2% (2023)
- Enterprises using cloud computing services: 37% (2023)

Slovenia

Slovenia ranked 11th among the 27 EU Member States in the 2022 Digital Economy and Society Index (DESI), with progress in line with the EU average (European Commission 2022).

The key strategic document outlining digital transformation in Slovenia is the Strategy for the Digital Transformation of the Economy (2021–2030). It was developed alongside ongoing processes of digitalization, computerization, and the integration into the EU's single digital market. The strategy emphasizes advanced technologies such as artificial intelligence, the Internet of Things, big data analytics, blockchain, high-performance computing, quantum computing, and 5G—all considered drivers of economic growth and competitiveness. It builds on existing technologies and initiatives, incorporating findings and recommendations from the European Commission and key digital indicators monitored at both the European and global levels (Ministrstvo za gospodarski razvoj in tehnologijo 2022).

The strategy focuses on three key areas:

1. Advanced digital technologies that enable the digital transformation of the economy.
2. An efficient ecosystem that supports a competitive economy.
3. An open and sustainable society, which provides the foundation for digital economic growth (Ministrstvo za gospodarski razvoj in tehnologijo 2022).

Support for the digital transformation of companies includes (Ministrstvo za gospodarski razvoj in tehnologijo 2022):

- Grants (subsidies)
- Refundable funds (e.g., equity, seed capital, venture capital, microloans, and guarantees with interest subsidies)
- Combined support mechanisms, such as pairing seed capital with non-financial assistance (mentorship, training)

By applying to public calls, micro, small, and medium-sized enterprises (SMEs) in Slovenia can enhance their digital competencies, strategies, and marketing efforts. The goal is to foster business development and innovation, boost competitiveness, and increase adaptability in a rapidly digitalizing market.

In 2023, the main barriers to digital transformation in Slovenian enterprises were:

- Lack of relevant staff or digital skills: 41% (up from 36% in 2022)
- Lack of financial resources: 37% (up from 31% in 2022)
- Limited ability to adapt business processes quickly: 32%
- Perception that digital transformation is non-essential: 27% (down from 43% in 2022) (Statistical Office of the Republic of Slovenia 2023)

State of Digital Transformation in Slovenia (Statistical Office of the Republic of Slovenia 2023):

- Population with basic digital skills: 47% (2023)
- Enterprises with a website: *data not available*
- Enterprises with a social media presence: 57% (2023)
- Enterprises engaging in online sales: 20% (2023)
- Enterprises using cloud computing services: 40% (2023)

Summary and discussion

Digitalization as a national priority involves achieving modernization across public and private sectors through the adoption and integration of information and communication technologies (ICT). It is not simply a technological trend but a transformative process reshaping how institutions function, how services are delivered, and how citizens interact with society. Digital tools act as catalysts of economic modernization and enablers of the shift toward a knowledge-based economy. This transformation supports responses to complex challenges, from environmental protection to education reform and cultural development, while also creating innovative, high-value-added industries essential for global competitiveness (MKD2030 2022).

Non-EU countries in the Western Balkans increasingly recognize the strategic value of digital transformation, as reflected in their national strategies. However, progress is uneven, hampered by structural barriers such as inadequate infrastructure, persistent digital skills gaps, and limited institutional capacity to monitor and promote digitalization. While optimism is visible in government plans and chambers of commerce, these countries remain at different starting points, which has direct consequences for their readiness to integrate into the EU's Digital Single Market (DSM).

Table 1: State of digital transformation in Western Balkans (2021 - 2023)

Metric	EU average	Albania	Croatia	Bosnia and Herzegovina	North Macedonia	Serbia	Slovenia
Population with digital skills	56%	21%	63%	24%	32%	48%	47%
Companies with a website	78%	55%	69%	/	55%	85%	/
Companies with social media	61%	81%	24%	/	/	53%	57%
Companies doing online sales	24%	15%	15%	27%	6%	28%	20%
Companies using cloud computing	45%	23%	45%	21%	/	37%	40%

The data reveal pronounced disparities in digital readiness across the Western Balkans. Croatia and Slovenia demonstrate relatively strong performance—high digital skills, higher use of cloud computing, and greater online business activity. This places them closer to EU standards, suggesting smoother integration into the DSM. By contrast, Albania, Bosnia and Herzegovina, and North Macedonia show persistent weaknesses, from low digital skills to weak cloud adoption, raising concerns about their ability to meet the benchmarks necessary for effective DSM participation. Serbia's results place it between these two groups: strong in business digitalization (notably high percentages of company websites and online sales) but constrained by gaps in workforce preparedness.

These disparities are not merely descriptive; they translate into different capacities for EU integration. For example, Albania's very low digital skills rate (21%) severely limits participation in DSM-related initiatives. Without a skilled workforce, both businesses and citizens remain excluded from cross-border digital services, e-commerce, and the digital labor market. In Bosnia and Herzegovina, the lack of reliable and up-to-date data itself points to institutional weaknesses. Without adequate monitoring capacity, the country cannot effectively align policies with EU digital regulations, making harmonization with DSM rules difficult. North Macedonia faces similar challenges: although some infrastructure (e.g., broadband coverage) is in place, weak digital skills (32%) and minimal e-commerce adoption (6%) mean that its business sector risks marginalization in EU value chains.

