THEORETICAL ASPECTS OF DIGITAL TRANSFORMATION OF THE ECONOMY IN THE NEW GLOBAL REALITIES

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Abstract:
The digital transformation of the economy is associated with profound structural changes in such areas of production as the construction of new value chains with a local and regional focus based on new technologies (technological algorithms, artificial intelligence, blockchain technologies, the Internet of Things, cloud technologies, etc.), digital business models and digital investment solutions (Accelerated Digital Transformation Program, WEF, 2020). Important advantages of technological transformation include optimization of the production management process, decentralization, transparency, reduction of operating costs, etc. However, these processes pose serious challenges to SMEs, which require attracting significant financial resources for readjustment (in terms of resource productivity) to new technological realities and the new digital paradigm for business functioning in the Fourth Industrial Revolution.

Keywords: *digital transformation, innovation, economic consequences*
JEL classification: *032, 033, 038*

Introduction

Academic research establishing a link between innovation and economic growth provides support for the role of endogenous growth models (Romer, 1986). Technological innovations are created in the process of research and development, using human capital and an existing stock of knowledge. In particular, Ulku (2004) found that a 1% increase in innovation (in terms of patent data, researc and development expenditure) increases GDP per capita by about 0.05% in both OECD and non-OECD countries. According to a study by Frontier Economics (2013), venture-backed companies provide less than 6% of total private sector employment in Europe, yet they generate about 12% of all industrial innovation and their research and development expenditure accounts for 8% of all industrial R&D expenditure. The total economic value of patents granted to these firms in Europe over a five-year period is over €350 billion.

Description of the problem

The traditional explanation for the positive relationship between innovation and firm performance is established by Schumpeter (1934). According to him, innovative new products encounter limited competition and allow firms to realize relatively high profits. The fact that innovative firms consistently generate higher profits is the result of improved knowledge-based capabilities and the realization of dynamic economies of scale. Using data from the Australian Stock Exchange, Bosworth & Rogers (1998) find that research and development and intangible assets have a positive relationship with the market value of firms.

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The creation of a favorable environment for digital transformation and SME entrepreneurship depends on formal and informal institutions, which according to Baumol (1990) can be assessed at the macroeconomic, regional and firm levels. Macro-level drivers of digital transformation in SME entrepreneurship include GDP growth, employment, gross domestic investment, spending levels, inflation and interest rates. Public sector activities – including direct spending and public capital raising – in education, infrastructure and healthcare are also catalytic factors. For Murphy et al. (1999), the protection of property rights and the provision of balanced incentive structures for the public and private sectors are of particular importance. Government regulation of market entry suppresses levels of entrepreneurship (Ciccone et al., 2006). Strict labour market regulations negatively affect market entry and impose restrictions on firm entrepreneurship. According to Djankov et al. (2008), the administrative burden associated with taxes similarly reduces SME entrepreneurship. In a study by Free Network (2021) on Ukraine's integration into the EU's Digital Single Market, digital connectivity is expected to help increase exports of goods and services to the EU by between 1.8 % and 17%, respectively, and to provide positive effects on productivity and economic growth by around 0.42%. On the other hand, a study by McKinsey (2019) found that the implementation of cutting-edge technologies such as artificial intelligence (AI), the Internet of Things, quantum computing, blockchain technologies, etc. has the potential to provide more than 1 percentage point of productivity growth (due to lower production costs along the entire value chain), as well as due to the provision of R&D subsidies in certain technologies (IMF, 2021). For the World Economic Forum (2021), the transition to a digital economy (or the so-called "great reset") requires businesses to adapt to a new global model for value creation in localized and digitalized supply chains; an increasing role of all stakeholders in systemic transformation through active collaboration in the innovation process of digitizing economies in Industry 4.0. The fusion/combination of different technologies (e.g. artificial intelligence, mobile applications, cloud technologies, big data analytics, etc.) marks the transition from the Third to the Fourth Industrial Revolution.

