THE DIGITAL TRANSFORMATION OF SMALL AND MEDIUM-SIZED ENTERPRISES - OPPORTUNITIES AND PERSPECTIVES

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Abstract:

This paper addresses the need for digital transformation of SMEs in the Republic of Moldova as a predominant factor in ensuring the competitiveness of enterprises. The research aims to identify solutions for the digital transformation of SMEs in the Republic of Moldova to increase their competitiveness. At the same time, the need for digital transformation is punctuated by the changes that occur at a rapid pace in the external environment, which pressures SMEs to quickly adapt and integrate new information technologies into their activity, to increase competitiveness. From the need to face competitors, SMEs have to identify ways to innovate, optimize processes, and increase the human capital of their employees and thus raise their competitiveness. The research methodology focused on the use of the following research methods: analysis, synthesis, induction, deduction, abduction, and a few others. Finally, we can note that, at a national level, it is necessary to develop a digital transformation program for SMEs that would help organizations, through concrete activities, projects, and financial means, support and consultancy, in the effort to achieve competitiveness.

Key Words: *digital transformation, digitization, SME, competitiveness, information technologies.*

JEL classification: *L20, M51, O30, O31, O32*

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Introduction

The digital economy has taken over all fields of human activity and completely transformed them, embracing an active approach to make them more efficient. Therefore, implementing information technologies in business activities has become a dire necessity in the 21st century, a century defined by digitalization. The classical business management models have given way to new models of digital transformation.

Information technologies such as the Internet of Things, 5G, Big Data, Blockchain, and AI are helping companies achieve higher productivity and greater relevance on the market globally.

Content

The digitalization of SMEs provides a wide range of advantages. Nevertheless, it also involves certain vulnerabilities, as shown in Table 1.

Table 1. Advantages and vulnerabilities of the SME digitalization

Advantages	Vulnerabilities
Generating new products and services	Substantial alterations in terms of consumer demand
New flows of information and knowledge	Fast wear and tear of digital products
Digital interconnectivity	Acquiring digital skills by human resources
Easy access to clients and capital markets	Interconnection of different technologies
Optimizing processes	Cybersecurity

Source: developed by the authors of the present article

In the 21st century, the classic economy has given way to a strongly interconnected digital economy that, by default, favors intangible products. Information technologies are part of a sector that optimizes and streamlines the classical economy in all areas, being able to disseminate essential information promptly, regardless of the distance between the source and the beneficiary of the information. Technologies such as IoT, 5G, Big Data, Blockchain, and AI assist companies in getting a higher flexibility of the supply chain, contribute to increased data security, advance remote work capabilities, and automate processes. Combining these technologies leads to a digital change in terms of products, processes, and business models [6].

According to the report on public policies for SME digitalization, digitalization has a significant and transformative impact on the European Union [6]:

▪The ICT industry contributes 4% to EU GDP and employs more than 9.1 million people.

▪In the EU, the digital economy creates five jobs for every 2 offline jobs lost.

