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DIGITRANS

**POLICIES FOR FOSTERING OF DIGITAL
TRANSFORMATION OF SMEs
STATE OF THE ART REPORT**

NORTH MACEDONIA

Project Partner no. 6

Business Confederation of North Macedonia



**BUSINESS CONFEDERATION
OF NORTH MACEDONIA**

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1. Regional Background Information

1.1. Introduction

North Macedonia, a landlocked country in Southeast Europe on the Balkan Peninsula, is an official candidate country for European Union (EU) membership, a status that profoundly shapes its national development agenda. This commitment is reflected in its National Development Strategy (NDS) 2024-2044 and other policy reforms, which are explicitly aligned with EU policies and integration efforts. The country actively participates in EU pre-accession assistance programs, such as IPA III, and various other EU initiatives aimed at fostering digital transition and regional development. Digitalisation is identified as a central element and a fundamental prerequisite for progress across all strategic areas outlined in the NDS 2024-2044¹, including economic competitiveness, sustainable local development, social inclusion, effective governance, and societal resilience.

Economic Significance: North Macedonia is categorized as an upper-middle-income economy. According to official data from the State Statistical Office, North Macedonia's gross domestic product (GDP) in 2023 amounted to 897.7 billion denars, which is approximately €14.6 billion, reflecting a nominal growth of 10.0% over 2022 and a real growth rate of 2.1%. This is the last officially confirmed annual figure. For 2024 and 2025, the data are estimates rather than final results. In 2024, quarterly estimates suggested that the economy expanded by about 3.2% year-on-year in the fourth quarter, while for 2025, the second-quarter estimate indicated continued momentum with 3.4% growth compared to the same quarter of the previous year. In euro terms, these estimates imply that GDP remains on a steady upward trajectory, with the economy hovering in the range of €15–16 billion, though the final annual figures will only be confirmed once the official accounts are published²³. The manufacturing sector forms the largest component of the economy, accounting for 30.4% of GDP in 2022, followed by wholesale and retail trade at 11.2% and construction at 8.6%⁴. Micro, small, and medium-sized enterprises (MSMEs) form the core of North Macedonia's economy, comprising 98.5% of all registered businesses and contributing 54.8% of total employment in 2023⁵. However, SME productivity, measured as value added per person employed, stood at only EUR 10,900 in 2019, approximately one-quarter of the

¹North Macedonia, *National Development Strategy 2024-2044* (Skopje: Government of North Macedonia, 2024), https://www.nrs.mk/content/NDS%206.11.2024_EN.pdf.

² State Statistical Office of the Republic of North Macedonia. Gross Domestic Product 2023, Preliminary Data. Skopje: State Statistical Office, 2024. <https://www.stat.gov.mk/PrikaziSooptenie.aspx?rbtxt=32>

³ State Statistical Office of the Republic of North Macedonia. Gross Domestic Product, Quarterly Data, Second Quarter 2025. Skopje: State Statistical Office, 2025. <https://www.stat.mk/en/stat/economy-and-finances/gross-domestic-product/gross-domestic-product-quarterly-data/gross-domestic-product-second-quarter-2025/>

⁴ State Statistical Office (Republic of North Macedonia). "Components of GDP by Sections and Divisions of NKD Rev. 2, by Years." MakStat Database. https://makstat.stat.gov.mk/PXWeb/pxweb/mk/MakStat/MakStat_BDP_BDPInvesGodisni_GodisniBDPsporedESS2010/375_NacSma_Mk_09p2a_01ml.px/table/tableViewLayout1/?rxid=46ee0f64-2992-4b45-a2d9-cb4e5f7ec5ef.

⁵ State Statistical Office of the Republic of North Macedonia. "Structural Business Statistics 2023" [https://www.stat.mk/mk/stat/%D0%B5%D0%BA%D0%BE%D0%BD%D0%BE%D0%BC%D0%B8%D1%98%D0%B0-%D0%B8-%D1%84%D0%B8%D0%BD%D0%B0%D0%BD%D1%81%D0%B8%D0%B8/struktumi-delovni-statistiki/struktumi-delovni-statistiki-2023-godina-definitivni-podatof/](https://www.stat.mk/mk/stat/%D0%B5%D0%BA%D0%BE%D0%BD%D0%BE%D0%BC%D0%B8%D1%98%D0%B0-%D0%B8-%D1%84%D0%B8%D0%BD%D0%B0%D0%BD%D1%81%D0%B8%D0%B8/struktumi-delovni-statistiki/struktumi-delovni-statistiki/struktumi-delovni-statistiki-2023-godina-definitivni-podatof/).

EU average of EUR 42,600⁶. The ICT sector in North Macedonia has sustained steady growth, with annual expansion rates between 2.5% and 8%, reaching a market value of approximately USD 1 billion in 2022. By 2024, the sector employed 23,948 people—an increase of 10.7% compared to the previous year—and generated €1.655 billion in operating revenues, reflecting a 12.5% year-on-year rise⁷.

Socio-Demographic Characteristics: According to the census from 2021, North Macedonia has a population of approximately 1.83 million people. The society is predominantly urban, with 62% of its population residing in urban areas, and exhibits a median age of 40.08 years⁸. These demographic characteristics, including a declining birth rate (fertility rate of 1.5 children per woman) and an increasing median age, are consistent with trends observed in many other European nations. The country faces a long tradition of emigration, with more than 500,000 citizens residing abroad (unofficially speculated), which is one of the largest diasporas globally as a share of the total population. This out-migration of the working-age population, coupled with an aging populace, presents a compelling case for accelerated digitalisation to enhance productivity per worker and sustain economic growth.

Role in National and European Contexts: North Macedonia's strategic orientation towards EU integration is clearly reflected in its National Development Strategy (NDS) 2024-2044, which identifies digitalisation as a central element for progress across all strategic areas. The Smart Specialisation Strategy (S3-MK) 2024-2027⁹ explicitly focuses on embedding knowledge, innovation, and technology across key economic sectors, designating Information and Communication Technologies (ICT) as a core priority domain. Legislative reforms, such as the Law on Electronic Communications¹⁰ and the pioneering Law on Safety of Networks and Information Systems (Cybersecurity Law)¹¹, directly mirror key EU directives like the NIS 2 Directive, the Electronic Communications Code, and the Gigabit Infrastructure Act. This alignment demonstrates a strategic understanding that digital maturity is crucial for meeting the acquis communautaire and facilitating EU accession.

1.2. Economic Profile of the Region

Include data on general economic profile of the region within the country, including differentiation on the SMEs and ICT sector (present state of using ICT / digital tools (digitalisation maturity level) within SMEs).

North Macedonia is categorized as an upper-middle-income economy. According to official data, North Macedonia's GDP in 2023 reached €14.6 billion, while estimates for 2024 and 2025 indicate

⁶ European Commission. *North Macedonia – 2021 SME Country Fact Sheet*. Brussels: Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, September 2021. https://enlargement.ec.europa.eu/system/files/2021-09/north_macedonia_-_sme_fact_sheet_2021.pdf.

⁷ MASIT – ICT Chamber of Commerce. “Comparative Analysis of ICT Sector Parameters in Macedonia 2024”. <https://masit.org.mk/wp-content/uploads/2025/06/komparativna-analiza-na-parametrite-vo-ikt-sektorot-vo-makedoni-a.pdf>.

⁸ State Statistical Office of the Republic of North Macedonia. *Census of Population, Households and Dwellings in the Republic of North Macedonia, 2021*. Skopje: State Statistical Office, 2022. <https://popis2021.stat.gov.mk/>

⁹ Ministry of Economy of the Republic of North Macedonia. *Draft Smart Specialisation Strategy of the Republic of North Macedonia (S3 – MK 2023–2027)*. Skopje: Ministry of Economy, November 2023. <https://mon.gov.mk/stored/document/Draft%20S3%20MK.pdf>

¹⁰ Agency for Electronic Communications of the Republic of North Macedonia. *Law on Electronic Communications*, March 2018. https://aek.mk/wp-content/uploads/2018/03/k2_attachments_2018_ZEK_Prechisten_tekst.pdf

¹¹ Agency for Electronic Communications of the Republic of North Macedonia. July 2025. *Law on the Security of Network and Information Systems* <https://aek.mk/zakon-za-bezbednost-na-mis/>.

steady growth of around 3.2% and 3.4%, with the latest projection placing GDP for 2025 at approximately €15–16 billion. The economy is anticipated to experience a growth rate of 3.2% in 2025¹². The manufacturing sector forms the largest component of the economy, accounting for 30.4% of GDP in 2022, followed by wholesale and retail trade at 11.2% and construction at 8.6%¹³.

In 2023, 68,004 enterprises engaged in market activities, generating 2,078,605 million denars of turnover and 445,041 million denars of value added¹⁴. Micro, small, and medium-sized enterprises (MSMEs) form the core of North Macedonia's economy, comprising 98.5% of all registered businesses and contributing 54.8% of total employment in 2023¹⁵. In the Skopje region, there were 28,531 businesses in 2023, out of which 88.4% micro(employing up to 10 people), 8.7% small(employing up to 50 people), and 2.3% medium sized enterprises(employing up to 250 people).¹⁶

The ICT sector in North Macedonia has sustained steady growth, with annual expansion rates between 2.5% and 8%, reaching a market value of approximately USD 1 billion in 2022. By 2024, the sector employed 23,948 people—an increase of 10.7% compared to the previous year—and generated €1.655 billion in operating revenues, reflecting a 12.5% year-on-year rise.

As of 2024, the percentage of enterprises with 10 or more employees that have internet access has increased significantly to 98.9%¹⁷. ICT usage among enterprises in North Macedonia was widespread across most sectors, with overall computer usage at 99.3% and internet access at 99.1%. Fixed broadband connections were the dominant form of internet access, reaching 97.2% of enterprises, while 91.9% reported contracted download speeds of at least 30 Mbit/s and 58.0% speeds of at least 100 Mbit/s. E-sales (via web or EDI) were most prevalent in the trade (23.5%) and accommodation/food services (29.3%) sectors, with web sales alone showing similar patterns. EDI-type sales were relatively rare, peaking in manufacturing (3.2%) and trade (3.7%). These figures indicate a mature stage of basic ICT adoption across sectors, though the intensity of digital commerce varies considerably by industry, with service-oriented sectors leading in online transactions.

¹² International Monetary Fund. "North Macedonia." IMF. <https://www.imf.org/en/Countries/MKD>.

¹³ State Statistical Office (Republic of North Macedonia). "Components of GDP by Sections and Divisions of NKD Rev. 2, by Years." MakStat Database.

https://makstat.stat.gov.mk/PXWeb/pxweb/mk/MakStat/MakStat_BDP_BDPInvesGodisni_GodisniBDPsporedESS2010/375_NacSma_Mk_09p2a_01ml.px/table/tableViewLayout1/?rxid=46ee0f64-2992-4b45-a2d9-cb4e5f7ec5ef.

¹⁴ State Statistical Office of the Republic of North Macedonia. "Structural Business Statistics, 2023, Final Data." Skopje: State Statistical Office, June 18, 2025. <https://www.stat.mk/en/stat/economy-and-finances/structural-business-statistics/structural-business-statistics/structural-business-statistics-2023-final-data/>

¹⁵ State Statistical Office of the Republic of North Macedonia. "Structural Business Statistics 2023" [https://www.stat.mk/mk/stat/%D0%B5%D0%BA%D0%BE%D0%BD%D0%BE%D0%BC%D0%B8%D1%98%D0%B0-%D0%B8-%D1%84%D0%B8%D0%BD%D0%B0%D0%BD%D1%81%D0%B8%D0%B8/struktumi-delovni-statistiki/struktumi-delovni-statistiki-2023-godina-definitivni-podatofi/](https://www.stat.mk/mk/stat/%D0%B5%D0%BA%D0%BE%D0%BD%D0%BE%D0%BC%D0%B8%D1%98%D0%B0-%D0%B8-%D1%84%D0%B8%D0%BD%D0%B0%D0%BD%D1%81%D0%B8%D0%B8/struktumi-delovni-statistiki/struktumi-delovni-statistiki/struktumi-delovni-statistiki-2023-godina-definitivni-podatofi/).

¹⁶ State Statistical Office of the Republic of North Macedonia. Number of Active Business Entities by Region, Activity, and Size (by Number of Employees), MakStat PX-Web database. https://makstat.stat.gov.mk/PXWeb/pxweb/mk/MakStat/MakStat_DelovniSubj_AktDelovniSubjekti/400_Delovni_Reg_Ops_Golemina_Vrabo_teni_ml.px/table/tableViewLayout2/.

¹⁷ State Statistical Office of the Republic of North Macedonia. *Usage of Information and Communication Technologies in Enterprises, 2024*. Skopje: State Statistical Office, October 2, 2024. https://www.stat.gov.mk/PrikaziSooptenie_en.aspx?rbtxt=76.

1.3. HR Profile of the Region

Report on the educational attainment levels, higher education rates, digital skills gained and lifelong learning within the region (with differentiation on entrepreneurship and ICT sectors).

Higher education in North Macedonia is characterized by a significant number of students pursuing tertiary education, though recent data indicates a slight decline in enrollment. For the 2023/2024 academic year, there were 52,316 students enrolled in the first cycle of studies, a 2.8% decrease from the previous year. Despite this, the gross tertiary education enrollment rate was 53.16% as of 2022, a notable increase from prior years. A significant trend is the higher enrollment of women, who make up 58.7% of the student body. The vast majority of students, around 77.9%, choose to attend state-funded higher education institutions over private ones. These enrollment trends occur within a broader context of a shrinking school-age population and "brain drain," where many young, educated people emigrate for better opportunities abroad, posing a long-term challenge to the country's skilled workforce.¹⁸

Among young adults, tertiary attainment remains below the EU average but rising: in 2022, 37.7% of North Macedonians aged 25–34 had completed tertiary education.¹⁹ Results from the Adult Education Survey 2022 show robust participation in learning: 27.7% of people aged 18–69 took part in formal or non-formal education and training, rising to 37.2% among those 25–34. Learning was mainly non-formal (71.8%), especially on-the-job training (48.7%) and courses (37.8%).²⁰

Digital literacy rates in North Macedonia consistently remain below the EU average. While urban areas have shown some improvement, rural communities and marginalized groups face significant barriers in accessing digital education programs. Only 32% of North Macedonia's population possesses basic digital skills, despite approximately 80% having internet access. This highlights a critical "skill-access paradox"²¹.

A significant impediment for Macedonian SMEs is the pronounced lack of digital skills among their employees, particularly the ability to effectively use online tools and digital platforms. Micro-businesses, in particular, exhibit low levels of digital skills, often limited to very basic competencies.

Recent analyses point to a misalignment between the education system and the needs of the ICT industry. While there is a high demand for programmers, software engineers, and AI specialists, the supply of graduates with the right skills is insufficient. This issue is compounded by low wages and a perception of limited opportunities, which further encourage emigration.²²

¹⁸ State Statistical Office of the Republic of North Macedonia. "Enrolled Students at Higher Vocational Schools and Faculties in the Republic of North Macedonia for the 2023/2024 Academic Year (First Cycle of Studies)." Skopje: State Statistical Office, July 3, 2024. Accessed August 8, 2025. <https://www.stat.gov.mk/PrikaziSoopstanie.aspx?rbtxt=29>.

¹⁹ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Tertiary_education_statistics

²⁰ https://www.stat.gov.mk/pdf/2023/2.1.23.31_mk.pdf

²¹ Zekiri, Ardita, and Darinka Vasquez. "North Macedonia Sets a Benchmark for Digital Readiness in the Region." *UNDP North Macedonia Blog*, August 14, 2024. <https://www.undp.org/north-macedonia/blog/north-macedonia-sets-benchmark-digital-readiness-region>.

²² Ss. Cyril and Methodius University in Skopje, Istanbul University, Van Yüzüncü Yıl University, Yozgat Bozok University, Adama Science and Technology University, Bule Hora University, National University of Life and Environmental Sciences of Ukraine, National Aviation University, and Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University. "Comparative Analysis of Skill Shortages, Skill Mismatches, and the Threats of Migration in Labor Markets: A Sectoral Approach in North Macedonia, Türkiye, Ethiopia, and Ukraine." *Social Sciences* 14, no. 5 (2025): 294. <https://doi.org/10.3390/socsci14050294>.

The National ICT Strategy 2023-2027²³ specifically focuses on aligning education curricula with the evolving needs of the industry. Initiatives like the Education Management Information System (EMIS) project have improved data management and analysis within the education sector.²⁴ Vocational education and training (VET) participation rose from 64% (2022/23) to 67.3% (2023/24), with graduates achieving higher employment rates than general education peers. Two new regional VET centers were established, enhancing collaboration with businesses to offer training aligned with labor market needs. Dual education has expanded, with more companies offering placements, and 84% of VET schools participated, with one in three VET students enrolled in dual VET.²⁵

1.4. Socioeconomic Conditions and Employment Opportunities

Analyse trends in job availability (per industry or job function), salary levels (rate of ICT experts), and how they compare to other regions/countries.

North Macedonia's labor market has strengthened, with the employment rate reaching 45.8% in 2024²⁶, though it remains well below the EU-27 average of 75.8%²⁷. The total unemployment rate dropped to 12.4% in 2024. Furthermore, the unemployment rate of people with university level education dropped by 15.4% in comparison to the year before. The youth unemployment rate (15-24) remains high at 29%. The overall labor force was 792,779 in 2024, with 688,296 employed. In 2024, the wholesale and retail trade sector employed the largest share of the workforce in North Macedonia, accounting for approximately 14.8% of total employment, while the information and communication (ICT) sector represented about 3.3%.

In January 2025, the average monthly net wage in North Macedonia was 43,050 denars. In 2024/2025, the average net monthly wage in North Macedonia was approximately €730, compared to €923 in Bulgaria, €1,318 in Croatia, and €1,225 in Greece. The highest sectoral wage was in Information and Communication at around 78,000 denars (approx. 1300€), while the lowest was in Accommodation and Food Service Activities at roughly 27,000 denars (approx. 450€)²⁸. The ICT sector's wage level is therefore the top among all sectors, significantly exceeding both the national average and other high-paying sectors.