On the other hand, regional factors for the digital transformation of SME entrepreneurship include: operating costs, localization and mobility of human capital, extensive R&D, availability of financial capital (Bartik, 1989), population and employment density, income growth, B2B service provision between firms, standard of living, technology and knowledge transfer and faster process of new firm creation. For Ejermo (2009), a key determinant of regional digital innovation is quality-adjusted patent data, and its relationship with regional R&D. For example, ninety percent of regional differences in economic growth (measured by total factor productivity) are associated with the accumulation of knowledge stock (patent activity) and the formation of regionally operating firms. Thus firms operating in geographically distant regions are more likely to adopt digital technologies intensively to provide greater market coverage and reduce their operating costs. A study by Lueckgen (2004) on entrepreneurial activity shows that the German regions with the highest number of entrepreneurial start-ups are Cologne, West Saxony/Leipzig, Munich, Emscher-Lippe and Middle Mecklenburg/Rostock. Wach (2012) conducted a survey of 109 SMEs in two provinces in southern Poland as part of the Regional Entrepreneurship Monitoring Project and found strong correlations between the availability of regional capital, the quality of entrepreneurial infrastructure, the speed of formation and the development of SMEs.

Industry-level factors driving the digital transformation of SMEs include profit potential, the presence of entry and exit barriers, supply and demand forces, and agglomeration of production structures (Reynolds, 1992). Industry profits, growth, and size are positively related to enterprise formation according to the Swedish Entrepreneurship Forum (2016). Firm entry and exit can serve as a proxy for the entrepreneurial environment at the industry level; However, this fluidity can be influenced by internal (organizational and managerial) or external factors (including the threat of entry). In technologically advanced industries with complex network infrastructures, the entry of foreign firms can serve to catalyze entrepreneurial activities and technological transition.

Firm-level entrepreneurial activity factors include human capital – which Evans & Leighton (1990) characterize as a prerequisite – as well as the availability of equity capital and visibility in social networks. The latter two variables further promote lower transaction costs (Williamson, 1971). According to Fonseca et al. (2001), high start-up costs and high taxes reduce levels of entrepreneurship. For Glaeser et al. (2009), the higher share of small and independent firms increases entrepreneurial activity due to, among other aspects, their access to skilled labor and finance, as well as higher profit margins and the ability to use knowledge derived from internal and external networks.

Economic consequences of digital transformation of the economy

Digital transformation requires the establishment and maintenance of a digital innovation "ecosystem", which according to WEF (2018) includes the promotion of digital entrepreneurship through investments in human capital and R&D&I based on an established digital strategic framework and policy. The innovation environment is particularly sensitive to the adequacy of the legal framework for the protection of intellectual property rights, the scope of tax incentives for innovation, competition policies, market regulations, the development of financial markets, the efficiency of trade and investment. In addition, stable macroeconomic conditions and low interest rates directly affect the levels of digital innovation activity. The structure of the national innovation system includes the pillars of knowledge generation (e.g. human capital and R&D spending), dissemination capacity (e.g. the existence of connections between different knowledge transfer networks), the capacity for accumulating knowledge of companies (e.g. resources for participating in innovation), the demand for innovation in the economy and the management of innovation (e.g. fiscal incentives, innovation funds and favorable legislation). Among the state incentives to promote digital entrepreneurship, investments in the construction of technology zones focused on the implementation of the goals of sustainable and digital economic development stand out. In such zones, the provision of tax incentives for companies is based on the fulfillment of certain conditions for achieving employment, investment commitment, export potential, and the implementation of social and environmental standards (OECD, 2020). NUI Galway and Whitaker Institute (2015) introduces the concept of the "triple helix" in the process of assessing the innovation environment. This approach focuses on the links between universities, public research organizations, the private sector and government at different points in the innovation process. The development of national innovation systems requires effective partnerships between these entities.

In the EU, the innovation environment of EU Member States is measured using the Innovation Scoreboard, with the European Commission publishing an annual innovation report for each Member State based on indicators and data from national statistical agencies. At EU level, the most innovative countries Finland, Sweden, Denmark share characteristics within their national innovation systems, including the importance of business R&D activities (especially patent applications), educational outcomes and efficient resource mobilization. As for Finland, the country has the highest R&D intensity in the EU (3.55% of GDP, compared to 2.07% for the EU-28 and 2.79% for the US) and the highest performance in terms of business R&D expenditure (2.44% of GDP). The Finnish government is accelerating reforms of the national research and innovation systems by providing various tax incentives for SMEs and especially start-ups, in order to increase the size of the internal market for venture capital. The Finnish Research and Innovation Action Plan emphasizes the need to increase the number of innovative SMEs with high growth potential, improve the quality and internationalization of Finnish SMEs, accelerate the process of public-private partnerships in the formation of industrial clusters, and ensure smart specialization through the Innovative Cities Programme.