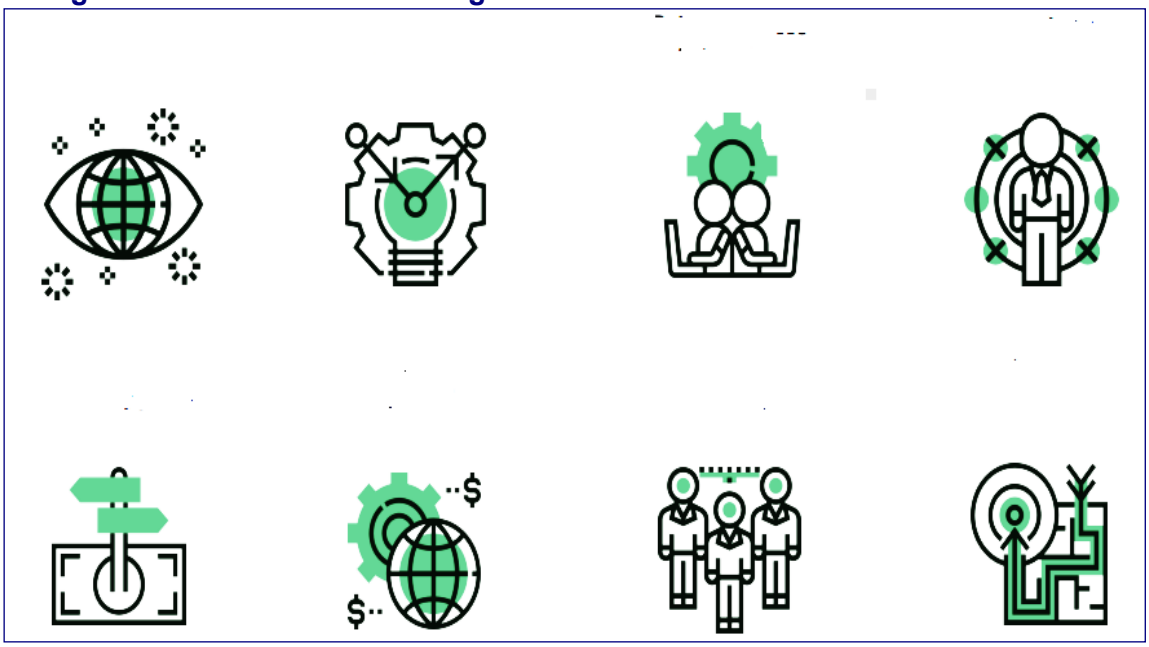
▪The digital economy of the EU is 12% higher by the year, and it is estimated that there are more mobile phone subscriptions than people in the EU.

▪It is also estimated that in the EU, half of the growth in the productivity of companies comes from investments in information and communications technology.

According to the World Economic Forum, in 2023, these are the technologies that are currently affecting and transforming the business environment, as shown in Figure 1.

The SMEs that wish to become more competitive and reach a higher level of strategic competitiveness must include within their activities modern technologies that help them optimize their processes, enhance the skills of their human resources, and overall improve the quality of their services and products. On the other hand, SMEs that implement information technologies have higher flexibility and capacity to adjust to the changes inflicted by the external environment.

Figure 1: Information technologies that transform the business environment



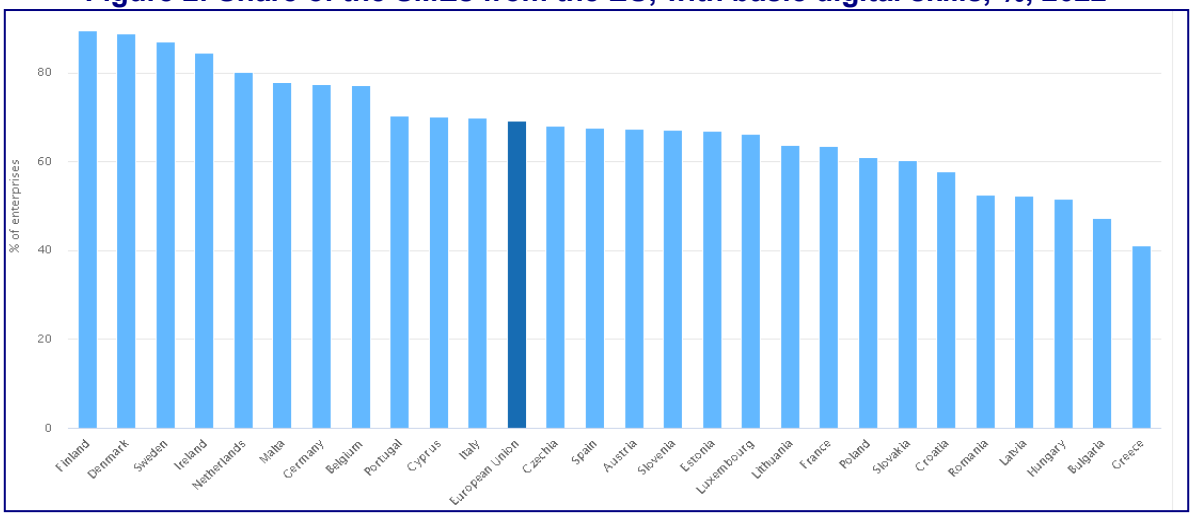
Source: Report on public policies for SME digitalization
Available: https://www.oirbi.ro/wp-content/uploads/2021/01/40Ready_Raport-OIR-_RO.pdf

Digitalization has expanded and accelerated at a higher pace in recent years, especially for SMEs. The revolution started by Industry 4.0 is not represented by technologies but by people. Nowadays, big companies in manufacturing industries are undergoing a profound digital change, aimed at streamlining increasingly complex production processes through new technological solutions to meet customer needs. [4].