In the fourth quarter of 2024, North Macedonia recorded a job vacancy rate of 1.93%, below the euro area average of 2.4%. In North Macedonia, the accommodation and food service activities sector posted the highest job vacancy rate at 3.47% (662 vacancies out of 18,410 occupied posts), slightly above the rates recorded in the euro area (3.4%) and the EU (3.3%). By contrast,

²³ Government of the Republic of North Macedonia. *National ICT Strategy 2023–2027 (Draft)*. Skopje: Ministry of Information Society and Administration, 2023. <https://mon.gov.mk/stored/document/Draft%20S3%20MK.pdf>.

²⁴ European Commission, "North Macedonia Report 2024," Directorate-General for Neighbourhood and Enlargement Negotiations, Brussels, 30 October 2024, PDF. https://enlargement.ec.europa.eu/document/download/5f0c9185-ce46-46fc-bf44-82318ab47e88_en?filename=North+Macedonia+Report+2024.pdf

²⁵ European Training Foundation. *North Macedonia: VET System and Employment Outcomes*. Turin: ETF, 2023. <https://www.etf.europa.eu>.

²⁶ State Statistical Office of the Republic of North Macedonia. *Labour Market News Release No. 2.1.25.04: Active Population in the Republic of North Macedonia, 2024*. Skopje: State Statistical Office, March 14, 2024. PDF. https://www.stat.gov.mk/pdf/2025/2.1.25.04_mk.pdf.

²⁷ Eurostat. "EU's Employment Rate Reached Almost 76 % in 2024." *Eurostat News*, April 15, 2025. <https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20250415-1>.

²⁸ State Statistical Office of the Republic of North Macedonia. *Average Monthly Net Wage Paid per Employee, January 2025 (Release No. 4.1.25.27)*. Skopje: State Statistical Office, February 2025. https://www.stat.gov.mk/pdf/2025/4.1.25.27_mk.pdf.

the information and communication (ICT) sector registered a vacancy rate of 1.71% (359 vacancies out of 20,646 occupied posts), well below the corresponding figures for the euro area (2.7%) and the EU (2.5%), suggesting comparatively stronger demand pressures in hospitality and more moderate demand in ICT.²⁹³⁰

2. Analysis and Assessment of Policy Instruments

2.1. Policy Instruments

Describe the specific policy instrument(s) being addressed. Explain its goals, measures and results/outputs for enhancing the digitalisation of SMEs in the region (please, use the table “Overview of Policy instrument”, where relevant, include the data about sources of funding, no. of SMEs applying, no. of supported SMEs, funds distribution within the region, etc.).

2.1.1. Institutional Background

Small and medium-sized enterprises (SMEs) are widely recognized as the dominant and essential factor in North Macedonia's economy. Despite their importance, many of these businesses are not prepared for the comprehensive changes required for digital transformation. This challenge is acknowledged and addressed at the highest levels of national policy. The National Development Strategy (NDS) 2024–2044³¹ identifies a "Sustainable, Innovative and Competitive Economy" as a key strategic area, with digitalization serving as a central element and a fundamental prerequisite for progress across all sectors. This strategic alignment elevates digitalization from a mere technical issue to a core national priority tied to long-term economic prosperity and stability.

North Macedonia's government has recognized SME digitalization as a priority for competitiveness. The National Strategy for Small and Medium Enterprises (2018–2023) established a collaborative framework for public, private, and civil society support to SME development, with “dynamic entrepreneurship and the innovation ecosystem” as one of its three pillars. To implement SME policy, the Agency for Promotion of Entrepreneurship (APPRSM) was set up as a state institution in 2013. APPRSM oversees various initiatives providing innovation grants and even low-interest finance to encourage technological investments by SMEs. These efforts have coincided with a notable rise in SME innovativeness – the number of innovative SMEs in North Macedonia grew by 53% between 2014 and 2020³², indicating progress in digital transformation and capacity-building.

²⁹ State Statistical Office of the Republic of North Macedonia. *Job Vacancies, Fourth Quarter of 2024* (Release No. 2.1.25.02). Skopje: State Statistical Office, February 2025. https://www.stat.gov.mk/pdf/2025/2.1.25.02_mk.pdf.

³⁰ Eurostat. “Job Vacancy Statistics.” *Eurostat Statistics Explained*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Job_vacancy_statistics.

³¹ https://www.nrs.mk/content/NDS%206.11.2024_EN.pdf

³² https://www.itu.int/dms_pub/itu-d/opb/inno/D-INNO-PROFILE.NORTHMACEDONIA-2023-PDF-E.pdf#:~:text=regulatory%20changes%20involving%20SMEs,established

Despite the existence of the Ministry of Economy's annual Programme for the Development of Entrepreneurship and Competitiveness of Small and Medium-Sized Enterprises, North Macedonia currently does not have an active SME strategy. The previous Strategy for the Development of Small and Medium-Sized Enterprises 2018–2023 has expired, while the forthcoming National SME Strategy 2025–2030 remains in draft form and is still awaiting official adoption. According to the draft National SME Strategy 2025–2030 (prepared in late 2024 but not yet adopted), the new framework places strong emphasis on digital transformation rather than only basic digitalization. The draft defines a dedicated priority area on the green and digital transition, and introduces several specific objectives that directly address SME digital upgrading. These include: establishing a regulatory framework to support digital transformation, promoting digital banking and e-commerce solutions, scaling-up programs to help SMEs integrate advanced technologies (AI, IoT, cloud), and continuing the digitalization of public services relevant to SMEs. Unlike the previous 2018–2023 strategy, which only indirectly touched upon digitalization within innovation and competitiveness, the new draft explicitly frames digital transformation as a central driver of SME competitiveness and market access. This shift indicates a more comprehensive approach, moving beyond e-services and basic ICT uptake toward structural integration of digital technologies into business models and value chains.

On the other hand, The Fund for Innovation and Technological Development (FITD) was created in 2013 as a state institution to drive innovation, strengthen competitiveness, and promote the digital transformation of SMEs in North Macedonia. Throughout its operation, FITD became the key public instrument for supporting startups, small and medium-sized enterprises, and research actors by offering grants, co-financing schemes, and collaborative programs that enabled businesses to develop new products, services, and technologies while building stronger innovation capacity. In 2025, the Government decided to rationalize and unify the institutional support for SMEs and innovation by merging FITD with the Agency for Entrepreneurship Promotion, resulting in the establishment of the Agency for Innovation, Scientific-Technological Development and Entrepreneurship. This newly formed body is intended to pool resources, streamline efforts, and provide a more comprehensive and coordinated framework for advancing entrepreneurship, innovation, and technological progress in the country.

Furthermore, the former Ministry of Information Society and Administration was transformed into the Ministry for Digital Transformation in June 2024. In June 2025, this new ministry launched the ICT Development Strategy: SMART/MK 2030 strategy³³, a key document shaping the country's digital future. Through the strategy, the Government of North Macedonia positions SMEs as a central engine of the digital economy and broader socio-economic development. The document provides a detailed roadmap for overcoming structural challenges in digital transformation and ICT, aiming to secure accelerated digital progress across all sectors while fostering a favorable environment for innovation and competitiveness. Recognizing that SMEs are both the backbone of the economy and key drivers of digital uptake, the strategy introduces targeted instruments—such as vouchers, training, mentorship, financial incentives, and digital support platforms—to

³³ Ministry for Digital Transformation of the Republic of North Macedonia. ICT Development Strategy: SMART/MK 2030 Strategy. Skopje: Government of the Republic of North Macedonia, 2025 - <https://mdt.gov.mk/en-GB/regulativa/strategija-za-razvoj-na-ikt-smart-mk-2030>

modernize business operations, stimulate innovation, and build a sustainable digital ecosystem aligned with European standards and global trends

The drive for digitalization is deeply intertwined with North Macedonia's ongoing EU accession process. Policy instruments are explicitly designed to align with European frameworks and standards, such as the NIS 2 Directive³⁴ and the Digital Services Act³⁵. The country is also a participant in the EU's Digital Europe Programme since 2023, which provides access to funding calls and enables the establishment of Digital Innovation Hubs, bringing the country's technological capabilities closer to the EU economy. This dual motivation—driven by both domestic economic needs and external EU integration requirements—shapes a policy framework that is more durable and less susceptible to political shifts. The success of these initiatives is therefore measured not only by internal economic metrics but also by the degree of convergence with EU norms, a unique form of dual accountability that characterizes the policy landscape of accession countries.

2.1.2. Program for Development of Entrepreneurship and Competitiveness of Small and Medium-Sized Enterprises

The Programme for the Development of Entrepreneurship and Competitiveness of Small and Medium-Sized Enterprises is an **annual policy instrument of the Ministry of Economy** that defines the government's priorities, measures, and budgetary allocations in support of the SME sector. Published each year in the Official Gazette and **operationalised through public calls and co-financing schemes**, the programme serves as a practical framework for enhancing entrepreneurship, strengthening competitiveness, and aligning national SME policies with broader European trends.

This programme by the Ministry of Economy has undergone a gradual but significant transformation over the past decade. Initially framed under the title *Programme for Competitiveness, Innovation and Entrepreneurship (KIP)*, the policy instrument largely emphasized broad measures of market competitiveness, innovation capacity, and general entrepreneurial support. Digitalisation, when present, was embedded indirectly within competitiveness or innovation-related initiatives, often without an explicit reference to digital transformation as a policy priority in its own right.

From 2022 onwards, the programme was restructured and renamed as the *Programme for the Development of Entrepreneurship and Competitiveness of Small and Medium-Sized Enterprises*. This change of title was more than symbolic: it reflected a deliberate policy decision to place small and medium-sized enterprises (SMEs) at the centre of economic programming and to acknowledge their dual role as both beneficiaries and drivers of competitiveness. The programme thus evolved from a broad competitiveness framework into a more SME-focused

³⁴ <https://digital-strategy.ec.europa.eu/en/policies/nis2-directive>

³⁵ https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/digital-services-act_en

annual instrument, aligning with European Union practices and with the national policy commitment to strengthening the SME sector as the backbone of the economy.

Over the past eight years, the programme's budget has moved through clear phases. It began at about €0.2 million in 2017, grew quickly to just under €0.9 million by 2019, eased to around €0.8 million in 2020, and then rose to roughly €1.1 million in 2021. Funding stayed close to €1.0 million in 2022 and 2023, reached about €1.3 million in 2024, and then fell sharply to around €0.3 million in 2025. Overall, the trend shows a period of growth and stability followed by a marked reduction in the most recent year.³⁶

Table 1: Subsidies for SME digital transformation

Instrument name	Subsidies for SME digital transformation
Duration	Ongoing – as of August 2025 call has not been launched.
Description of goals	<p>The subject of measure 1 is subsidizing micro, small and medium-sized enterprises, which employ at least two people through co-financing of 40% of the proven costs, but not more than 150,000 denars(≈2500EUR) in total per applicant, made for the following purposes:</p> <ul style="list-style-type: none"> - Development or procurement of digital solutions and technologies for the purpose of digital transformation of business processes or production and/or - Implementation, adaptation and integration of digital solutions and technologies
Relevance to national and regional strategies	Directly advances national priorities for SME competitiveness and digital upgrading set out in current policy frameworks (e.g., the forthcoming National SME Strategy 2025–2030 and the Smart Specialisation Strategy), as well as ICT Development Strategy: SMART/MK 2030 Strategy and supports alignment with EU objectives on enterprise digitalisation and single-market readiness. Regionally, it complements Western Balkans efforts to build a common, innovation-friendly market and connects with Digital Europe/EDIH services available to SMEs, helping firms adopt concrete digital tools, raise productivity, meet quality and compliance standards, and improve their prospects for export and integration into European value chains.
Enhancing digitalisation of SMEs	Boosts SME digitalisation by co-financing 40% of costs (up to 150,000 MKD≈2.500EUR) for acquiring or developing digital tools and for their implementation/integration. This lowers entry costs and ensures real deployment across workflows (e.g., ERP/CRM, e-commerce,

³⁶ Ministry of Economy (Republic of North Macedonia), "Sectoral Programs," <https://www.economy.gov.mk/nk-MK/sektor-programi.nsp.x>

	production IT/OT, cybersecurity). The cap and co-financing model widen uptake while keeping projects targeted and sustainable.
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Despite a substantial 76% reduction in the programme's budget in 2025 compared with 2024, the 2025 edition for the first time treats digital transformation and digitalisation as a standalone priority, defining eligible actions as the “development or procurement of digital solutions and technologies for the digital transformation of business processes or production and/or the implementation, adaptation and integration of digital solutions and technologies.” By contrast, the 2024 programme—although much larger—addressed this area only partially, through support for opening online shops for women and, indirectly, through co-financing projects by foundations and associations that provided non-financial support to entrepreneurship and the competitiveness of SMEs. Even though the total allocation was reduced in 2025, yet the programme explicitly ring-fenced digitalisation so that approximately 29.8% of the entire envelope is now directly traceable to digital-transformation support for MSMEs. This is somewhat a progress since looking across the past eight years, references to digitalisation were uneven: in 2017 it was absent; in 2018 it appeared mainly through the lens of digital marketing; in 2019–2021 the focus shifted to introducing software solutions; and in 2023 the focus was the development/procurement or implementation, adaptation and integration of digital solutions and technologies among women entrepreneurs. More often, however, the programmes prioritised general investment in machinery and equipment and broader innovation measures—suggesting an emphasis on innovation and capital upgrades rather than targeted, end-to-end digital transformation.

2.1.3. Innovation and Digitalization Support Programs by the Fund for Innovation and Technology Development

One of the flagship instruments was the **Fund for Innovation and Technology Development (FITD)**, which serves as the government's main vehicle for boosting SME innovation and digital transformation. The Fund for Innovation and Technological Development (FITD) is the primary domestic institution for innovation, established with support from the World Bank. Its fundamental role is to provide seed financing and technical assistance to startups and SMEs at the early stages of development, helping them demonstrate their viability and attract private investors.

Through FITD, multiple grant schemes have been launched to spur technology adoption, product innovation, and startup growth:

- Startup/Spin-off Grants: Cover up to 85% of project costs (max €30,000) to develop new products/services (often digital or tech-based).
- Commercialization Grants: Co-fund bringing innovations to market (coverage and caps vary by firm size).
- Technological Extension Grants: Cover 50% of project costs (up to €500,000) to help established SMEs adopt advanced technologies and processes, improving their efficiency and competitiveness. This directly supports digitalization in manufacturing and operations.

- Business Accelerator Support: Funds up to 75% (max €500,000) to create accelerators that provide startups with space, mentorship, and investment opportunities

2.1.3.1. Western Balkans Innovation Vouchers

The **Western Balkans Innovation Vouchers** scheme was launched in April 2024 under the **POLICY ANSWERS project**, financed through Horizon Europe. It was conceived as a pilot instrument to address a long-standing weakness in the region: the limited cooperation between **small and medium-sized enterprises (SMEs)** and **public research institutions**. The measure provided small-scale financial support in the form of vouchers, designed to reduce the cost barrier for SMEs to access research services, and to encourage practical industry–academia collaboration.

The instrument targeted SMEs legally registered in one of the Western Balkan economies. Eligible applicants could receive a voucher of up to **€8,000 (excluding VAT)**, covering **80% of the service costs**, while the enterprise itself had to contribute the remaining **20%**. A central requirement was that the SME and the research provider had to be from **different Western Balkan economies**, thereby adding a regional integration dimension. This cross-border element distinguished the programme from similar voucher schemes in EU member states, which are often national in scope.

The programme supported activities such as feasibility studies, prototype development, technology validation, or proof-of-concept work. These services had to be delivered by accredited public research institutions, higher education institutions, or other eligible R&D organisations. By focusing on early-stage innovation services, the vouchers acted as a stimulus for SMEs that might not otherwise have engaged with research providers.

The total available budget amounted to **€240,000**, which made the measure relatively small compared to other EU or international funding facilities. Applications were open from **April to November 2024**, though some communications also cited **June 2024** as a closing date, suggesting phased deadlines. After administrative checks, proposals were evaluated according to four criteria: relevance to the call's objectives, level of innovation, quality of the proposal, and potential contribution to the green or digital transition. Only the highest-ranked proposal per SME was financed, and successful projects were expected to complete activities within nine months of contract signing, with the possibility of a short extension.

Although limited in scope and funding, the Innovation Vouchers scheme served several policy purposes. It introduced a **light, low-barrier mechanism** for SMEs to experiment with research collaboration, often a first step towards more ambitious R&D projects. It also reinforced **regional cooperation** in line with EU integration priorities by requiring cross-border partnerships. Finally, it supported alignment with **smart specialisation strategies** and EU objectives on green and digital transitions.

Placed within the broader landscape of policy instruments in the Western Balkans, this measure complemented larger-scale schemes such as loans or blended finance from the **EBRD** or investment support through the **Western Balkans Investment Framework (WBIF)**. While those instruments aim to mobilize substantial resources for infrastructure or digitalisation, the voucher scheme targeted **micro-level interventions**. It provided practical, immediate support to SMEs and researchers to test ideas and build cooperation that could later feed into larger projects.