Serbia illustrates an interesting case: the very high share of firms with websites (85%) and notable e-commerce adoption (28%) suggest strong business readiness. However, deficiencies in workforce digital skills (48%) mean that long-term sustainability remains uncertain. Without investment in human capital, Serbia may face a bottleneck—its firms can engage digitally now, but scaling integration with EU companies and digital ecosystems will be limited. Slovenia, by contrast, shows signs of digital maturity, with strong cloud adoption (40%) and social media use by enterprises (57%), reflecting alignment with EU trends. This maturity facilitates transparency, resilience, and stronger consumer engagement—all traits highly valued in the DSM, particularly under crisis conditions such as the COVID-19 pandemic.

Croatia occupies a bridging position: while its overall DESI performance remains below the EU average, its relatively high digital skills (63%) and progress in cloud adoption bring it close to EU standards. This enables Croatian companies and public institutions to integrate more seamlessly into DSM processes, from regulatory compliance to participation in digital trade. Yet the lower use of social media by companies (24%) signals cultural and structural lags in how firms adopt new communication channels. Addressing these will be necessary for Croatia to move beyond compliance and toward leadership in EU digital markets.

he findings of this paper show that differences in digital skills, business adoption of digital tools, and national policy frameworks fundamentally shape the progress of digital transformation in the Western Balkans. Countries such as Croatia and Slovenia, where digital skills and infrastructure are relatively advanced and supported by coherent policies, are better positioned to integrate into the DSM and reap its benefits in terms of competitiveness and sustainable growth. By contrast, Albania, Bosnia and Herzegovina, and North Macedonia lag significantly, as limited skills and underdeveloped infrastructure undermine both business adoption and policy implementation. This not only slows their digital transition but also risks widening the economic and social gap with EU member states. Serbia, while relatively strong in business digitalization, demonstrates that progress in one domain (business practices) cannot fully compensate for weaknesses in another (human capital).

The implications are clear: without narrowing these disparities, the Western Balkans will face a fragmented path to DSM integration, with some countries moving forward and others left behind. For competitiveness, this means that firms in digitally lagging states will struggle to enter EU value chains or access cross-border e-commerce opportunities. For sustainable development, gaps in skills and infrastructure threaten to reinforce existing inequalities, excluding vulnerable populations from digital services. For EU integration, uneven readiness undermines the region's collective capacity to meet the *Digital Compass 2030* targets, which emphasize not only technology adoption but also inclusivity and resilience (European Commission 2023).

Conclusion

The comparative analysis shows that while the Western Balkans as a region is advancing toward digitalization, large disparities persist, with direct implications for DSM integration. EU members Croatia and Slovenia benefit from sustained investment and policy alignment, giving them a comparative advantage in meeting DSM benchmarks. Conversely, Albania, Bosnia and Herzegovina, and North Macedonia risk being left behind due to insufficient digital skills, weak infrastructures, and poor institutional capacity. These deficiencies mean that their integration into the DSM is likely to be delayed, uneven, or partial, unless significant reforms are undertaken. Serbia, meanwhile, demonstrates strong business-level adoption of digital practices but faces long-term risks unless digital skills are strengthened.

In direct response to the research question, the findings show that differences in digital skills, business adoption of digital tools, and national policy frameworks are decisive in shaping the pace of digital transformation across the region. Countries with higher skill levels, stronger infrastructures, and coherent policies—such as Slovenia and Croatia—are better positioned to integrate smoothly into the DSM and benefit from cross-border digital opportunities. By contrast, lagging states with weak digital capacities face slower or partial integration, limiting their competitiveness, inclusiveness, and sustainable development prospects.

These country-specific differences matter because DSM participation requires more than technology adoption; it demands regulatory harmonization, human capital development, and robust institutional capacity. Countries with higher skills and advanced infrastructures are better equipped to benefit from cross-border digital services, EU innovation networks, and e-commerce ecosystems. By contrast, countries with low readiness face exclusion, reinforcing socio-economic inequalities both within the region and between the Western Balkans and the EU.

To bridge this divide, policy efforts must go beyond generic digitalization strategies. Albania must prioritize basic digital skills and literacy; Bosnia and Herzegovina must strengthen institutional monitoring and policy implementation capacities; North Macedonia must focus on SME e-commerce adoption and digital literacy; Serbia must consolidate its strong business performance with education and skills reforms. Croatia and Slovenia should continue aligning with advanced EU practices, but also play a role in regional knowledge transfer, helping neighboring countries raise their capacities.

Ultimately, DSM integration will depend on reducing these structural gaps. Without coordinated reforms in education, infrastructure, and governance, the Western Balkans risk developing a two-speed digital economy—where EU members progress toward DSM participation while others fall further behind. Such fragmentation would not only undermine competitiveness but also weaken the region's ability to fully benefit from EU membership prospects and cross-border digital trade. A coordinated, region-specific approach, supported by EU funds and regional cooperation, is therefore essential to ensure that digital transformation becomes an engine of sustainable development, quality of life, and true integration into the European Digital Single Market.

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