The European Commission, through the agency of the Digital Agenda for Europe, associates digital competences with a modern economy, having the main strategic objective of promoting digital competences.

The analysis of the data provided by the DESI report for 2023 reveals that 70% of the SMEs from the EU have basic digital competencies in terms of the usage of information technologies. Accordingly, the leaders in the digital skills ranking are SMEs from Finland with 90%, Denmark with 89% and Sweden with 88%. At the same time, the last positions in the ranking are occupied by SMEs from Hungary with 52%, Bulgaria with 48% and Greece with approximately 41%.

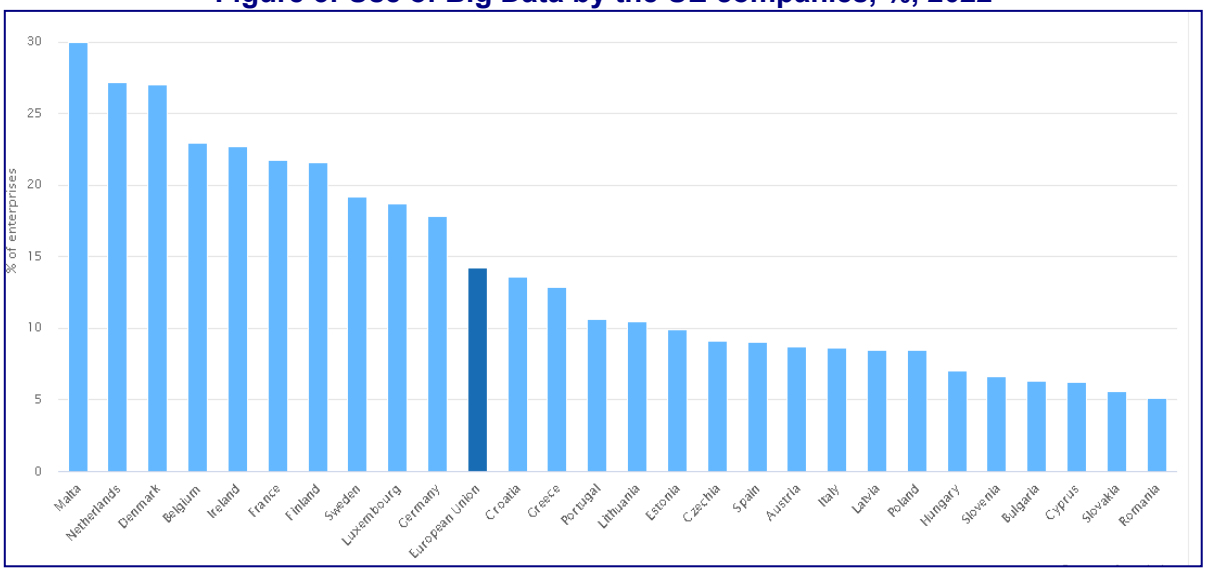
Figure 2: Share of the SMEs from the EU, with basic digital skills, %, 2022



Source: European Commission, DESI Report, 2023.

Regarding digital competences, the 2023 Digital Economy and Society Index (DESI) report shows that in the EU, the share of enterprises using Big Data is relatively low.