Table 2: Western Balkans Innovation Vouchers (A POLICY ANSWERS Pilot Programme)³⁷

Instrument name	Western Balkans Innovation Vouchers (WBIV)
Duration	Ongoing (Pilot Call in 2024) – Call launched Oct 2024 by FITD, with projects to be implemented 2024–2025.
Description of goals	This regional pilot programme aims to boost innovation and digital transformation in SMEs by fostering collaboration between small businesses and research institutions. Implemented under the EU-funded Policy ANSWERS project, its goal is to help SMEs access R&D expertise and innovative technologies (e.g. in digitalization or product development) from universities or labs. By using “innovation vouchers,” the instrument encourages SMEs to pursue research-based solutions and cross-border knowledge exchange in the Western Balkans, seeding longer-term partnerships and innovation capacity in the SME sector.
Relevance to national and regional strategies	Aligns with North Macedonia’s innovation strategy and Smart Specialisation priorities by addressing SME innovation gaps and promoting industry–science links. Regionally, it supports the Common Regional Market agenda for the Western Balkans by enabling cross-border cooperation in research and innovation. The design draws on EU best practices in innovation voucher schemes, helping integrate Western Balkan SMEs into European innovation networks. It also complements EU integration goals by preparing local SMEs to participate in Horizon Europe and to upgrade technologically in line with EU market standards.
Enhancing digitalisation of SMEs	The innovation vouchers can be used by SMEs to acquire R&D services that often include digital innovation – for example, developing a new digital product prototype, improving a production process through automation, or accessing expertise in ICT solutions. By subsidizing collaboration with research providers, the scheme lowers the risk and cost for SMEs to experiment with new digital technologies or data-driven improvements. It effectively creates a mechanism for even small firms to test and adopt advanced digital innovations (such as in agrotech, manufacturing, ICT, etc.) with guidance from scientists and engineers, thus embedding digital transformation in traditional industries.

2.1.3.2. Challenge: “With Digital Transformation to Innovation”

³⁷ “FITD Receives Leading Role in the New European Project ‘POLICY ANSWERS.’” Fund for Innovation and Technological Development (FITD), North Macedonia. <https://fitr.mk/en/fitd-receives-leading-role-in-the-new-european-project-policy-answers/>

The **Fund for Innovation and Technological Development (FITR)**, in cooperation with Switzerland’s **Increasing Market Employability (IME) Programme** and the **INOFEIT Digital Innovation Hub (DIH)** network, launched the programme **“With Digital Transformation to Innovation”** to accelerate digital adoption among SMEs in the agriculture-food and tourism sectors. The call was designed as a response to persistent barriers to digitalisation, including limited financial resources, reluctance to invest in unfamiliar technologies, and the broader economic disruptions generated by the COVID-19 pandemic, the energy crisis, inflationary pressures, and supply chain volatility.

The programme combined **direct financial support to enterprises** with **ecosystem development measures** aimed at strengthening digital innovation hubs. These hubs were expected to provide diagnostic services, guidance on technology adoption, and ongoing support for digital transformation, thereby creating a more sustainable innovation infrastructure for SMEs in lagging sectors.

The total programme budget amounted to **approximately 18.45 million MKD (around €300,000)**, of which **about €200,000 was provided by FITR** and the remainder by Switzerland through IME. Funding support was calibrated according to enterprise size. **Micro and small enterprises** were eligible for grants covering up to **70% of eligible costs**, while **medium-sized enterprises** could receive up to **50%**, in both cases capped at **1.845 million MKD (roughly €29,900)** per project. In addition, each selected SME was required to organise at least one **free training session for young people aged 15–25**, ensuring broader knowledge transfer and community benefit.

Altogether, **13 SMEs were supported** through this programme. The projects implemented focused on the **development, introduction, and maintenance of digital solutions** that enabled new or improved products, services, and processes. The scope of digitalisation measures was broad, ranging from artificial intelligence, virtual reality, and robotics to automation, Internet of Things (IoT) applications, and advanced web-based platforms.

The expected outcomes of the programme went beyond individual enterprise benefits. By supporting digitalisation, the initiative aimed to **increase competitiveness and productivity**, optimise production processes, reduce costs, improve procurement and supply chain management, and foster job creation in two critical sectors of the Macedonian economy. At the same time, it sought to enhance the overall **innovativeness of SMEs**, laying the groundwork for more resilient and future-ready businesses.

Table 3: Challenge: With Digital Transformation to Innovation³⁸

Instrument name	Challenge: With Digital Transformation to Innovation
Duration	The call for proposals closed in March 2023, with funded projects having a duration of up to 18 months.
Description of goals	The primary goal was to enhance the innovativeness, competitiveness, and productivity of Micro, Small, and Medium-sized Enterprises (MSMEs) operating in the agricultural-food and tourism sectors. This is

³⁸ “With Digital Transformation to Innovation.” *Fund for Innovation and Technological Development (FITD)*, North Macedonia. Published 2024 <https://fitr.mk/digitalna-transformacija/>.

	<p>achieved through the introduction of digital solutions that facilitate digital transformation within their operations. The instrument also aims to strengthen the capacities of digital innovation hubs, which are crucial components of the broader digital transformation ecosystem.</p>
<p>Relevance to national and regional strategies</p>	<p>This instrument directly aligns with national efforts to promote digital transformation and innovation, particularly within key economic sectors identified for growth. Furthermore, it is linked to the National Strategy for SMEs (in draft phase) and the ICT Development Strategy: SMART/MK 2030 Strategy by the Ministry for Digital Transformation. It is also closely linked with the broader objectives of the Swiss-funded Increasing Market Employability (IME) Programme, which focuses on job creation and income growth in the Sustainable Agribusiness and Sustainable Tourism sectors. The IME program explicitly integrates digitalization and green transformation as transversal functions to help SMEs introduce new products and services, access new markets, and improve working conditions.</p>
<p>Enhancing digitalisation of SMEs</p>	<p>The instrument supports the development, implementation, and maintenance of digital solutions that drive digital transformation, leading to innovative products, processes, and services for participating companies. These digital solutions can encompass various advanced technologies, including artificial intelligence, virtual reality, automation, robotics, the Internet of Things, and web-based solutions, with other digital transformation solutions not being excluded. Through this support, companies were expected to digitize processes and services for improved planning and data-driven business decisions, accelerate the introduction of innovative offerings, optimize production for increased economies of scale, reduce production costs, enhance raw material procurement and supply chain efficiency, and create new job opportunities.</p>

2.1.3.3. Skills Development and Innovation Support Project

The **Skills Development and Innovation Support Project**, financed with a **€17.7 million** loan from the **World Bank**, was implemented in North Macedonia through the Ministry of Education and Science. It had three overarching aims: improve transparency in higher education resource allocation, modernize secondary technical and vocational training, and—most relevant here—strengthen enterprise innovation and collaboration with research institutions.

The Fund for Innovation and Technological Development (FITD) was responsible for the third component—targeting innovation capacity building among enterprises and fostering linkages with research providers. Of the overall loan, approximately **€9.16 million** was assigned to this effort.

Within this component, two parallel strategies unfolded. First, FITD itself underwent institutional strengthening: it enhanced planning, strategy design, internal procedures, staff capacity, and communication efforts, and established an investment-selection committee with trained reviewers.

Second, the project deployed four **co-financed financial instruments** to support the private sector directly:

1. Grants for newly established start-ups and spin-offs.
2. Grants for commercialization of innovations.
3. Grants for establishing, operating, and investing in business-technological accelerators.
4. Grants for technological extension activities—helping firms develop or adopt new or improved products, processes, or technologies.

These instruments offered SMEs and start-ups a structured path—from early-stage innovation proof of concept, through development support, to acceleration and technology uptake.

The project formally concluded around **April–June 2021**. Afterward, these support instruments were retained as part of FITD’s toolkit and continued to be financed from the Fund’s own budget

Table 4 Skills Development and Innovation Support Project ³⁹

Instrument name	Fund for Innovation and Technology Development (FITD) Grants: Boosting Innovation and Competitiveness for Start-ups and MSMEs
Duration	The open calls were conducted between 2019 and 2024, with funded projects running for up to two years following the award of funding.
Description of goals	To boost innovation and competitiveness among SMEs and start-ups in North Macedonia. Promotes risk-taking, new product development, and adoption of advanced technologies to enhance productivity and bridge the gap between local and global industries. Aims to improve access to financial support for innovation and technological development and promote innovation activity.
Relevance to national and regional strategies	Aligns with the National Development Strategy (NDS) 2024-2044's vision of an economy based on knowledge, innovation, and digitalization, and the Smart Specialisation Strategy (S3-MK) which designates ICT as a core priority. Directly supports the objectives of the Smart Specialisation Strategy (S3-MK) by fostering innovation and knowledge-based transformation, particularly in priority domains like ICT. Aligns with national efforts to develop a vibrant digital economy and address talent scarcity.

³⁹ Program for support through the "Skills Development and Innovation Support Project" financed through a loan from the World Bank - *Fund for Innovation and Technological Development*. Website. <https://fitr.mk/en/program-for-support-through-the-skills-development-and-innovation-support-project-financed-through-a-loan-from-the-world-bank/> .

Enhancing digitalisation of SMEs	<p>Offers various grants (Start-up/Spin-off, Commercialization, Technological Extension, Business-Technological Accelerator) that directly support R&D, technology adoption, and the establishment of innovation ecosystems, thereby enhancing SME digitalisation.</p> <p>Offers four types of grants:</p> <ul style="list-style-type: none"> • Start-up and spin-off grants: Cover up to 85% of project budget, max €30,000, supporting R&D for new products and services. • Commercialization grants: Help businesses bring innovations to market, with funding based on company size. • Technological extension grants: 50% project costs, up to €500,000, helping SMEs adopt innovative technologies and advanced processes. • Business-technological accelerator grants: Finance up to 75% of budget, max €500,000, to establish accelerators providing office space, mentorship, consulting, and investment opportunities for startups. <p>Additional support: Provides loans for Amazon Web Services (AWS) platform use (\$10k, \$25k, \$100k). Supports the development of a National Strategy for Artificial Intelligence.</p>
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2.1.4. Loan Instruments for Digital Transformation of SMEs

Ensuring access to finance is one of the most pressing challenges for small and medium-sized enterprises, especially when they need to invest in new technologies and digital transformation. Traditional financing channels often come with high costs, collateral requirements, or limited risk appetite from commercial banks, making it difficult for SMEs to secure resources for digital investments. To bridge this gap, dedicated loan products have been introduced at both the international and national level, designed to reduce financial barriers and encourage adoption of advanced technologies.

These instruments combine favorable credit conditions with complementary measures such as technical assistance, advisory support, or performance-based incentives. By doing so, they not only ease the initial financial burden but also ensure that SMEs receive guidance in implementing effective digital solutions. International partners like the European Bank for Reconstruction and Development (EBRD), in collaboration with the European Union, provide regional programmes that align with broader EU integration and competitiveness agendas. At the same time, national mechanisms, such as specialized credit lines introduced by the Development Bank of North Macedonia, target specific SME needs ranging from the purchase of smart machinery and IoT devices to financing software, cloud services, or digital marketing activities.

Together, these initiatives illustrate a policy shift towards blended finance solutions that couple loans with knowledge transfer and incentives, creating a more enabling environment for SMEs to accelerate their digital transformation, improve productivity, and strengthen their resilience in line with national and regional strategic priorities.

2.1.4.1. GoDigital in Western Balkans

The **Go Digital in the Western Balkans** programme, launched by the European Bank for Reconstruction and Development (EBRD) with strong EU backing, represents a major regional initiative aimed at accelerating SME digitalisation. North Macedonia was the first country where the programme became operational, underscoring its importance for the country's economic and digital transformation. The initiative provides **dedicated credit lines to SMEs** for investments in digital and automation technologies, blending affordable loans with **EU-funded technical assistance and performance-based incentives** through the Western Balkans Investment Framework (WBIF). This combined approach is intended to ease financial barriers, reduce upfront costs, and build capacity among SMEs for successfully adopting advanced digital solutions.

For North Macedonia, the programme is strategically aligned with national priorities for competitiveness and EU accession. It addresses structural weaknesses in SME financing by offering accessible instruments that directly support the uptake of new technologies and digital tools. Beyond enhancing productivity, the initiative integrates broader policy goals: **at least 50% of financed projects must involve green technologies**, while **30% of investments are directed to businesses outside Skopje**, thereby encouraging both sustainability and balanced regional development. Inclusivity is also a core component, with specific measures ensuring that **women-led SMEs** have equal access to financing opportunities.

While the programme is in its early stages and concrete outcome data is not yet available, its design reflects a comprehensive model of blended finance that combines international resources, donor incentives, and local implementation. For North Macedonia's SME sector, Go Digital has the potential to become a transformative lever—strengthening competitiveness, expanding regional integration, and aligning the private sector more closely with the EU's **green and digital transition agenda**.

Table 5: EBRD "Go Digital" Loan⁴⁰

Instrument name	EBRD "Go Digital" Loan
Duration	Ongoing (first loan launched March 2025)
Description of goals	To support SMEs in investing in digital and automation technologies, enhance competitiveness, facilitate alignment with EU standards, and promote access to finance for women-led businesses. The programme aims to drive innovation and sustainable growth by enabling SMEs to embrace advanced technologies and digitalisation to remain competitive.

⁴⁰ Pajic, Jelena. "EBRD and EU Support SME Digitalisation in North Macedonia with First-of-Its-Kind Loan." *European Bank for Reconstruction and Development (EBRD)*, March 28, 2025. <https://www.ebrd.com/home/news-and-events/news/2025/ebrd-and-eu-support-sme-digitalisation-in-north-macedonia-with-.html>.

Relevance to national and regional strategies	Aligns with national goals for economic competitiveness and EU integration by fostering technology adoption and productivity improvements. It supports the broader objective of strengthening SMEs' resilience and competitiveness to advance North Macedonia's EU accession ambitions. It is closely linked to the National SME Strategy (in draft phase) and the ICT Development Strategy: SMART/MK 2030 Strategy by the Ministry for Digital Transformation. Regionally, the programme is part of the Western Balkans Investment Framework, contributing to the EU's Global Gateway strategy to boost smart and digital growth in the Western Balkans.
Enhancing digitalisation of SMEs	Provides dedicated credit lines and technical assistance for digital and automation technology investments, directly addressing financial barriers to SME digitalisation. In practice, local banks (e.g. Sparkasse Bank Skopje) on-lend EBRD funds to SMEs for qualifying tech investments, coupled with EU-funded advisory services and performance-based cash-back incentives upon successful implementation. These incentives prioritize high-impact new technologies, reducing upfront costs and encouraging adoption of cutting-edge digital solutions.

2.1.4.2. Loans for digitalization and digital transformation by the Development Bank of North Macedonia

The **Development Bank of North Macedonia (DBNM)** offers a dedicated credit line through its intermediary lending framework to support SMEs in implementing digitalization and digital transformation initiatives. Designed to alleviate financial hurdles, this loan product provides highly favourable terms, with individual loan amounts ranging from **€5,000 up to €300,000** for fixed capital investments and up to **€100,000** for working capital needs.

In terms of repayment, **fixed asset loans** come with a term of up to **8 years**, including a generous **12-month grace period**, while **working capital loans** are structured over **up to 5 years**, including a **6-month grace period**. The interest rate is capped at **2.9% per annum**, which stands out for its affordability and attractiveness to small and medium-sized enterprises.

Eligible beneficiaries include **micro, small, and medium-sized companies**, ensuring the instrument reaches businesses across the enterprise spectrum. The financing is flexible and tailored to diverse digital needs. For **fixed assets**, loans can be used to acquire modern production equipment featuring computerized or autonomous capacities, IoT devices (e.g., sensors, embedded systems, machine learning components), energy-efficiency solutions, new hardware, custom software development—including ERP and EDI systems—and even robotics and AI-driven machinery. On the **working capital** side, funds can cover digital marketing efforts, website creation and maintenance, subscriptions to ERP or EDI platforms, and cloud services.

This instrument reflects DBNM's proactive role in the broader national agenda of **digital transformation**, aligning with government strategies such as the Export Promotion Strategy (2024–2027) and the priorities of the Ministry of Digital Transformation. Alongside other development bank products—like green financing and loans for women entrepreneurs—it forms

part of an integrated approach to stimulate innovation, productivity, and competitiveness across North Macedonia's SME sector.

Table 6: Loans for digitization and digital transformation⁴¹

Instrument name	Loans for digitization and digital transformation
Duration	Ongoing (launched March 2023)
Description of goals	Credit for Digitalisation and Digital Transformation – a specialized loan product by the Development Bank of North Macedonia (MBDP/DBNM), facilitated through intermediary banks. The loans for digitization and digital transformation were established in order to provide favourable credit support during the implementation of digitization and digital transformation projects.
Relevance to national and regional strategies	Supports the Strategy for Promotion of Exports (2024–2027) that includes credit facilitation for digitization, as well as the broader national Digital Transformation agenda under the Ministry of Digital Transformation stressed out in the ICT Development Strategy: SMART/MK 2030 Strategy.
Enhancing digitalisation of SMEs	Loans finance: — Smart production equipment with autonomous/digital features — IoT devices, embedded systems, sensors, energy-saving control units — New hardware and software purchases, IT licenses — Software upgrades for existing production lines.

2.1.4.3. Innovation and Green Transformation Facility

The **Innovation and Green Transformation Facility**, launched in **December 2024**, is a pivotal initiative under the **Western Balkans Investment Framework (WBIF)**, orchestrated by the **European Investment Bank (EIB)** to support innovation and green investments across the Western Balkans, including **North Macedonia**. This **blended-financing lending envelope**, totaling approximately **€187 million**, aims to provide medium- to long-term credit lines that bolster the **innovative, digital, and green transformation** of small and medium-sized enterprises (SMEs) and mid-cap companies.

Roughly **70%** of the facility's investments are designated for **innovation-focused activities**—such as the development of new products, processes, or business models—while the remaining **30%** supports **climate mitigation and environmental sustainability projects**, especially in agriculture and related green sectors. Crucially, the initiative explicitly includes **digital transformation** support: it offers not only financing but also **technical assistance** to help firms identify and structure high-impact tech-enabled projects that boost competitiveness, exports, and alignment with EU standards.

⁴¹ “Loans for Digitization and Digital Transformation.” *Development Bank of North Macedonia (MBDP)*. March 2023. <https://www.mbdp.com.mk/en/Products/KreditiranjePrekuBankiProizvod/19>.