Figure 3: Use of Big Data by the UE companies, %, 2022

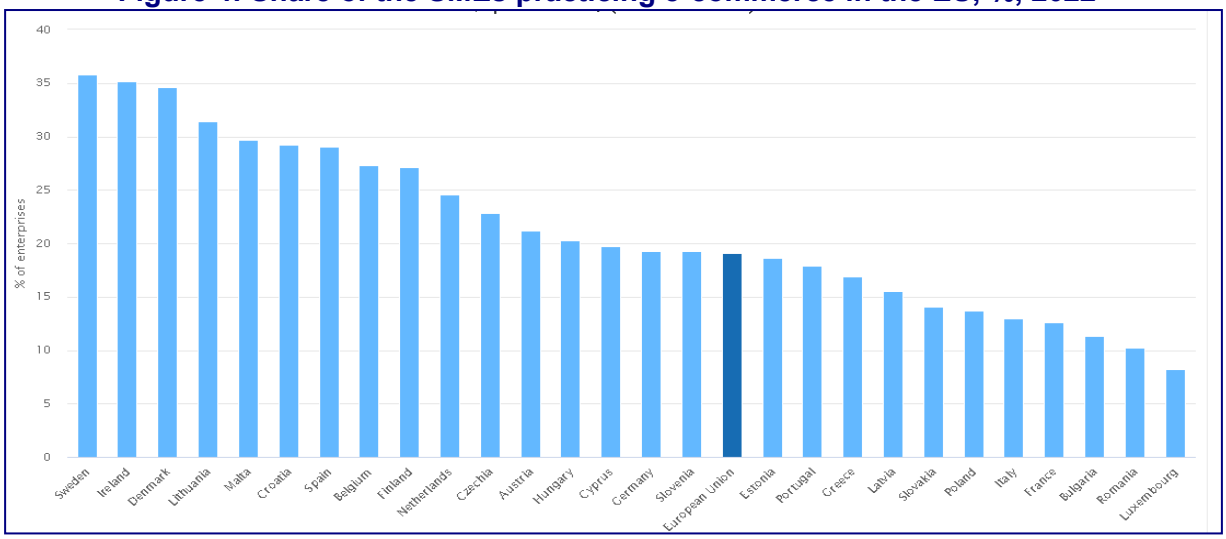


Source: European Commission, DESI Report, 2023.

Based on the analysis of the data shown in Figure 3, the SMEs from Malta have a leading position in DSI ranking, in terms of implementing Big Data, where approximately 30% of the SMES of the country include Big Data technology in their practices, while the SMEs from Romania achieve only 5% in terms of Big Data usage and thus occupy the final position in this ranking.

On the other hand, it is quite good news that a large part of the SMEs in the European Union practice electronic commerce, which allows them to be more competitive, flexible, and expand into new markets.

Figure 4: Share of the SMEs practicing e-commerce in the EU, %, 2022



Source: European Commission, DESI Report, 2023.

If we analyze the data included in Figure 4, we can notice that practicing e-commerce in the EU is a successful activity that brings many competitive benefits to the SMEs. Accordingly, the top leaders of e-commerce usage by enterprises in the EU are SMEs from Sweden, where 36% of the country's SMEs practice e-commerce, Ireland with 35%, and Denmark with 34%. The last positions in this ranking are occupied by SMEs from Bulgaria with 12%, Romania with merely 10% and, surprisingly, Luxembourg with just 8%. If we were to perform an analysis on the digitalization of the SMEs in the Republic of Moldova, we could mention that in 2022, the SME sector represented roughly 99,2% out of the total number of enterprises, generating 44,9% of sales revenue and employing 65.6% of private sector employees. On the authority of the latest data provided by the National Bureau of Statistics, approximately 80.3% of SMEs in the country have secured internet access, but only 17% of SMEs have successfully integrated digital technologies into their activity, which highlights a dire need for digital transformation in this sector [1].

According to a study conducted by USAID experts in the Republic of Moldova, there are sufficient elements for e-commerce development in the country, yet expert data shows that less than 20% of the country's companies practice online commerce [1].

Based on the analysis of the Digital Transformation Strategy of the Republic of Moldova for 2023-2030, as of March 31, 2023, out of the 517 public administrative services (G2B) registered with AGE, 204 services are available online, namely 33.4%. On the other hand, out of the 473 public services available, G2C, 32.5% or 154 services are provided online. The ICT sector has become the main driver of digitalization and innovation in the Republic of Moldova and has registered exponential growth in recent years. In 2021, the IT industry reached a share of over 4.2% of the gross domestic product (GDP), exceeding 10 billion lei in sales, the share of the ICT sector being over 7.6 percent of GDP with over 18 billion Lei in sales in 2021, achieved by approximately 2,000 companies with over 30,000 employees [7].

According to the NBM report for 2022, the export of ICT services reached 501.85 million USD. IT exports have been growing at an annual rate of over 30 percent over the past 5 years and reached a record high of 468.67 million USD in 2022. The 7% flat tax on sales revenue offered by Moldova IT Park and the wide range of eligible activities, including ICT research and development (R&D), have given a significant boost to the development of the ICT sector. In just five years of activity in this field, Moldova IT Park has become one of the

most successful development initiatives of the IT domain in the country, drawing 1,395 residents, 18,700 employees (68% males, 32% females), and a forecasted revenue for 2023 of over 10.7 billion Lei [7].

Based on the Speedtest Global Index (https://www.speedtest.net/globalindex) that provides a monthly comparison of Internet access speed data for 100 countries around the world, the Republic of Moldova ranks 58th, in terms of mobile broadband speed (with a download speed of 38 Mbps, compared to the global average of 48 Mbps) and 38th in terms of fixed broadband speed (with a download speed of 106 Mbps, higher than the global average of 98 Mbps). The Republic of Moldova is in the top 10 countries in the world in terms of accessibility and affordability of Gigabit Internet access, where users have access to unlimited Gigabit Internet for approximately 15 Euros per month [3].

The Entrepreneurship Development Organization, in an effort to boost the digital transformation process of SMEs in the Republic of Moldova, has implemented the Digital Transformation Program aimed at providing financial support to SMEs, more precisely to digitize business processes. Accordingly, the financial resources are granted by EDO as non-refundable financial support and can be used in the following directions [4]: purchase of ICT hardware and other related devices and equipment, including installation, configuration, commissioning costs, as long as they are justified by project implementation; purchase and/or development and/or adaptation of software applications/licenses necessary for project implementation, configuration and implementation of databases, migration and integration of various existing data structures; purchase and/or development and/or adaptation of complex ERP/CRM automation systems; purchase of new technological gear, systems, machines, tools, and work tools, necessary for the digitalization, innovation and modernization of the operational process, etc.

Conclusions

Based on the research conducted, we can highlight multiple vulnerabilities in the digital transformation of SMEs in the Republic of Moldova, such as:

a. Deficiency of legal acts on the implementation of new digital technologies, namely Artificial Intelligence (AI), Blockchain, Internet of Things (IoT), Big Data, and mining, and insufficient adaptability of the legal framework to the existing digital business models.
b. Insufficient institutional capacity for implementing the Agenda of Digital Transformation.
c. SMEs manifested reluctance towards digital transformation.
d. Deficiency of digital skills for the digital transformation of SMEs.
e. Underdeveloped ICT infrastructure within SMEs.
f. Low levels of ICT investment in agricultural SMEs.
g. Low involvement of local companies in state-funded IT projects.

Consequently, there is a rising need to increase the funding provided by the EU and international partners to streamline the digital transformation process of SMEs in the Republic of Moldova through investments in the purchase of hardware and software equipment that are extremely necessary for the digitalization of SMEs.

Concurrently, it is necessary to create support/consulting centers, as well as educational centers for entrepreneurs to help them learn how to implement information technologies, since the digital education of entrepreneurs does not allow them to generate and implement ICT in their business activities.

On the other hand, it is necessary to simplify customs procedures for online exports, grow the online trade, promote cooperation in the field of research, development, and innovation between the public and private sectors, and consolidate the electronic payment

market. These are just a few measures that will help SMEs in the Republic of Moldova to successfully engage in choosing the path of digital transformation.

References

1. DESI Report, 2023. Available here: https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/desi/charts/desi-indicators?indicator=desi_3b3&breakdown=ent_all_xfin&period=desi_2023&unit=pc_ent&country=AT,BE,BG,HR,CY,CZ,DK,EE,EU,FI,FR,DE,EL,HU,IE,IT,LV,LT,LU,MT,NL,PL,PT,RO,SK,SI,ES,SE
2. Digital Transformation Program Guide. Available here: https://www.oda.md/files/digitalizarea/2022/Ghidul%20participantului.pdf
3. Digital Transformation Strategy of the Republic of Moldova for 2023-2030. Available here: https://gov.md/sites/default/files/document/attachments/subiect-05-nu-300-mded-2023.pdf
4. Global Speedtest Index. Available here: https://www.speedtest.net/globalindex
5. National Bureau of Statistics. Available here: www.statistica.md
6. Organization for Entrepreneurship Development. Available here: www.oda.md
7. Report on public policies for the digitalization of SMEs. Available here: https://www.oirbi.ro/wp-content/uploads/2021/01/40Ready_Raport-OIR-_RO.pdf
8. *** National Bureau of Statistics. Available here: www.statistica.md