The facility emphasizes inclusivity and local capacity-building: a minimum of **80% of final beneficiaries** are expected to be SMEs, with the remainder being mid-cap enterprises. Additionally, it calls for empowering partner financial institutions, SMEs, and other intermediaries through advisory services that enhance digital and green investment readiness.

Deployment of these funds is expected to begin in **early 2026**, leveraging local commercial banking channels under the oversight of the EIB. By blending **loan financing, EU-backed grants or “cash-back” incentives**, and **technical advisory support**, the facility enables SMEs to overcome financial and structural barriers to adopting digital and environmentally sustainable solutions. Beyond SMEs themselves, the programme also supports **incubators, science/technology parks, and research centres**, thus fortifying the broader innovation ecosystem

Table 7: Innovation and Green Transformation Facility

Instrument name	Innovation and Green Transformation Facility
Duration	Approved in July 2025 launching early 2026
Description of goals	By offering local SMEs and Mid-Caps access to medium-to long-term funding, incentives and advisory support for their innovative, digital and green transformation, the operation will help strengthen these companies' competitiveness on the local and EU markets, stimulate exports and promote business expansion, sustainable growth and employment.
Relevance to national and regional strategies	Supports North Macedonia’s national priorities for SME competitiveness, digital transformation, and EU accession by financing innovation, digitalisation, and green projects in line with the Export Promotion Strategy (2024–2027) and the draft National SME Strategy 2025–2030. Regionally, it is embedded in the Western Balkans Investment Framework (WBIF) and acts as an implementation tool of the EU’s Green and Digital Transition agenda under the Global Gateway, while also advancing the Green Agenda for the Western Balkans to align the region with the European Green Deal.
Enhancing digitalisation of SMEs	Enhances the digitalization of SMEs by providing medium-to-long-term funding, incentives, and advisory support for their digital and innovative transformations. It offers various financial instruments, including loans, equity, and guarantees, to help businesses invest in new technologies, upgrade their operations, and adopt digital business models. In addition to financing, the facility provides advisory services and technical assistance, which helps SMEs with business planning and capacity building to ensure they are "investment ready" and can effectively implement digital solutions, thereby boosting their competitiveness and growth.

2.1.5. Other relevant EU Support Instruments

2.1.5.1. Digital Europe

Since **2023**, North Macedonia has been formally associated with the **Digital Europe Programme (DIGITAL)**, giving its institutions, SMEs, and public bodies access to one of the EU's flagship digital funding frameworks. The programme runs from **2021–2027** with a budget of **€7.588 billion** (some sources cite more than **€8.1 billion**, depending on the latest allocations) financed entirely by the **European Union**. Its purpose is to strategically invest in Europe's digital capacities and ensure that these technologies are widely deployed across the economy and society.

DIGITAL focuses on five priority areas: **supercomputing, artificial intelligence, cybersecurity, advanced digital skills, and the broad uptake of digital technologies** in both business and the public sector. By covering these areas, the programme aims not just to advance Europe's technological frontier but also to make digital transformation accessible and inclusive, particularly for SMEs and smaller economies like North Macedonia. Participation allows Macedonian companies, universities, research centres, and public agencies to apply for funding and take part in cross-border projects that develop and test new digital technologies, while also accessing training and infrastructure.

For North Macedonia, the programme directly supports the national digitalisation agenda and complements strategies for competitiveness, SME development, and EU integration. One of the programme's most practical tools for SMEs and public institutions is the network of **European Digital Innovation Hubs (EDIHs)**. These hubs serve as one-stop shops offering tailored services such as technology testing, training, financing advice, and networking. By 2024, **54,610 businesses and public sector entities** across participating countries had already benefited from such services, with a target of **287,400 by 2029**, reflecting the programme's scale and ambition. The inclusion of North Macedonia ensures that local enterprises are no longer isolated from these opportunities. Through DIGITAL, Macedonian SMEs can adopt AI and automation, improve cybersecurity resilience, and gain access to high-performance computing capacity that would otherwise be unavailable to them. Moreover, the programme fosters skills development by offering training in advanced digital competencies, helping bridge the gap between technological availability and human capital.

In essence, the Digital Europe Programme positions North Macedonia within a European ecosystem of digital cooperation, providing funding, infrastructure, and expertise that strengthen the capacity of SMEs and public bodies to transform digitally, become more competitive, and align with EU standards for the green and digital transition.

Table 8: Digital Europe Programme⁴²

Instrument name	<i>Digital Europe Programme (DEP): Accelerating Europe's Digital Transformation</i>
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⁴² "Digital Europe Programme". Ministry of Digital Transformation of the Republic of North Macedonia. 2025. <https://mdt.gov.mk/mk-MK/digitalna-evropa/povekje-informacii>

Duration	Ongoing. The program runs from 2021 to 2027. North Macedonia signed its association agreement in June 2023.
Description of goals	To accelerate Europe's digital transformation and economic recovery, supporting the EU's twin objectives of a green transition and comprehensive digital transformation, while bolstering the Union's resilience and strategic autonomy in the digital sphere. It provides funding for projects in key capacity areas: supercomputing, Artificial Intelligence (AI), cybersecurity, advanced digital skills, and ensuring a wide use of digital technologies across the economy and society, including semiconductors.
Relevance to national and regional strategies	Directly relevant to North Macedonia's national strategies as it reinforces policy priorities for SME competitiveness, innovation, and digital transformation outlined in the Export Promotion Strategy (2024–2027), the draft National SME Strategy 2025–2030 and the ICT Development Strategy: SMART/MK 2030 by the Ministry for Digital Transformation. By funding projects in AI, cybersecurity, advanced skills, and broad digital adoption, it supports the government's goals of boosting productivity and aligning with EU digital standards. At the regional level, the programme is embedded within the EU's Digital Transition agenda and contributes to the Green Agenda for the Western Balkans and the Global Gateway strategy, ensuring that North Macedonia's SMEs and institutions advance in step with regional digitalisation and sustainability priorities.
Enhancing digitalisation of SMEs	Enables businesses, public administrations, and other eligible organizations in North Macedonia to gain direct access to DEP calls for funding. This allows participation in projects that deploy digital technologies across the EU, particularly in areas like Artificial Intelligence and advanced digital skills. The program also permits the establishment of European Digital Innovation Hubs (EDIHs) within North Macedonia, such as INNOFEIT EDIH, which directly support SMEs and Public Sector Organizations (PSOs) in enhancing digital skills and competitiveness through technology adoption.

2.1.5.2. European Digital Innovation Hub

In **May 2025**, the **Centre for Technology Transfer and Innovation – INNOFEIT** at the Faculty of Electrical Engineering and Information Technologies, Ss. Cyril and Methodius University in Skopje (UKIM), in partnership with the **Fund for Innovation and Technological Development (FITD)**, signed a co-financing agreement to establish **INNOFEIT EDIH**, North Macedonia's first **European Digital Innovation Hub**. This initiative is co-funded by the **European Union's Digital Europe Programme (2021–2027)** and the **Government of North Macedonia** through FITD, securing national co-financing for the years **2025 and 2026**. The four-year programme is backed by a total budget of **€2 million**.

Designed to catalyze digital transformation across SMEs and public institutions, INNOFEIT EDIH offers a wide array of **technology-driven services**. These include access to **“Test Before**

Invest” facilities where businesses can pilot advanced solutions risk-free; **training and skill development** in areas such as artificial intelligence, cybersecurity, and robotics; **consultation and funding support** for navigating grant opportunities and digital investment; and **networking and ecosystem building** through events and collaborative platforms.

Over the span of four years, the hub aims to deliver more than **300 free support services** to SMEs and public entities. These interventions focus on priority digital domains—**AI, cybersecurity, cloud computing, IoT, and business process digitalisation**—as well as specialized sectors like smart agriculture and Industry 4.0. While full outcomes are yet to manifest, results are expected to include improved digital maturity among hundreds of beneficiaries; increased adoption of cutting-edge technologies in traditional industries; and enhanced linkages between SMEs, academia, and technology ecosystems. The initiative will also track metrics related to new digital investments, enhanced processes, and competitiveness improvements.

INNOFEIT EDIH is not only a localized innovation resource but also a **national digital focal point**, solidifying North Macedonia’s participation in Europe’s broader digital and green transformation agenda. By bridging advanced tech infrastructure, expertise, and SME needs, it lays the foundation for more resilient, innovative, and competitive enterprises aligned with EU standards

Table 9: INNOFEIT – European Digital Innovation Hub (EDIH)⁴³

Instrument name	INNOFEIT EDIH - National Digital Transformation Hub for SMEs and Public Sector
Duration	Ongoing (2023–2027) – Project launched 2023; EU Digital Europe Programme funding secured for 4 years (co-financing agreement signed May 2025)
Description of goals	INNOFEIT EDIH is established as the country’s first European Digital Innovation Hub, aiming to accelerate the digital transformation of North Macedonian SMEs (and public institutions) by providing them access to expertise, facilities, and support services. The hub’s core objective is to enhance SME competitiveness through adoption of advanced digital technologies – such as AI, robotics, cloud computing, and cybersecurity tools – thereby fostering innovation and growth in the economy. Ultimately, it seeks to develop a sustainable, digitally-enabled business ecosystem and help align the country’s economy with EU digital and innovation standards
Relevance to national and regional strategies	This initiative directly supports the National ICT Strategy (2023–2027) and ICT Development Strategy: SMART/MK 2030 Strategy, as it builds critical innovation infrastructure for the country. It demonstrates the government’s commitment (with FITD co-financing) to digital innovation as a development priority. By being part of the EU’s network of EDIHs, INNOFEIT EDIH aligns North Macedonia with the EU’s Digital Europe

⁴³ “INNOFEIT Signs Co-Financing Agreement for EDIH with FITD.” *INNOFEIT News*, Faculty of Electrical Engineering and Information Technologies, Ss. Cyril and Methodius University, Skopje. Published May 7, 2025. <https://feit.ukim.edu.mk/en/news/innofeit-signs-co-financing-agreement-for-edih-with-fitd/>.

	Programme goals, facilitating technology transfer and SME digital upskilling in preparation for EU accession. It also dovetails with regional Western Balkans digital integration efforts by promoting best practices and knowledge exchange in digitalisation.
Enhancing digitalisation of SMEs	The hub offers an integrated suite of services to help SMEs “test before invest” in new technologies: access to labs and equipment for experimenting with digital solutions (allowing companies to pilot AI, IoT, automation tools, etc. before full investment). It provides training and digital skills development, including courses on AI, cybersecurity, robotics and other key tech areas. The EDIH also gives consulting on access to finance for digital projects (guiding SMEs to relevant grants or investors) and fosters networking via events and hackathons to connect enterprises with tech innovators. These mechanisms directly tackle knowledge and cost barriers, enabling more SMEs to adopt state-of-the-art digital technologies and processes.

2.1.5.3. Interreg VI-A IPA Bulgaria–North Macedonia Programme (2021–2027)

Beyond national strategies, **EU cross-border programmes provide SMEs in North Macedonia with important opportunities to access funding, networks, and markets.** A key example is the **Interreg VI-A IPA Bulgaria–North Macedonia 2021–2027 Programme**, which operates under the EU’s cohesion policy framework. Its territorial strategy is aligned with **EU Policy Objective 5: “Europe closer to citizens”**, seeking to reduce socio-economic disparities, strengthen regional competitiveness, and enhance integration across borders .

The programme’s **Priority 3 – Integrated Development of the Border Region** is particularly relevant for SMEs. Its **Specific Objective (SO1)** is to “increase the competitiveness of the local economy and improve the business environment” . This objective translates into a targeted package of measures:

- **Technological modernization** of SMEs, including upgrading production facilities and equipment;
- **Digitalisation support**, helping firms adopt new digital tools and processes to improve efficiency;
- **Green business practices**, integrating sustainability into business operations;
- **Skills development**, through training, mentoring, and knowledge transfer tailored to modern industries;
- **Market integration**, supporting cross-border partnerships, internationalisation, and value-chain participation .

From a financing perspective, the programme provides **investment grants ranging from €300,000 to €600,000 per project**, with SMEs eligible for **€100,000 to €300,000 each**, depending on the partnership structure . Funding is co-financed at **85% by the EU and 15% nationally**, and all support is governed by the **EU de minimis aid rule** (max. €300,000 per SME over three years) . Eligible SMEs must be legally registered in the programme area before end-2022, have at least

51% private capital, and operate in sectors such as **food processing, beverages, and textiles manufacturing** .

What makes this programme especially important for digital transformation is that it **links funding with cooperation**. SMEs are not only investing in equipment or digital tools, but also working in **cross-border partnerships** that expose them to new markets, networks, and knowledge flows. This **combination of financial support and collaboration** helps smaller firms overcome barriers that national programmes alone cannot address. By requiring that projects demonstrate cross-border impact, Interreg ensures that SMEs contribute to building a more integrated, innovative, and competitive regional economy.

Table 10: Cross-Border Cooperation (CBC) Programme Bulgaria–North Macedonia 2021–2027 – Priority 3: Integrated Development of the Border Region⁴⁴

Instrument name	Cross-Border Cooperation (CBC) Programme Bulgaria–North Macedonia 2021–2027 – Priority 3: Integrated Development of the Border Region
Duration	The programme runs throughout the 2021–2027 programming period. Priority 3 activities to support SMEs are expected to be implemented in multiple calls until 2027. Individual SME investment projects are eligible within cross-border partnerships, with implementation periods typically 12–24 months.
Description of goals	The measure seeks to increase the competitiveness of the local economy and improve the business environment in the cross-border region. It supports SMEs in modernisation, digitalisation, green transition, skills upgrading, and cross-border market integration. By fostering partnerships between Bulgarian and North Macedonian enterprises, the programme strengthens economic resilience, innovation capacity, and territorial cohesion.
Relevance to national and regional strategies	This programme contributes to North Macedonia’s national goals for SME competitiveness (linked to the forthcoming SME Strategy 2025–2030) and supports the ICT Development Strategy: SMART/MK 2030 objectives on digitalisation and green transition. Regionally, it is aligned with EU Cohesion Policy and IPA III priorities, and complements the EU Digital Decade 2030 targets by encouraging SME digitalisation, cross-border cooperation, and participation in regional value chains.
Enhancing digitalisation of SMEs	SMEs are eligible for investment grants of €100,000–€300,000 per partner, co-financed at 85% EU and 15% national. Support focuses on adoption of new technologies, digital tools, and innovation in production processes. By combining financing with mandatory cross-border partnerships, SMEs not only upgrade digitally but also gain exposure to new markets, practices, and knowledge flows. This accelerates digital transformation, increases competitiveness, and helps SMEs align with EU standards for innovation and sustainability.

⁴⁴ Interreg VI-A IPA Bulgaria–North Macedonia Programme. “Announcement: Open Call for Project Proposals for SMEs under Priority 3—Integrated Development of the Border Region.” Call No. 2021TC16IPCB006-2025-4. Programme website. June 4, 2025. <https://ipa-bgmk.mrrb.bg/index.php/en/node/249>.

2.1.6. ICT Development Strategy: SMART/MK 2030 Strategy

The **ICT Development Strategy: SMART/MK 2030** strategy is the most comprehensive and forward-looking policy document developed by the Government of North Macedonia in the field of digital transformation. It is designed as a **detailed roadmap** that addresses long-standing developmental challenges in information and communication technologies (ICT) and the wider digital ecosystem. Its overarching aim is to secure an **accelerated and inclusive digital development of all sectors**, thereby fostering a favorable environment for rapid socio-economic progress. In doing so, the strategy aligns North Macedonia with the European Union's **Digital Decade 2030 targets** and the broader reform agenda tied to EU accession.

The document sets out four strategic pillars:

1. **ICT Infrastructure and Connectivity** – ensuring affordable, high-speed, and secure broadband for households, businesses, and institutions, including future readiness for 6G.
2. **Digital Competences and Inclusion** – building a digitally skilled population and workforce through education, training, and lifelong learning to reduce the digital divide.
3. **E-Governance** – strengthening efficiency, transparency, and accessibility of public services through interoperability, digital identity, and citizen-centered platforms.
4. **Businesses, Innovation, and New Technologies** – supporting the digital transformation of the private sector, advancing innovation ecosystems, and enabling the use of emerging technologies like artificial intelligence, cloud computing, and big data

Within these pillars, **SMEs are explicitly recognized as a central driver of the digital economy**. Priority Area 4 directly addresses their transformation under the heading “*Бизниси, иновации и нови технологии*”. The strategy acknowledges that SMEs represent the backbone of the national economy and that their modernization is essential for improving competitiveness, productivity, and integration into European value chains.

Planned measures targeting SMEs include a structured mix of **policy instruments**:

- **Systematic support for digital transformation of SMEs** through advisory and technical assistance mechanisms.
- Creation of a **digital support portal** providing tools, resources, and information for SMEs embarking on digitalisation.
- **Training programmes and seminars** to strengthen SME digital skills.
- **Voucher schemes for digital services**, allowing SMEs to access consultancy and technical expertise.
- **Financial incentives** for investment in IT infrastructure and software solutions.
- **Specialised training on digital marketing and social media**, to expand SMEs' market presence.
- **Mentorship programmes** to guide SMEs through the digitalisation process.

The measures planned from 2026 place SMEs at the center of digitalisation efforts in the national economy. The strategy aims to raise the digital maturity of SMEs through a combination of capacity-building activities and direct financial support. In this way, digital transformation is

extended beyond large enterprises and the public sector to include the broader SME base, ensuring a more comprehensive impact across the economy.

Table 11: Systematic Support for Digital Transformation of SMEs (ICT Development Strategy: SMART/MK 2030)

Instrument name	Systematic support for Digital Transformation of SMEs
Duration	Deriving from the ICT Development Strategy: SMART/MK 2030 strategy the document plans this measure to start with activities from the first quarter of 2026 and most of the activities to end the fourth quarter of 2027.
Description of goals	This measure aims to raise the digital maturity of SMEs by combining advisory support, training, financial incentives, and access to resources. It is designed to make digitalisation tools and services more accessible to small businesses, enabling them to modernize operations, improve competitiveness, and integrate into EU and regional value chains.
Relevance to national and regional strategies	This measure is aligned with the ICT Development Strategy: SMART/MK 2030 strategy, which serves as the overarching national framework for digital transformation, and directly contributes to the EU's Digital Decade 2030 objectives. It also complements the Government's programmes for SME competitiveness and innovation, supporting the country's EU accession priorities by closing the digitalisation gap between Macedonian SMEs and their EU counterparts.
Enhancing digitalisation of SMEs	<p>The measure introduces a portfolio of activities to support SMEs:</p> <ul style="list-style-type: none"> • Creation of a digital support portal to provide information, resources, and tools. • Training programmes and seminars to build SME digital skills. • Introduction of voucher schemes for digital services, allowing SMEs to access consultancy and technical expertise. • Financial support for IT infrastructure and software investments. • Specialised training in digital marketing and use of social media. • Support for local software solutions tailored to SMEs. • Structured mentorship programmes guiding SMEs through the transformation process. <p>Together, these activities aim to ensure that SMEs have both the knowledge and the resources to effectively implement digital solutions, making them active participants in the national digital economy.</p>

Table 12: Support for Ethical and Responsible Development of Artificial Intelligence in Startups and ICT Companies (ICT Development Strategy: SMART/MK 2030)

Instrument name	Support for Ethical and Responsible Development of Artificial Intelligence in Startups and ICT Companies
Duration	Deriving from the ICT Development Strategy: SMART/MK 2030 strategy the document plans this measure to start with activities from the first quarter of 2026 and most of the activities to end the fourth quarter of 2027.
Description of goals	The measure promotes the ethical and responsible development of artificial intelligence (AI) applications by startups and ICT companies. It aims to create a regulatory and operational environment where small enterprises can adopt and design AI solutions while respecting ethical standards, data protection, and international best practices.
Relevance to national and regional strategies	This measure is aligned with ICT Development Strategy: SMART/MK 2030, as well as the EU's Artificial Intelligence Act and Digital Decade 2030 objectives. It also supports North Macedonia's EU accession process by advancing compliance with EU rules on responsible technology use and contributes to positioning the national ICT sector within regional innovation networks.
Enhancing digitalisation of SMEs	By targeting startups and ICT companies (most of which fall under the SME category), the measure facilitates access to knowledge, guidance, and potential incentives for AI adoption and development. It supports SMEs in integrating advanced digital technologies into their business models, helping them move beyond basic digitalisation toward innovation-driven growth. This strengthens their competitiveness and prepares them for participation in EU and global digital markets.

2.2. General Assessment

Please, describe in general the digitalisation of SMEs situation in your region: what is the current state, the main issues and gaps, where the region is lagging or front running, what economic sectors are less or more advanced in digitalisation, etc. Also, describe the policy agenda to tackle the presented challenges (is the digitalisation of SMEs a high political priority, are there any general or specific measures and actions, etc.).

North Macedonia recognized the importance of digitalisation early on, yet today the overall level of digital adoption among businesses – especially small and medium-sized enterprises (SMEs) – remains relatively low. North Macedonia has built a strong digital infrastructure, with internet penetration rising to 92% by 2025⁴⁵ and mobile networks offering near-ubiquitous 4G and expanding 5G coverage. Connectivity is fast

⁴⁵ State Statistical Office of the Republic of North Macedonia. *Information and Communication Technology Usage in Households and by Individuals, 2024*. Skopje. <https://www.stat.gov.mk/PrikaziSoopstenie.aspx?rbtxt=77>

and reliable, with mobile broadband speeds ranking competitively worldwide, while affordability is generally not a major barrier for households. However, this strong foundation reveals a digital paradox: despite advanced infrastructure, SME adoption of sophisticated digital technologies remains low, pointing to challenges in skills, managerial attitudes, and perceived value rather than access itself.⁴⁶

The country remains among the weakest in the region and EU when it comes to business digitalization. In 2022 the country ranked highest in the Western Balkans according to the Digital Economy and Society Index⁴⁷ in terms of broadband infrastructure and ICT regulatory framework with a score of 3.3/5, however it ranked among the lowest in ICT adoption in the private sector, with only 1.5/5.

In terms of integration of digital technology by businesses, Macedonian companies significantly lag behind their EU and regional peers in using digital tools. The European Innovation Scoreboard 2025⁴⁸ shows that North Macedonia's overall digitalization performance is only at 14.4% of the EU average, ranking 35th. While investments in information technologies have increased, their performance remains low at 24.1% of the EU average. Similarly, Cloud Computing performance, despite a significant increase, ranks 35th with a score of 17.7% of the EU average. This suggests that while there is some movement towards digital investment, the depth and breadth of technology integration into core business processes are still limited.

Digitalisation progress in North Macedonia varies across sectors. Certain industries are markedly ahead in adopting digital tools: notably the financial sector, IT sector, as well as logistics and distribution companies are among the most digitalised. Banks and financial services firms, for example, have invested in online banking, digital payments, and IT security, driven by competition and global standards.⁴³ The domestic ICT industry itself is a growing bright spot – as of 2019, nearly 2,000 active tech companies were operating, especially in software and IT services. This tech sector has produced internationally competitive firms and contributes significantly to exports. Similarly, transport/logistics providers and large distributors have begun using digital platforms for tracking shipments, managing inventory, and online sales where applicable, keeping those segments more up-to-date. In contrast, traditional and smaller sectors lag behind in digitalisation. Manufacturing SMEs (e.g. in textiles or light industry), small retailers, agriculture and food producers, and local service businesses tend to use digital tools minimally. Many of these firms still rely on analog processes, paperwork, and in-person transactions. For instance, a strong services sector usually correlates with higher computer use, whereas a traditional manufacturing-oriented sector (like textiles) sees lower computer and internet use in daily operations.⁴⁹

⁴⁶ Business Confederation of Macedonia. Enabling Environment for MSME digital transformation. Skopje: Business Confederation of Macedonia, 2023. https://bcm.mk/wp-content/uploads/2024/08/Preview_Analysis-Full_Mk.pdf

⁴⁷ *Digital Economy Society Index: Western Balkans Report 2022*. Sarajevo: Regional Cooperation Council, 2022. <https://www.rcc.int/files/user/docs/43a521a624cf08523a2268a67a7be2ff.pdf>.

⁴⁸ European Commission. *European Innovation Scoreboard 2025: Country Profile – North Macedonia*. Brussels: European Commission, 2025. https://ec.europa.eu/assets/rtd/eis/2025/ec_rtd_eis-country-profile-mk.pdf.

⁴⁹ Macedonia2025. Digitalization and Digital Skills of Citizens and Businesses: State of Play. Skopje, 2023. https://www.macedonia2025.com/wp-content/uploads/2023/03/State-of-play_Digitalization-and-digital-skills.pdf.

In North Macedonia, micro and small enterprises are far less digitalised than medium and large firms. Smaller companies often have no dedicated IT staff and minimal online presence. Even in the tourism and hospitality sector – which has great potential to benefit from digital platforms – many providers only recently started adopting online booking or digital marketing. (Encouragingly, new initiatives aim to boost digital uptake in tourism, seeing it as a way to improve the travel experience and attract more visitors through modern services)

It's important to note that the abundant local IT talent is not yet fully tapped by traditional SMEs. Many Macedonian IT firms focus on outsourcing and foreign clients, rather than digitalising domestic businesses.⁴³ This means the know-how exists in the economy, but cross-sector collaboration has been limited. Bridging this gap – by connecting tech solution providers with manufacturers, farms, shops, etc. – is a key opportunity. Overall, North Macedonia has a two-speed digital economy: a few sectors and larger companies are approaching European standards of digitalisation, while a long tail of SMEs across various sectors are only beginning to adopt even basic digital tools. Addressing this imbalance will be crucial for inclusive growth, so that all sectors (from finance to farming) can reap the productivity benefits of the digital age.

North Macedonia has increasingly positioned the digital transformation of small and medium-sized enterprises (SMEs) as a central policy priority, framing it as a cornerstone for competitiveness, innovation, and alignment with EU integration goals. In North Macedonia, the digital transformation of small and medium-sized enterprises (SMEs) has become a recognized political priority, gaining new momentum with the establishment of the Ministry of Digital Transformation in 2024. This institutional upgrade demonstrates a clear governmental commitment to accelerate the digital agenda and align the country with the EU's Digital Decade targets. Several national strategies reinforce this priority, including the ICT Strategy 2023–2027 and the Smart Specialisation Strategy 2023–2027, both of which emphasize SME competitiveness through digital and green transitions. The long-term National Development Strategy 2024–2044 further underlines digitalisation as a driver of innovation and sustainable economic growth.

A robust legal framework supports this agenda, particularly through the Law on Electronic Documents, Electronic Identification and Trust Services, which enables secure e-signatures and trust services, and the Law on Electronic Management, which ensures interoperability and access to e-services for businesses via the national portal. While these reforms bring the country closer to EU standards, gaps remain in areas such as e-invoicing, which is currently permitted but not mandatory, limiting the digitalisation of business transactions.

To support SMEs directly, the government and its partners have launched a series of financial and technical measures. The Fund for Innovation and Technological Development (FITD) provides grant schemes that encourage companies to adopt new technologies and commercialise innovative solutions. However, a new law has been approved which dissolves both the Agency for Entrepreneurship Support and the Fund for Innovation and Technological Development to establish a unified Agency for

Innovation, Scientific-Technological Development, and Entrepreneurship. This new institution, structured with enhanced staffing and financial resources, is intended to more effectively support innovation, entrepreneurship, and SME competitiveness in North Macedonia. Complementing this, the European Digital Innovation Hub INNOFEIT, established in 2025, offers SMEs access to test-before-invest services, advisory support, training, and financing pathways. These instruments are reinforced by international financial partners: The European Bank for Reconstruction and Development has introduced targeted credit lines for SME digitalisation, while the Western Balkans Investment Framework's "SMEs Go Digital" initiative provides blended finance to expand uptake beyond major urban centers.

2.3. Identification of Policy Challenges

Analyse previously described policy instruments and measures and identify key challenges. Highlight the main challenges in digitalisation of SMEs, identify main weaknesses and areas to be improved. Assess the impact of policy instruments among SME beneficiaries, identify possible barriers and potential needs of SMEs not yet addressed. Make a distinction between general (indirectly influencing digitalisation of SMEs) and specific measures and action. Link the identified challenges to national and regional policies.

The policy framework for SME digitalisation in North Macedonia is evolving, combining a set of broad strategies with more targeted financial and technical measures. On the one hand, **general instruments** create enabling conditions for digitalisation. These include the **ICT Development Strategy: SMART/MK 2030 strategy**, which provides a long-term vision and is aligned with EU Digital Decade targets; the **Digital Europe Programme**, which North Macedonia has joined to access EU-level initiatives; and the **INNOFEIT European Digital Innovation Hub (EDIH)**, which supports SMEs through services such as test-before-invest and digital skills training. These measures do not directly provide money to SMEs, but they build the infrastructure, competences, and institutional frameworks needed for digital transformation.

On the other hand, there are **specific instruments** that channel resources directly to SMEs. The **Ministry of Economy's subsidy programme** offers co-financing for SMEs investing in digital tools, while the **Fund for Innovation and Technology Development (FITD)** has implemented grants and voucher schemes for digitalisation and innovation. Financial instruments such as the **Development Bank of North Macedonia's credit line** and the **EBRD "Go Digital" programme** provide loans and blended finance that help SMEs overcome investment barriers. These measures target firms directly, with the aim of reducing costs, encouraging innovation, and providing access to external expertise.

Despite this mix, several challenges remain that undermine the effectiveness of the policy landscape.

2.3.1. Policy continuity and coordination

A major challenge for SME digitalisation in North Macedonia is the lack of policy continuity and coherence. The **Strategy for the Development of Small and Medium-Sized Enterprises 2018–2023** expired without a successor in place, and as of September 2025, the new **National SME Strategy 2025–2030** remains in draft form. This means that SMEs have operated without a

formally adopted strategic framework for two years, and if adoption continues to be delayed, this gap could extend to nearly three years. This creates a policy vacuum during a period when digital transformation should be accelerating.

The **ICT Development Strategy: SMART/MK 2030 strategy** was adopted in September 2025. While it represents the most ambitious national vision for digital transformation, its SME-specific measures are not scheduled to begin until 2026 and run through 2027, with other measures continuing up to 2030. As of September 2025, **no public budget allocations have been attached to these measures**. Although ministries and agencies are listed as responsible stakeholders, there is no financial framework to guarantee timely implementation. This raises concerns that, even if the strategy is formally adopted, execution may lag behind political commitments.

In parallel, the **Programme for the Development of Entrepreneurship and Competitiveness of Small and Medium-Sized Enterprises** (a Ministry of Economy's annual programme) illustrates the instability of financial support. Between 2017 and 2024, the programme budget grew from approximately €0.2 million to a peak of €1.3 million in 2024, providing a relatively stable envelope for SME support. However, in 2025 the allocation was cut sharply to around €0.3 million — a **76% reduction compared to 2024**. This sudden contraction limited the number of firms that could be supported and undermined the programme's capacity to meet growing SME demand for digitalisation support. Although the 2025 programme ring-fenced digitalisation for the first time as a dedicated priority (with about 29.8% of the envelope directly traceable to digital measures), the steep budget cut overshadowed this progress, leaving support fragmented and insufficient in scope.

The **Smart/MK strategy** itself acknowledges weaknesses in institutional coordination. Multiple ministries, agencies, and donor-funded programmes operate in parallel, often without a central mechanism to align priorities or harmonise instruments. Recent institutional changes, such as the merger of the Fund for Innovation and Technology Development (FITD) with the Agency for Entrepreneurship Promotion and the creation of the Ministry for Digital Transformation, were intended to streamline the system but have in practice introduced overlapping mandates and transitional uncertainty.

Taken together, these factors illustrate the risks of policy fragmentation: expired or draft strategies, unpredictable funding, and shifting institutional responsibilities. For SMEs, this means that support programmes are often short-lived, underfunded, or poorly connected to one another. For policymakers, it reduces the credibility of digitalisation commitments and hinders progress towards EU Digital Decade 2030 benchmarks, particularly the target that 90% of SMEs achieve at least basic digital intensity.

2.3.2. Access to finance and uptake of instruments

North Macedonia has put in place a set of funding channels—grants, subsidies, and loans—but their **scale, design, and maturity** still limit uptake and depth of transformation among SMEs.

On the **specific** side, the **Programme for the Development of Entrepreneurship and Competitiveness of Small and Medium-Sized Enterprises** co-finances digitalisation at **40% up to 150,000 MKD (≈€2,500)**. This lowers entry costs but is often insufficient for end-to-end transformation (e.g., full ERP/PLM rollouts, integration, and change management). The

programme's overall **budget volatility** compounds this: after peaking around **€1.3m in 2024**, it dropped to **~€0.3m in 2025**, sharply narrowing the number and ambition of supported projects—even though 2025 ring-fenced a larger **share** for digitalisation than in 2024.

On the **innovation** track, FITD's targeted calls catalysed promising pilots, but reach remained modest. For example, the 2023 “With Digital Transformation to Innovation” challenge funded **13 SMEs**, which was valuable for demonstration effects yet small relative to total demand.

On the **credit** side, the DBNM line (long tenors, grace periods, interest $\leq 2.9\%$, and eligibility for both fixed assets and working capital) and the **EBRD “Go Digital”** (blending loans with TA and performance incentives, launched locally in **March 2025**) are well-suited to bigger upgrades. However, collateral requirements, documentation burdens, and the early-stage rollout of these instruments mean that **effective uptake** still needs to build.

Another important issue is the uncertain funding of future measures under the **ICT Development Strategy: SMART/MK 2030**. While some measures in the strategy have indicative budgets attached, the **SME-specific measure M 4.1.1 “Systematic support for digital transformation of SMEs”** does **not** have any budget allocated as of September 2025, despite being scheduled to begin in 2026. This creates uncertainty for SMEs and reduces confidence that the planned support will be delivered on time and at the necessary scale. Without a publicly available financial framework, the risk remains that the measure's implementation will be delayed or underfunded, further reinforcing SMEs' dependence on internal funds and small-scale subsidies.

Furthermore, a significant gap exists between the available public and private financial support programmes and their actual utilisation by SMEs. This indicates that while resources exist, they are not effectively reaching the majority of businesses. A research study found that **92% of enterprises rely on their own internal funds** for digital transformation projects, pointing to a limited supply of, or inaccessibility to, external funding.

Taken together, these weaknesses constrain progress from “basic tools” to **advanced adoption** (cloud, AI, analytics) that EU-aligned policies expect. Even as **general** enablers like the Digital Europe Programme and EDIH aim to reduce knowledge and risk barriers, access-to-finance challenges remain a structural barrier to scaling SME digitalisation.

2.3.3. Skills and absorptive capacity

The third challenge is limited skills and absorptive capacity within SMEs. Many small firms lack employees with the necessary digital competences to implement and maintain new technologies. Managers may also be hesitant to invest in digitalisation if they are unsure of the return on investment or lack understanding of how to integrate digital tools into business models. Although training programmes and EDIH services are available, their scale is still modest compared to the overall need. Without significant investment in digital skills, SMEs risk underutilising the support they receive through grants or loans.

Finance alone does not guarantee transformation; SMEs need **people and processes** able to absorb technology. Current data indicate that most MSMEs **did not allocate** funding for digital skills training in 2023, a majority of micro-firms **did not assess** their skill needs, and well over half **did not provide** any digital training—patterns that weaken implementation quality and the persistence of results. **Specific** instruments (MoE subsidies, FITD grants) can buy tools, but without managerial capability, process redesign, and internal champions, benefits remain shallow

or short-lived. **General** enablers seek to fill this gap: **INNOFEIT EDIH**, co-financed via the Digital Europe Programme and the government, is set up for “test-before-invest,” advisory, and skills development across AI, cybersecurity, cloud, and IoT, with a plan to deliver **300+ services** over four years. This architecture is sound, but current **scale and coverage** are still catching up to need; many SMEs outside central hubs have limited access to hands-on diagnostics, tailored upskilling, and on-site integration support. Until short-cycle, **practical upskilling** is delivered more broadly—and linked tightly to funded projects—the risk remains that firms acquire software or equipment without transforming workflows, data practices, and decision-making. Smart/MK’s **general** pillar on competences acknowledges this, but without allocated budgets, it cannot yet guarantee the volume of training necessary to shift the needle nationally

However, these initiatives are still modest in scale compared to the overall SME population, and outreach beyond Skopje the capitol and other major centres remains limited. Without wider availability of short-cycle, practical upskilling opportunities — closely tied to funded projects — there is a high risk that SMEs will acquire software or equipment but fail to adapt business processes and staff competences to use them effectively. This slows down the pace of transformation and hinders progress towards the EU Digital Decade 2030 target that 80% of adults should have at least basic digital skills by 2030.

2.3.4. Public sector demand, infrastructure, and ecosystem development

A key barrier to SME digitalisation in North Macedonia is the limited role of the **public sector as a driver of demand**. At present, procurement rules are not adapted to encourage the uptake of innovative solutions from startups and SMEs, meaning that many local ICT firms do not see the state as a potential client. This reduces opportunities for SMEs to test, validate, and scale their products within the domestic market. Open data access is also incomplete, which restricts SMEs from building new services on top of government datasets. The **ICT Development Strategy: SMART/MK 2030 strategy** includes measures on e-government, interoperability, and open data, but as of September 2025 no public budgets have been allocated to these measures. Without stronger public demand signals and transparent data frameworks, the innovation ecosystem cannot fully support SME digitalisation.

Infrastructure gaps add a further layer to this challenge. The **National Operational Broadband Plan 2019–2029** sets ambitious goals for nationwide gigabit broadband and 5G deployment, but implementation is still uneven. SMEs in rural and underserved regions continue to face connectivity problems, which limits their ability to adopt advanced solutions such as cloud services, remote collaboration platforms, e-commerce, and IoT applications. These disparities create a dual-speed economy where SMEs in urban centres, particularly Skopje, gain earlier access to digital opportunities, while those in other parts of the country risk falling behind. This undermines both competitiveness and territorial cohesion, and slows alignment with the EU Digital Decade 2030 target of universal gigabit connectivity and 5G coverage.

Finally, the wider **digital ecosystem suffers from interoperability and governance shortcomings**. National e-government systems are not yet fully aligned with EU interoperability standards, which weakens trust in digital public services and reduces their usability for businesses. Incomplete integration across ministries and agencies also raises transaction costs for SMEs and limits efficiency gains. The absence of strong interoperability frameworks prevents spillover benefits from public sector digitalisation into the private sector, where SMEs could otherwise benefit from simpler regulatory processes, streamlined data exchange, and new market opportunities. Strengthening ecosystem governance is essential if SMEs are to play a central role

in the digital economy, and it directly connects to the EU Digital Decade objectives of ensuring that 100% of key public services are available online and interoperable across borders.

Table 12: Policy challenges

2.3.1. Policy continuity and coordination	
Title of the Challenge	Description of the challenge
C1: Outdated Strategic documents	Existing policies are often not sufficiently differentiated to address the diverse needs within the SME sector, particularly for micro-businesses and firms in different economic sectors. For micro-businesses, a significant barrier is a lack of appropriate financing options, as financial institutions are hesitant to lend for smaller, risky projects in low-margin industries. This challenge is more pronounced for smaller players with limited financial resources. The SME Strategy 2018–2023 has expired, and as of September 2025 the new National SME Strategy 2025–2030 remains in draft form. This leaves SMEs without an adopted strategic framework for nearly two years, and if adoption slips into 2026, the gap will extend to three years. The ICT Development Strategy: SMART/MK 2030 strategy was in draft form in September 2025. While SME-specific measures (M 4.1.1 “Systematic support for digital transformation of SMEs”) are scheduled to start in 2026, no public budget has been allocated to them. This creates uncertainty about whether implementation will start on time.
C2: Institutional and Regulatory Hurdles	The effectiveness of digitalization policies is often undermined by broader institutional and regulatory issues within the country's business environment. Key barriers to private sector growth include a large informal economy, weak governance, and weak enforcement of competition policy. Furthermore, a lack of compliance with EU regulations creates confusion for businesses and can limit North Macedonia's ability to participate in the EU's digital single market. ⁵⁰
C3: Fragmented Institutional Coordination and Frequent Restructuring	North Macedonia's digitalisation and innovation ecosystem remains hindered by fragmented institutional coordination and repeated restructuring of support bodies. Multiple actors—including ministries, agencies, and donor programmes—operate in parallel without a central mechanism to align efforts, leaving support networks only partially mapped and difficult for SMEs to navigate. ⁵¹ Recent reforms, such as the merger of the Fund for Innovation and Technological Development (FITD) with the Agency for Entrepreneurship into the new Agency for Innovation, Scientific-Technological Development, and Entrepreneurship, were designed to streamline support but have also introduced transitional uncertainty, overlapping mandates, and temporary disruptions. This environment creates duplication of initiatives, limited visibility of resources, and weak collaboration between the public and private sectors, ultimately reducing the coherence and effectiveness of policies aimed at SME digital transformation.

⁵⁰ North Macedonia Diagnostic. London: European Bank for Reconstruction and Development, 2019. https://www.ebrd.com/content/dam/ebird_dxp/assets/pdfs/country-strategies/north-macedonia/North-Macedonia-Private-Sector-Diagnostic.pdf.

⁵¹ International Telecommunication Union (ITU). *Digital Innovation Profile: North Macedonia – Digital Innovation Ecosystem: Strategies and Recommendations for Accelerating Digital Transformation*. Geneva: ITU Telecommunication Development Bureau, 2023. <https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Publications/2023/Digital%20Innovation%20Profile%20-%20North%20Macedonia.pdf>.

2.3.2. Access to finance and uptake of instruments	
Title of the Challenge	Description of the challenge
C4: Policy-to-SME Disconnect	A significant gap exists between the available public and private financial support programs and their actual utilization by SMEs. This indicates that while resources exist, they are not effectively reaching the majority of businesses. A research study ⁵² found that the majority of enterprises (92%) rely on their own internal funds for digital transformation projects, pointing to a limited supply or inaccessibility of external funding.
C5: Budget volatility in government programmes	The Programme for the Development of Entrepreneurship and Competitiveness of SMEs peaked at ~€1.3m in 2024 but dropped sharply to ~€0.3m in 2025. Even though a larger share of the 2025 budget was earmarked for digitalisation, the overall reduction undermined predictability and limited the number of SMEs supported.
C6: Scale of financial support	MoE subsidies (40% up to €2,500) are too modest to support advanced digitalisation. FITD calls have funded only a small number of SMEs (e.g., 13 firms in the 2023 “With Digital Transformation to Innovation” challenge).
C7: Early-stage loan instruments	The DBNM credit line and the EBRD “Go Digital” programme provide favourable terms but remain new, with uptake constrained by collateral and documentation requirements.
2.3.3. Skills and absorptive capacity	
Title of the Challenge	Description of the challenge
C8: Skills Development Deficit	There is a widespread lack of digital expertise within the SME workforce and a failure of the current system to adequately address this skills gap. 63 percent of MSMEs have not allocated funds for digital skills training in 2023. 60 percent of micro-enterprises did not assess the digital skills needs of their employees, and 58 percent did not provide any training for digital skills development. The primary barriers to further training are the direct costs and the logistical problem of employee absence from work. ⁵³
C9: Limited scale of interventions	While Smart/MK and INNOFEIT EDIH (Digital Europe Programme) include training and advisory services, their scale remains modest relative to the total SME population, and outreach beyond Skopje is limited.
2.3.4. Public sector demand, infrastructure, and ecosystem development	
Title of the Challenge	Description of the challenge
C10: Uneven Digital Infrastructure and Interoperability Gaps	The National Operational Broadband Plan (2019–2029) and related strategies aim to deliver gigabit-level broadband and 5G access across the country, yet full deployment remains incomplete. SMEs in rural and underserved areas continue to face connectivity barriers, limiting their ability to adopt cloud services, remote collaboration tools, and e-commerce platforms. Moreover, national e-government systems still fall short of full

⁵² Improving the Competitiveness of Micro, Small and Medium-Sized Enterprises through Digital Transformation in North Macedonia]. Skopje: Strategic Development Centre, July 2024. <https://sdc.com.mk/wp-content/uploads/2024/07/POLICY2.pdf>.

⁵³ Business Confederation of Macedonia. Enabling Environment for MSE digital transformation. Skopje: Business Confederation of Macedonia, 2023. https://bcm.mk/wp-content/uploads/2024/08/Preview_Analysis-Full_Mk.pdf

	alignment with EU interoperability standards, impacting service efficiency and user confidence among businesses. ⁵⁴
C11: Weak demand-side role of public sector	Public procurement is not adapted to innovative SME solutions, and open data access remains incomplete. Startups and ICT SMEs therefore lack domestic demand opportunities.
C12: Interoperability and governance gaps	E-government systems are not fully interoperable or aligned with EU standards, raising transaction costs for SMEs and reducing trust in digital public services. Spillover effects from public digitalisation into the private sector are limited.

2.4. Regional Competitiveness

North Macedonia's commitment to digital transformation, driven by its aspiration for closer alignment with European Union standards, has emerged as a central pillar of its economic strategy. The country's private sector, overwhelmingly dominated by small and medium-sized enterprises (SMEs), is positioned at the nexus of this transformation. A comprehensive analysis of the economic, social, and innovation dimensions reveals a nuanced picture of progress and persistent challenges.

Economically, the country has achieved consistent growth in GDP per capita and established a highly profitable and fast-growing information and communication technology (ICT) sector. SMEs account for over 73% of total employment and contribute more than 65% of the total value added, highlighting their critical role in the economy. However, a significant productivity gap exists between Macedonian SMEs and their EU counterparts. This divergence can be largely attributed to an uneven pace of digitalization, where a highly skilled, well-compensated ICT sector coexists with a broader business landscape struggling to adopt digital tools and processes. This disparity is further amplified by a profound national skills gap, which creates a competitive wage premium for ICT professionals that many SMEs cannot afford.

Socially, North Macedonia has successfully built a robust digital infrastructure, with widespread internet connectivity. Yet, a significant portion of the population lacks the basic digital skills to leverage this access for personal or professional advancement. This disconnect between infrastructure and competence creates a risk of social exclusion, particularly for older and vulnerable populations. Similarly, while the government has prioritized the digitalization of public services, their low adoption rate reflects a broader issue of public trust in state institutions, a legacy of historical governance challenges.

From an innovation perspective, North Macedonia is classified as an "Emerging Innovator," demonstrating strong, long-term progress in its innovation performance. However, a detailed examination reveals a critical inefficiency: the country produces less innovation outputs relative to its level of innovation investments. This suggests that its innovation model is one of digital adaptation—adopting and applying existing technologies to improve efficiency—rather than one of digital creation, which involves developing new-to-market products and services.

⁵⁴ European Commission. Commission Staff Working Document: North Macedonia 2024 Report. SWD (2024) 693 final. Brussels: European Commission, 30 October 2024. https://enlargement.ec.europa.eu/document/download/5f0c9185-ce46-46fc-bf44-82318ab47e88_en?filename=North+Macedonia+Report+2024.pdf.

a) Economic

North Macedonia's economic landscape presents a mixed picture of gradual progress amid persistent structural challenges. The country's nominal GDP reached USD 16.7 billion in 2024, translating to a GDP per capita of USD 9,100, which remains below the global average of approx. USD 13,600. This economic positioning reflects the ongoing development trajectory of a country that continues to bridge the gap between its post-socialist heritage and modern market economy aspirations.

North Macedonia's labor market showed signs of improvement in 2024, with the employment rate rising to 45.8%. However, this **still lags considerably behind the EU-27 average** of 75.8%. Overall unemployment fell to 12.4%, while joblessness among individuals with higher education decreased sharply by 15.4% compared to the previous year. Despite this progress, **youth unemployment** (ages 15–24) **remains elevated at 29%**. In total, the labor force in 2024 counted 792,779 people, of whom 688,296 were employed. Unemployment remains persistently high at through a figure that may be inflated due to the **substantial informal economy**, estimated to constitute between 20 and 45 percent of GDP. This shadow economy presents both a challenge and an opportunity for digitalization efforts, as formal digital systems could potentially capture and legitimize economic activities currently operating outside official channels.

In January 2025, the **average net monthly salary** in North Macedonia stood at 43,050 denars, or roughly €730. Despite steady wage growth, this remains well below the averages in neighboring countries—€923 in Bulgaria, €1,318 in Croatia, and €1,225 in Greece. The **Information and Communication sector recorded the highest earnings**, with salaries reaching about 78,000 denars (**€1,300**).

This **gap between overall national wages and ICT-sector salaries** highlights a structural challenge for the economy. On the one hand, the high pay in ICT acts as a strong pull factor, attracting and retaining skilled professionals. On the other hand, most SMEs cannot match these salary levels, limiting their ability to recruit and keep the digital talent needed for transformation. As a result, a dual economy risks emerging: a small group of competitive, digitalized firms capable of offering high wages, and a much larger base of traditional SMEs that lag behind due to limited resources and human capital.

The issue, therefore, is not a lack of awareness or willingness **among SMEs** to embrace digitalization, but rather the **imbalance in resources and workforce capabilities**. Bridging this gap is essential if North Macedonia is to enhance productivity, raise wage levels, and move closer to European Union standards.

As of 2023 **North Macedonia's economy is dominated by Micro, Small, and Medium-sized Enterprises** (MSMEs), which made up **98.5% of all registered businesses** and were responsible for **over half of the country's employment (54.8%)**. The country's 68,004 active businesses generated a total turnover of 2.08 trillion denars and a value added of 445 billion denars. Within the Skopje region, the business environment in 2023 was primarily composed of micro-enterprises. Of the 28,531 businesses in the area, the vast majority (88.4%) were micro-enterprises with fewer than 10 employees. Small businesses accounted for 8.7% of the total, while medium-sized enterprises made up 2.3%.

The institutional response to SME digitalization challenges has been robust and strategically focused. The European Bank for Reconstruction and Development (EBRD) and European Union

have launched pioneering loan programs specifically designed to support SME digitalization, representing first-of-its-kind initiatives aimed at boosting competitiveness through innovation, sustainability, and inclusivity. This financial infrastructure creates the necessary foundation for SMEs to invest in digital technologies and transform their operational capabilities.

b) Social:

The social dimension of SME digitalization in North Macedonia operates within the broader context of regional development patterns. **Standards of living** across Western Balkan economies, including North Macedonia, **remain substantially below those of OECD and European Union countries**, though the developmental gap is gradually narrowing. This closing gap suggests that **systematic efforts, including SME digitalization initiatives, are contributing to improved socioeconomic conditions.**

North Macedonia has made significant strides in providing digital access to its population. **Approximately 80% of the population is connected to the internet, and the country ranks 30th globally for mobile broadband speeds.** This advanced digital infrastructure is a key strength and a foundational element for a digital society. Despite this widespread connectivity, a significant digital divide persists, not in access, but in competence. According to the UNDP's Digital Readiness Assessment, North Macedonia faces a considerable digital skills gap compared to the European Union. **Only 32% of its population has basic or intermediate digital skills**, far below the EU average of 56%. Even more concerning, **just 3% possess advanced digital competencies. This skills' gap disproportionately affects older and vulnerable populations**, who are at risk of being left behind by the digital transformation. The most profound social challenge, therefore, is not a lack of digital "hardware" but a deficiency in the human "software" needed to leverage this technology. **The internet is accessible, but for a large segment of the population, it is not an effective tool for social or economic advancement due to a lack of foundational skills.**

This disconnect suggests that digitalization, if not managed inclusively, can be a basis for social exclusion. While it offers the potential for equal opportunities, its benefits will not be universally shared unless concerted efforts are made to improve digital literacy among all citizens, particularly those in marginalized groups. The path forward requires a policy shift from merely building infrastructure to investing in human capital, ensuring that all citizens can participate meaningfully in the digital economy and society.

c) Innovation:

North Macedonia is categorized as an "**Emerging Innovator**" according to the **European Innovation Scoreboard (EIS) 2025**⁵⁵. The country's performance, however, **is below the average of its peer group**, at 40.0% of the EU average in 2025, and it ranks **34th among EU and neighbouring countries**. The country has shown a positive trend over the long term, with its score increasing by 9.2 percentage points since 2018, but it also experienced a **slight decline of 0.8 percentage points from 2024 to 2025**. This finding seems to contradict the claim of "the fastest growth (+11.7 points)" as a non-EU country in the 2024 report. This apparent contradiction is likely due to methodological or data differences, but it highlights that **while North Macedonia**

⁵⁵ European Commission. European Innovation Scoreboard 2025: Country Profile — North Macedonia. Brussels: Directorate-General for Research and Innovation; Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, 2025. https://ec.europa.eu/assets/rd/eis/2025/ec_rtd_eis-country-profile-mk.pdf

has demonstrated strong, long-term progress, its path is not linear and is subject to recent fluctuations.

According to the Scoreboard **the country performs well in non-R&D innovation expenditures**, which demonstrates a high propensity for firms to adopt existing technologies and a notable increase in high-tech exports. It has also shown strong growth in its share of foreign doctorate students, a positive sign for human capital development.

On the other hand, **the country performs poorly in areas related to R&D and finance**. Venture capital expenditures are low, and there is a significant **lack of direct government support for business R&D**. Furthermore, **the country ranks at the bottom for sales of new-to-market and new-to-firm innovations**, indicating a critical gap in converting innovation activities into commercially successful products.

Another perspective similar to this is the **Global Innovation Index (GII) Perspective**⁵⁶. The Global Innovation Index (GII) 2024 offers a complementary perspective, **ranking North Macedonia 58th among 133 economies**. A key finding of the GI report is that **the country "produces less innovation outputs relative to its level of innovation investments"**. This is evidenced by its higher rank in innovation inputs (60th) than in innovation outputs (63rd).

This is arguably the most significant observation regarding North Macedonia's innovation ecosystem. **The country is capable of investing in the foundations of innovation** (such as infrastructure (ranking 43rd), business sophistication (52nd), and attracting foreign direct investment), **but it struggles to convert these investments into high-value outcomes** like patents, creative outputs, or new-to-market products. This is further substantiated by its low scores in venture capital and sales of new innovations, as noted in the EIS report.

The country's innovation model appears to be one of **digital adaptation rather than digital creation**. Macedonian firms are successfully adopting digital tools to streamline their existing operations and processes, leading to improvements in efficiency and productivity. This is reflected in the strong performance in non-R&D innovation expenditures and high-tech exports, which often involve manufacturing of components rather than the creation of new products. To ascend the global innovation ladder, North Macedonia must shift its focus from merely absorbing and applying existing technologies to fostering an ecosystem that can conceive, develop, and commercialize new, proprietary innovations that are unique to the market.

2.5. Good Practices and Recommendations

Highlight the successful regional policy instruments that can serve as good practices and have a transregional transfer and policy improvement potential.

Since 2020, North Macedonia has launched a coordinated set of policies and programs to accelerate the digital transformation of its small and medium enterprises (SMEs). These efforts include public grants, innovation hubs, strategic roadmaps, and blended finance models co-developed with international partners.

⁵⁶ World Intellectual Property Organization. *Global Innovation Index 2024: North Macedonia*. Geneva: WIPO, 2024. <https://www.wipo.int/edocs/gii-ranking/2024/mk.pdf>

This brief synthesizes the most effective practices and draws actionable lessons for national policymakers and international stakeholders seeking to promote SME digitalisation.

Table 6: Good practices

Title of the Good Practice	GP Description
<p>GP 1: Merging the Fund for Innovation and Technology Development (FITD) and the Agency for Entrepreneurship into the Agency for Innovation, Scientific and Technological Development and Entrepreneurship (INOVA)</p>	<p>The transition from the Fund for Innovation and Technological Development (FITD) to the newly established Agency for Innovation, Scientific and Technological Development and Entrepreneurship (INOVA) represents a significant institutional reform aimed at improving the governance and delivery of innovation and SME support policies in North Macedonia. The merger integrates the functions of FITD and the Agency for Promotion of Entrepreneurship (APPRM) into a unified structure designed to streamline services, eliminate duplication, and ensure a more coherent policy framework for innovation, entrepreneurship, and digital transformation.</p> <p>Previously, the innovation ecosystem was characterised by fragmented mandates, limited inter-institutional coordination, and overlapping financial instruments that often resulted in inconsistent or delayed support to SMEs. This institutional dispersion hindered long-term strategic planning, especially in areas such as digital transformation, where coordinated support between innovation finance, technology adoption, and entrepreneurship development was essential.</p> <p>With the establishment of INOVA, the government has committed to creating a single entry point for SMEs, startups, and research actors to access innovation financing, digitalisation support, and advisory services. The new agency promises stronger alignment between science, technology, and enterprise policies, as well as the introduction of improved quality control, monitoring mechanisms, and professionalised management practices. It is also expected to modernise the legal and policy base for innovation, promote digital and green transitions, and establish new infrastructure such as a national science and technology park.</p>
<p>GP 2: Establishment of the Ministry of Digital Transformation (MDT)</p>	<p>North Macedonia’s Ministry of Information Society and Administration (MISA) was reorganised in 2024–2025 into the dedicated Ministry of Digital Transformation (MDT), as part of a broader government restructuring that separated digital policy from public-administration reform and transferred staff and functions accordingly. This created a clear, single policy owner for digital development, while a separate Ministry of Public Administration took over administrative-reform functions.</p> <p>Positioned as the government’s central body for digital development, MDT’s mission and portfolio now explicitly cover nationwide digital policy, digital skills, cybersecurity and data protection coordination, and the rollout of secure, efficient e-services for citizens and businesses—including platforms such as the national e-services portal (uslugi.gov.mk), the interoperability platform, and the government-wide electronic document management system (eDMS). This consolidation addresses previous fragmentation by unifying strategic direction and delivery capacity for digital tools that lower administrative burdens and</p>

	<p>transaction costs for SMEs (e.g., fully online procedures, interoperable registries, and secure data exchange).</p> <p>Independent assessments note MDT's coordinating role for service digitalisation and highlight capacity gaps that the reorganisation is designed to remedy (governance, resources, implementation pace). As a good practice for SME digital-transformation policy, the re-scoped ministry strengthens accountability and alignment with EU digital priorities, links horizontal enablers (interoperability, eID, secure data flows) with front-end services used by firms, and provides a clearer interface for donor and EU programmes (e.g., Digital Europe) to support SME uptake of digital tools.</p>
<p>GP 3: Strategy for ICT Development SMART/MK 2030</p>	<p>The transition from the Ministry for Information Society and Administration (MISA) to the Ministry for Digital Transformation (MDT) inherently represents a policy good practice, as it signals a shift from a passive, administrative focus to an active, economic mandate. While the prior ministry often focused on establishing the "Information Society"—meaning basic infrastructure, access, and inward-facing e-government for state efficiency—it frequently lacked the strategic mechanisms necessary to accelerate private sector change. The "Strategy for ICT Development: SMART/MK 2030" is a good practice precisely because it embodies this new, outward-looking approach, serving as a comprehensive roadmap that directly addresses the needs of SMEs. Unlike older, more general strategies, SMART/MK 2030 employs a targeted "push-and-pull" mechanism: it pushes SMEs toward digitalization through specific, measurable targets in Pillar 4, such as aiming for over 70% of SMEs to reach a basic level of digital maturity and encouraging the adoption of advanced technologies like AI and Big Data. This level of detailed, private-sector-focused ambition ensures that subsidies and policies are aimed at modernization, not just maintenance. Simultaneously, the strategy pulls the market by investing heavily in the digital ecosystem, specifically through Pillar 2, which targets 70% of the population possessing basic digital skills. By increasing national digital literacy and building a simplified, secure e-governance platform (Pillar 3), the strategy lowers the external barriers (skills gap, administrative friction) for SMEs, making digital investment a more logical and profitable business decision. This integrated, outcome-driven, and long-term vision makes SMART/MK 2030 a gold standard for national digital transformation policy.</p>
<p>GP 4: Grants by the Fund for Innovation and Technological Development</p>	<p>Co-Financed Innovation Grants - The core initiative involves offering competitive grants and financial support through a public-private co-investment model, operational since 2014 and significantly intensified in the 2020s. This scheme provides funding to SMEs and start-ups for implementing innovative projects, adopting new technologies, and deploying digital solutions. Specifically, the Fund for Innovation and Technology Development (FITD) offers grants that match firms' own investments, covering costs for areas like R&D, technology equipment, and software to boost their overall productivity and competitiveness. Over more than a decade, this effort has yielded substantial results: over 1,100 projects have been supported with a total investment of €138 million, comprising approximately €86 million in public funds from FITD and €52 million co-invested by the participating companies. This injection of capital has successfully cultivated an innovation culture, preparing firms for the global marketplace and resulting in a notable 12-</p>

	<p>place improvement in North Macedonia's Global Innovation Index ranking in 2023. A key success indicator is the growth of several tech start-ups that were initially supported by FITD before going on to attract private venture capital.</p> <p>The "Digital Transformation to Innovation" initiative - is a targeted, sector-specific public call launched by the Fund for Innovations and Technological Development (FITR) on December 29, 2022, to spur competitiveness and innovation among Small and Medium Enterprises (SMEs) in the agri-food and tourism sectors. Co-designed and executed in partnership with the Swiss-funded IME Program (which contributes 6.15 million denars) and the INOFEIT Digital Innovation Hub (DIH), the program provides competitive financial support for adopting digital solutions such as precision farming, e-commerce, and digital marketing tools. This support is structured as a co-investment, offering grants of up to 50% of a project's total budget (up to 1.845 million denars for medium enterprises), requiring the company to match the investment. The challenge was strategically developed in the wake of the COVID-19 and energy crises to help traditionally low-digitalized sectors align with European Green Deal and Digital Compass objectives. While the program leverages proven models to upgrade dozens of SMEs and strengthen the capacity of local digital innovation hubs, its sector-specific pilot nature limits its immediate scope. Future success will depend on the effective implementation of these changes—potentially through post-grant mentoring via the hubs—and the subsequent expansion and institutionalization of these digitalization incentives into broader national programs.</p>
<p>GP5: EBRD–EU “Go Digital in Western Balkans” Programme</p>	<p>The EBRD–EU “Go Digital in Western Balkans” Programme is a regional, ongoing initiative launched in 2025 that utilizes a blended finance model to drive the digital and green transition of SMEs. Implemented through the European Bank for Reconstruction and Development (EBRD), the EU's Western Balkans Investment Framework (WBIF), and local partner banks like Sparkasse and NLB, the program provides dedicated credit lines combined with grants and advisory services. In North Macedonia, SMEs can access earmarked loans to purchase advanced digital and automation technologies and software. Upon successful implementation, firms receive a cash-back grant of approximately 10%, along with EU-funded technical assistance for project design. A key requirement is that at least 50% of the investment must involve "green" technology, linking digitalization with sustainability goals. Since its launch, the program has allocated credit lines totaling €4 million through Sparkasse Bank and €2 million through NLB Bank. Although initial uptake is modest, the program provides SMEs with a crucial incentive to lower the cost of digital upgrades and is expected to boost firm productivity and compliance with EU market standards. However, its current reach is limited by the number of participating banks and initial credit volume, and many micro or informally-run businesses may face difficulties meeting standard bank lending criteria, suggesting a need for increased scale and potentially simpler application processes to maximize its impact.</p>
<p>GP 6: Initiatives by Business Support Organizations</p>	<p>The collective activity of business support organizations in North Macedonia constitutes a strong example of good practice for SME digital transformation policies, as it establishes a layered support structure that complements national strategy with practical, hands-on, and financially</p>

supported implementation. This approach systematically addresses the key barriers of skills, strategy, and financing, moving SMEs from digital awareness to operational digital maturity.

The initial phase of this good practice involves strategic diagnosis and planning, often subsidized to encourage participation. For example, the ICT Chamber of Commerce (MASIT) implemented a digital transformation support project, funded by the Ministry of Economy's 2019 program. This initiative's design—which involved a free online self-assessment tool and the provision of 30 expert analysis vouchers—was a low-cost, high-impact model for helping SMEs across key sectors like tourism, agriculture, and manufacturing to evaluate their current state and define their digital priorities between December 2019 and March 2020. This resulted in over 30 SMEs obtaining tailored diagnostics and strategic plans, a foundational indicator of commitment to structured transformation.

Building on this diagnostic foundation, organizations also provide intensive resources for implementation and sustained growth. The Center for Digital Transformation (GoDigital) focuses on mobilizing both financial and consulting expertise. It provides successful SMEs with co-financing vouchers ranging from €6,000 to €10,000 to fund the implementation of their digital strategies and connects businesses with local solutions through a dedicated Digital Products Catalog. Furthermore, the center forges partnerships, such as with VISA, to distribute free digital tools to micro-companies, demonstrating a segmented approach to support based on business size and need. Concurrently, the Association for E-commerce (AETM) targets the operational side, offering specialized training that is directly tied to market activation. Its success is evidenced by tangible indicators like supporting the launch of over 60 new e-stores, which represents a shift from theoretical knowledge to active participation in the digital economy.

Finally, the ecosystem is strengthened by organizations dedicated to policy alignment and regional integration. The Business Confederation of North Macedonia (BCNM) actively participates in international projects like DIGITRANS (ADRION Regional Policies for Digital Transformation of SMEs). BCNM's engagement aims to improve regional strategic frameworks by utilizing a quadruple helix model (connecting industry, academia, government, and civil society) to foster transregional cooperation and knowledge exchange. This work ensures that domestic support mechanisms are aligned with European standards and address broader regional innovation gaps, providing a critical policy superstructure that enhances the overall effectiveness and replicability of the grassroots initiatives.

Recommendations

To consolidate recent gains, North Macedonia should prioritize scaling proven instruments, improving program coordination, and ensuring broader access to digitalization support.

The Fund for Innovation and Technology Development (FITD) has been a central tool for supporting innovation and digital transformation among SMEs in North Macedonia, offering both valuable results and important lessons for improvement. Its co-financing model successfully mobilized over €138 million in combined public and private investment, supporting more than 1,100 projects and helping catalyze a generation of start-ups and youth-led innovation. Early on, FITD was celebrated as a pioneering initiative in the Western Balkans, recognized for shifting public funding toward high-value entrepreneurship. Yet as the fund expanded, it suffered from mission drift, weakened oversight, and allegations of political favouritism - culminating in an internal audit that exposed over €3 million in misused funds and triggered government-led restructuring. While FITD's model remains sound in principle - blending public grants with private risk - it is now clear that such instruments demand strong governance, transparency, and regular course correction to sustain legitimacy. Looking forward, any successor institution must retain the fund's catalytic function but with **tighter safeguards, clearer targeting, and stronger outreach to traditional, rural, and micro-enterprises that have historically struggled to access support**. Rebuilding credibility will be as important as renewing impact.

Another key priority for advancing SME digital transformation in North Macedonia is the **better integration of support services, financing instruments, and technical assistance** into a coherent, accessible system. While programs such as the Fund for Innovation and Technology Development (FITD), the European Digital Innovation Hub (EDIH), and EBRD-backed credit lines each offer valuable resources, SMEs often struggle to navigate them independently. This fragmentation leads to missed opportunities, administrative fatigue, and slower uptake—particularly among smaller firms with limited capacity to manage multiple applications and actors.

The recent launch of **INOVA**, a newly formed agency emerging from the merger of FITD and the Agency for Entrepreneurship Support, represents a promising step toward addressing this gap. With a mandate to unify innovation, entrepreneurship, and technology support under one institutional roof, INOVA has the potential to streamline services, coordinate funding and advisory tracks, and offer SMEs a single point of entry to digital and innovation-related assistance. If properly implemented, INOVA could serve as the coordinating backbone for bundled support pathways, starting with a digital readiness assessment (e.g., via EDIH or an affiliated diagnostic tool), followed by tailored referrals to grants, subsidized loans, mentoring, and digital solution providers.

Such an integrated model would reduce administrative burden, align incentives across institutions, and help ensure that SMEs move from interest to actual implementation more efficiently. It would also improve public resource allocation by linking diagnostics with measurable outcomes and enabling cross-institutional data sharing. For INOVA to fulfill this role effectively, it will need **clear operational protocols, digital infrastructure for case tracking, and strong inter-ministerial coordination—particularly with the Ministries of Economy, Digital Transformation, and Education**. Done well, it could become a flagship example of how to embed coherence and efficiency into the architecture of SME support in a digital age. The newly established Ministry of Digital Transformation (2024) presents a unique opportunity to strengthen coordination across institutions. It should assume a leading role in tracking and evaluating the digital maturity of SMEs by developing a clear set of outcome-based indicators, such as the percentage of SMEs using digital platforms, customer relationship management (CRM) systems, cloud services, or e-commerce. Public dashboards showing progress by region and sector would improve accountability and guide targeting.

The **SMART MK2030** strategy is a key milestone in North Macedonia's digital policy landscape, setting out a broad vision aligned with the EU's Digital Decade goals. However, the strategy was long in the making, with years of consultation and drafting contributing to delays in aligning public programs around a shared digital agenda. By the end of 2025, although the strategy is formally in place and the Ministry for Digital

Transformation has been established to support its rollout, many of its concrete measures—particularly those aimed at accelerating digital transformation in SMEs - still lack clear budget allocations. This absence of financial specification makes it difficult to assess the feasibility, scale, and prioritization of proposed actions, and weakens the strategy's utility as a tool for mobilizing domestic and international support. For SMART MK2030 to move from vision to execution, it will be essential that **all SME-targeted measures are backed by transparent, dedicated funding commitments and publicly available implementation plans.**

While the **Go Digital in the Western Balkans** program offers an innovative model for blended finance—combining loans, grant incentives, and technical assistance—it currently reaches only a limited segment of North Macedonia's SME landscape. The scale remains constrained by the small number of participating banks and the modest initial volume of on-lending, which limits visibility and uptake across sectors. To unlock broader impact, the program should prioritize expanding its network of partner financial institutions and increasing the available credit envelope, with particular attention to underserved regions and industries. Additionally, some microenterprises and informally operated businesses continue to face difficulties in accessing commercial lending due to collateral requirements or limited financial histories. To address this, the program should consider simplifying application procedures, offering smaller ticket-size products, and introducing complementary guarantee mechanisms to lower the entry threshold for higher-risk but high-potential digital investments. As the program matures, rigorous monitoring of outcomes—such as increases in productivity, digital tool adoption, and business formalization—will be essential not only to justify scaling but also to build a robust evidence base for the future of blended finance in SME digital transformation.

North Macedonia's experience shows that **empowering business support organizations can significantly enhance the reach and effectiveness of SME digital transformation policies.** Initiatives like MASIT's subsidized diagnostics, GoDigital's co-financing vouchers and vendor networks, and AETM's e-commerce activation programs demonstrate how these actors can translate strategy into action through tailored, hands-on support. Their ability to segment services by firm size and readiness, mobilize private partnerships, and link local efforts to regional frameworks (e.g. BCNM's DIGITRANS) makes them valuable delivery partners. To maximize impact, policymakers should integrate such intermediaries into national programs with clear funding streams, shared targets, and platforms for coordination.

Lastly, **addressing the digital skills gap must become a core pillar of economic policy.** While current initiatives have targeted tech startups and youth employment, there remains a shortage of digitally fluent workers across sectors. Embedding digital skills training into active labor market policies, vocational education, and SME development programs would help both firms and workers adapt to the demands of the modern economy.

North Macedonia's progress in institutional reform, digital policy development, and ecosystem-driven support for SMEs offers several transferable models that could benefit peer economies in the Western Balkans and beyond. A key recommendation is to promote structured transregional learning through formal cooperation platforms that emphasize institutional design and operational integration. For example, the consolidation of overlapping support functions into the newly established agency INOVA—merging FITD and the Agency for Entrepreneurship—can serve as a model for other countries seeking to streamline fragmented innovation ecosystems. Regional exchange on the formation, governance, and rollout of such unified institutions could help partner governments avoid duplication, build trust with SME stakeholders, and increase the coherence of innovation and digitalisation policy. Similarly, the Ministry of Digital Transformation's creation as a single policy anchor for e-services, interoperability, and digital skills could be replicated by other governments seeking to align horizontal digital enablers with SME support delivery.

In addition, targeted transregional programs should emphasize the role of intermediary actors, such as business support organizations (BSOs), in bridging top-down strategies with SME-level impact. North Macedonia's layered ecosystem shows how BSOs can deliver tailored diagnostics, mobilize blended financing, and activate digital marketplaces. Regional replication would benefit from shared diagnostic tools, pooled vendor platforms, and joint voucher schemes that lower costs and expand reach. Moreover, aligning donor-funded digitalization pilots across multiple countries with common reporting metrics and evaluation frameworks would enhance comparability, accelerate scaling, and ensure that successful models do not remain siloed within national borders. Ultimately, transregional transfer must be backed by institutional mandates, peer-to-peer mechanisms, and donor coordination that transforms isolated good practices into systemic improvements across the region.

2.6. Data Infrastructure

What data are available to assess the digitalisation and competitiveness of SMEs in your region (strategies, action plans, analyses, statistics, etc.)? What are the missing data that would be needed for a quality assessment of the situation?

Available Data and Analytical Sources

North Macedonia's policy ecosystem benefits from a range of data sources that provide partial insights into the digitalisation and competitiveness of its SME sector. Official statistics from the State Statistical Office (SSO) form the foundation, capturing basic enterprise indicators such as broadband access, computer usage, and firm size. For instance, 98.9% of enterprises with 10 or more employees had internet access in 2024, and SMEs account for 98.5% of all firms, 54.8% of employment, and 46.8% of value added. Yet these statistics largely reflect infrastructure and structural characteristics—they do not capture transformation or competitiveness outcomes.

Complementary qualitative and survey-based inputs have been produced through strategic documents and donor programs. The National SME Strategy 2018–2023 and the SMART Specialisation Strategy included digitalisation as cross-cutting goals. The SMART MK2030 strategy, while forward-looking, sets a target of 70% SME digital maturity but provides no baseline measurement or budgeted measures for SME digitalisation. Likewise, the forthcoming ICT Strategy MK2030 acknowledges the relevance of SME support but does not include allocated funds or specified programs to deliver it. Business support actors, such as the GoDigital Center, EDIH-INNOFEIT, and the Association for E-Commerce (AETM), provide their own implementation data—such as number of digital diagnostics conducted, e-commerce stores launched, or vouchers distributed. International indices, including the Global Innovation Index and the upcoming 2024 OECD SME Policy Index, offer benchmarking opportunities. These have noted North Macedonia's modest gains in digital infrastructure and startup support.

Notably, the Business Confederation of North Macedonia (BCNM) has played a leading role in evidence production. In 2022, BCNM published a comprehensive analysis of the enabling environment for SME digital transformation, identifying ecosystem assets, gaps in services, and alignment needs with EU standards. A follow-up study in 2023 expanded on these findings, including SME perspectives from across sectors and regions. It remains one of the most systematic assessments to date. However, while such studies provide valuable qualitative depth,

they remain non-governmental and episodic. There is no centralized national body mandated to consolidate these findings or issue regular reports on SME digitalisation status.

Missing Data, Gaps in Monitoring, and Structural Blind Spots

Despite this diversity of inputs, North Macedonia lacks key elements required for robust and policy-relevant tracking of SME digitalisation. First and foremost, there is no national digital maturity baseline or index for SMEs. While organizations like EDIH and MASIT conduct diagnostics, these are limited in scope and frequency. There is no data on the adoption of advanced technologies like cloud computing, CRM, ERP systems, cybersecurity protocols, or AI-based tools across different SME segments. Similarly, there is no longitudinal data capturing how digital adoption affects competitiveness—such as productivity, export readiness, innovation output, or firm survival.

Institutional monitoring remains heavily output-focused and siloed. Ministries and implementing agencies (e.g., Ministry of Economy, Ministry for Digital Transformation, FITD, and INOVA) typically report on the number of beneficiaries reached or activities implemented. Yet they do not report on whether key performance indicators (KPIs) from annual programs are achieved—a critical weakness in accountability. Where KPIs do exist, they are often vague, not disaggregated by sector or region, and not publicly monitored. This undermines the ability to evaluate policy performance or adjust interventions based on results.

Another serious gap is the lack of disaggregated and inclusive data. There is insufficient visibility into how digitalisation varies across firm size (particularly for microenterprises), sectors (e.g. agriculture, tourism, retail), regions (especially outside Skopje), or ownership profiles (e.g. gender). Without such segmentation, policy instruments risk overlooking marginalized or underserved segments, including rural SMEs or informal enterprises.

Finally, the data produced from programs—particularly donor-funded projects—is not systematically integrated into national databases or used for policymaking. Institutions lack a shared monitoring and evaluation (M&E) framework or interoperable data platforms. Even highly structured programs like the Go Digital blended finance line or FITD grants have no standardized system to track firm outcomes over time. As such, there is no way to assess whether investments in digitalisation translate into sustained competitiveness gains or whether they reach their intended audiences.

Implications and Recommendations

These data gaps have direct implications for the credibility and effectiveness of digital transformation policy. Without a shared set of indicators, consistent impact tracking, or publicly available reporting on results, strategies like SMART MK2030 or the ICT Strategy 2030 risk becoming aspirational rather than actionable. Furthermore, the absence of outcome-level measurement makes it impossible to justify program scale-up, align funding with proven approaches, or course-correct when programs underperform.

To address these challenges, North Macedonia should prioritize the development of a national SME digital maturity survey, administered on a recurring basis (every 2–3 years), with coverage across sectors, regions, and business types. It should be supported by a cross-institutional KPI

framework aligned with national strategies and embedded in annual program reporting. Ministries should be required to report on outcome KPIs, not just activities or disbursements. Finally, the government should establish an annual public report or observatory to consolidate SME digitalisation data—building on the analytical precedent set by BCNM and enabling better coordination, transparency, and regional learning.

3. Summary

Summary of key findings: What is the nature and significance of digitalisation of SMEs in your region? What are the main policy instruments addressing digital transformation of SMEs, what are the main challenges (obstacles, lacking elements) and needed measures to solve them? What is the data infrastructure to assure the quality regional analysis and assessment of digital transformation of SMEs?

North Macedonia, a **landlocked upper-middle-income country** in Southeast Europe, is an **official EU candidate** whose development agenda is strongly guided by **European integration**. This direction is embedded in the **National Development Strategy (NDS) 2024–2044** and supported by **IPA III** and other EU instruments. **Digitalisation** is recognized as a key enabler of competitiveness, sustainability, and inclusion. The economy, valued at **€15–16 billion in 2025**, is driven by **manufacturing (30.4% of GDP)**, trade, and construction, with **MSMEs making up 98.5%** of all enterprises and employing over half of the workforce, though productivity remains far below EU levels. The **ICT sector** continues to expand (2.5–8% annually), employing nearly **24,000 people** and generating **€1.655 billion in revenues** in 2024. Digital adoption is widespread, with **98.9% of firms** having internet access and **99.3% using computers**, though advanced e-commerce and automation remain uneven.

In education, **52,316 students** were enrolled in 2023/2024 (a 2.8% decline), with **women comprising 58.7%** and **78% attending public universities**. **Tertiary attainment (37.7%)** among 25–34-year-olds is rising but below the EU average. Despite relatively strong adult learning participation, **only 32% of the population has basic digital skills**, contributing to the skills gap in SMEs. The **National ICT Strategy 2023–2027**, **EMIS**, and expanded **dual VET programs** (covering 84% of VET schools) aim to bridge this gap and better align education with labor market needs.

The **labor market** shows steady recovery but still trails EU standards: the **employment rate reached 45.8%** in 2024 versus the **EU average of 75.8%**, while **unemployment fell to 12.4%**. Youth unemployment remains high at **29%**, though graduate unemployment dropped by **15.4%**. The **average monthly wage** in 2025 stood at **€730**, below Bulgaria (€923), Croatia (€1,318), and Greece (€1,225). The **ICT sector offers the highest pay—around 78,000 denars (€1,300)**—far above the national average, while hospitality remains lowest at **€450**. The **job vacancy rate (1.93%)** is below the euro area's 2.4%, with strong demand in **hospitality (3.47%)** and moderate in **ICT (1.71%)**, reflecting stable but non-saturated digital labor demand.

Small and medium-sized enterprises (SMEs) are the **backbone of North Macedonia's economy**, yet many remain **unprepared for full digital transformation**. Recognizing this, the

government has elevated **digitalisation to a national priority** through the **National Development Strategy (NDS) 2024–2044**, which identifies a “*Sustainable, Innovative and Competitive Economy*” as a core pillar. The **National SME Strategy 2018–2023** established early frameworks for innovation and entrepreneurship, supported by the **Agency for Promotion of Entrepreneurship (APPRSM)** and **FITD**, both instrumental in financing SME innovation—contributing to a **53% increase in innovative SMEs between 2014 and 2020**. However, the 2018–2023 strategy has expired, and the **draft National SME Strategy 2025–2030**, pending adoption, introduces a stronger focus on **digital and green transformation**, including objectives for **AI, IoT, cloud adoption, digital banking, e-commerce, and public e-services**. In 2025, institutional reform merged **FITD and APPRSM** into the **Agency for Innovation, Scientific-Technological Development and Entrepreneurship**, creating a unified body to coordinate SME and innovation policy. Parallely, the **Ministry for Digital Transformation**, established in 2024, launched the **ICT Development Strategy: SMART/MK 2030** strategy, positioning SMEs as the **central engine of the digital economy**. The strategy promotes **vouchers, training, mentorship, and financial incentives** to accelerate technological upgrading and competitiveness. Aligned with the **EU’s Digital Europe Programme** and frameworks like the **NIS 2 Directive** and **Digital Services Act**, North Macedonia’s SME digitalisation agenda reflects a **dual drive for EU convergence and sustainable domestic growth**, ensuring coherence with European standards while reinforcing national resilience and innovation capacity.

The **Programme for the Development of Entrepreneurship and Competitiveness of SMEs**, managed annually by the **Ministry of Economy**, defines national priorities and funding for SME growth and innovation. Since its **restructuring in 2022**, it has placed SMEs at the centre of economic policy, aligning with **EU frameworks**. The budget grew from **€0.2 million in 2017** to **€1.3 million in 2024**, before dropping to **€0.3 million in 2025**—a **76% decrease**. Despite this, the **2025 programme marks a breakthrough**, making **digital transformation a standalone priority** through the measure “**Subsidies for SME digital transformation**,” which co-finances **40% of costs (up to €2,500)** for acquiring or integrating digital technologies. Around **30% of the 2025 budget** is now dedicated to SME digitalisation, directly supporting the **ICT Development Strategy: SMART/MK 2030** strategy and forthcoming **National SME Strategy 2025–2030**, helping firms adopt practical digital tools and improve competitiveness within **EU value chains**.

The **ICT Development Strategy: SMART/MK 2030 Strategy** is North Macedonia’s **flagship roadmap for digital transformation**, aligning national priorities with the **EU’s Digital Decade 2030** and the country’s **EU accession agenda**. Built around four pillars—**ICT infrastructure, digital competences and inclusion, e-governance, and business innovation and new technologies**—the strategy positions **SMEs as the core drivers** of the digital economy. It introduces a broad support framework starting in **2026**, including **advisory services, training programmes, voucher schemes, digital support portals, financial incentives, and mentorship initiatives** to raise SME digital maturity and competitiveness. A key measure promotes the **ethical and responsible use of artificial intelligence (AI)** among startups and ICT firms, ensuring alignment with the **EU AI Act** and international standards. Overall, Smart/MK seeks to create an **inclusive, innovation-driven digital ecosystem**, enabling SMEs to integrate

into **EU value chains**, adopt advanced technologies, and contribute to sustainable economic growth.

The **Fund for Innovation and Technological Development (FITD)** was North Macedonia's main instrument for **boosting SME innovation and digitalisation**, offering **grants, co-financing, and technical support** for startups and enterprises. Its schemes—such as **Startup/Spin-off, Commercialization, Technological Extension, and Accelerator Grants**—help firms adopt advanced technologies and bring innovations to market. Recent initiatives include the **Western Balkans Innovation Vouchers (2024)**, offering **€8,000 cross-border R&D vouchers** to SMEs for collaboration with research institutions, and the **Challenge “With Digital Transformation to Innovation” (2023)**, co-funded by **Switzerland's IME and INOFEIT DIH**, which supported **13 SMEs** in agri-food and tourism with up to **€29,900** for digital projects (AI, IoT, robotics). The **Skills Development and Innovation Support Project**, backed by a **€17.7 million World Bank loan**, strengthened FITD's institutional capacity and embedded these grant schemes as permanent tools for innovation.

North Macedonia has developed several **loan instruments** to help SMEs overcome financing barriers to digital transformation. The **EBRD's “Go Digital in the Western Balkans” (2025)** provides **affordable credit lines, EU-funded assistance, and incentives** for investments in automation and digital technologies, prioritizing green, regional, and women-led projects. The **Development Bank of North Macedonia** offers loans of **€5,000–€300,000** at **2.9% interest**, financing **IoT, robotics, software, and cloud solutions**. Regionally, the **EIB's Innovation and Green Transformation Facility (2026)** allocates **€187 million** to support **innovation, digitalisation, and green projects** through long-term blended finance. Together, these instruments combine **low-cost financing and advisory support** to accelerate SME digitalisation and align with the **ICT Development Strategy: SMART/MK 2030** and **EU integration** goals.

Since **2023**, North Macedonia has been **formally associated with the EU's Digital Europe Programme (DEP)**, gaining access to funding for **AI, cybersecurity, supercomputing, advanced digital skills, and broad digital adoption**. This participation enables SMEs, universities, and public institutions to join **EU-wide projects** and benefit from **European Digital Innovation Hubs (EDIHs)**. The country's first, **INNOFEIT EDIH**, launched in **2025** with a **€2 million budget** co-financed by the **EU and FITD**, provides SMEs and public bodies with **“Test Before Invest” facilities, AI and cybersecurity training, and consulting on digital investments**. Parallely, the **Interreg VI-A IPA Bulgaria–North Macedonia Programme (2021–2027)** strengthens **cross-border SME competitiveness** through **€100,000–€300,000 grants** for **digitalisation, technological modernisation, and market integration**. Collectively, these EU instruments embed North Macedonia in the **European digital ecosystem**, enhancing **SME innovation, skills, and competitiveness** while aligning national priorities with the **EU Digital Decade 2030** and **ICT Development Strategy: SMART/MK 2030** strategies.

North Macedonia's policy framework for SME digitalisation combines **broad strategic enablers**—such as the *ICT Development Strategy: SMART/MK 2030 Strategy*, participation in the *Digital Europe Programme*, and the establishment of *INNOFEIT EDIH*—with **targeted financial**

instruments like *FITD grants*, *MoE subsidy schemes*, and *DBNM/EBRD blended loans*. While this mix provides a solid foundation, its impact is constrained by **policy discontinuity**, **limited coordination**, and **volatile funding**. The expiry of the SME Strategy 2018–2023, delays in adopting the 2025–2030 successor, and the absence of budgeted measures under Smart/MK create uncertainty and hinder progress toward EU Digital Decade goals. Institutional overlap and frequent restructuring further weaken coherence, while most SMEs continue to self-finance digital projects due to low awareness, complex procedures, and insufficient loan uptake.

Beyond financing, **digital skills shortages**, **limited absorptive capacity**, and **weak public-sector demand** remain critical bottlenecks. Many SMEs lack trained personnel and managerial know-how to integrate new technologies effectively, and available upskilling initiatives—though promising—are small-scale and concentrated in urban areas. Public procurement rarely stimulates innovation, and connectivity gaps outside Skopje limit technology adoption. Collectively, these issues risk widening the divide between advanced and lagging firms. Addressing them requires adopting and funding the new SME Strategy, expanding SME-oriented finance and training, improving coordination, and using public-sector digitalisation and procurement as a driver for innovation—key steps to align with **EU Digital Decade 2030** and build a **competitive, inclusive digital economy**.

Regarding the **data infrastructure for assessing SME digital transformation**, North Macedonia relies on a mix of national and international sources. The State Statistical Office (SSO) provides official enterprise data and ICT usage statistics, complemented by Eurostat indicators and analyses by bodies like the World Bank, EBRD, and OECD. These sources offer valuable benchmarks (e.g. the UNDP digital readiness assessment and EU's SME reports provide insight into connectivity and skills levels). However, the report notes significant **data gaps** that constrain a quality regional evaluation of SME digitalisation. There is limited granular data at the regional level and a lack of comprehensive impact assessments of specific digital support programs. For instance, there is insufficient longitudinal data tracking SMEs' digital skills development and scarce statistics on barriers (such as how many SMEs attempt to access support and why some fail). These deficiencies make it difficult to fully gauge progress and pinpoint needs in each region. The **key finding** is that strengthening the data infrastructure – by collecting more detailed regional metrics, evaluating program outcomes, and monitoring SME digital readiness over time – is crucial for informed policy-making. Filling these data gaps would enable authorities to **better target interventions** and measure the success of digital transformation initiatives, ensuring North Macedonia's SMEs can fully thrive in the digital era while advancing the country's EU accession goals.

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