As for the innovation-lagging countries in the EU - Romania (R&D intensity of 0.49% of GDP), Bulgaria (0.64% of GDP) and the Slovak Republic (0.82% of GDP) - these countries share such characteristics as a low level of economic competitiveness, fragmentation of public R&D systems, insufficient number of patent applications, lack of active cooperation links between public research centers and the private sector, inadequate level of public spending on innovation, weak commercialization of research results, problematic implementation of intellectual property legislation, etc.

Using a composite innovation index (combining input, process and output innovation indicators), Carayannis (2010) presents the various efficiency factors and an overall assessment of the levels of firm innovation. As a result of the correlation analysis, Carayannis finds that R&D expenditure correlates with the percentage of sales for firms that are radical innovators, and that innovation correlates with the level of invested venture capital provided for innovation needs. The number of patents correlates only with revenue and expected sales.

At the microeconomic level, various studies find that SMEs and large corporations innovate differently (Vossen, 2010). The relative strength of large corporations is linked to sufficient resources (Nooteboom, 1994) to finance R&D (including internal funds). Large corporations have high production and synergy potential, a diversified portfolio of R&D projects, well-developed marketing channels and realize economies of scale and scope in the R&D process due to higher productivity, division of labor and risk sharing. In terms of SMEs, their innovative strengths lie in the higher motivation of management and employees, effective and fast communication, specialized knowledge and skills, high flexibility. Most empirical findings suggest that SMEs, rather than large corporations, conduct R&D more effectively (Vossen, 2010) and benefit more effectively from knowledge spillovers from corporate R&D. According to Cohen and Klepper (1992), large corporations are better positioned to undertake large-scale fundamental and technological innovations with higher average economic value, while SMEs undertake mainly product innovations, driven by their flexibility and proximity to the market.

For example, at 3M Corporation, the R&D process is organized at three levels: 1) fundamental research on new materials in collaboration with universities and research centers; 2) technological and process innovation; and 3) R&D focused on product development. These differences in the innovation models of SMEs and large corporations point to the potential for collaborative open innovation between them by integrating SMEs into various technological innovation networks and systems. However, Stuart (2000) demonstrates that large organizations benefit less from these forms of collaboration, as large firms have the resources (financial, material, organizational, technological, etc.) to actively carry out digital innovations (i.e. to implement a product, process or business innovation model using ICT) and sustainable digital innovations (i.e. those that support the dual transition to a green and low-carbon digital economy and the realization of economic, social, environmental and climate impacts or a 3P approach (“profit”, “people”, “planet”). According to Yousaf et al. (2021), SMEs can undertake sustainable digital innovations through an approach to digital orientation of activities based on the active use of the (industrial) Internet of Things and digital phantomization. According to WEF (2020), this type of innovation activity of SMEs is expected to significantly support the achievement of the UN Sustainable Development Goals (SDGs) by 2030 and in particular the goal of "universal and accessible digital infrastructure for all" (WEF, 2018).

According to Neuss (2021), important prerequisites for the digital transformation of the economy are related to changes in relative prices in individual sectors and in real aggregate income; the relationship between inputs and final products, as well as the role of international trade. Changes in relative prices in different sectors are due to different levels of use of technological innovations, which leads to differences in realized productivity due to the substitution effect between the factors of capital and labor. With an increase in real incomes in highly intensive sectors, demand increases due to changes in the structure of consumer demand towards goods/services that satisfy needs that are higher in the hierarchy for consumers. With a change in specialization and the strengthening of international trade relations, companies in vertical value chains compete for the performance of certain activities (e.g. service support, consulting activities, etc.), which creates a prerequisite for technological improvement of activities and "denationalization" of competitive advantages. Companies that achieve high levels of digital innovation activity achieve significant integration of ICT into their business activities with a developed long-term strategy for managing technological innovations.

Regarding the economic consequences of the digital transformation of economies, theoretical studies outline a positive association (Qiang et al., 2011) between the introduction of broadband connectivity and growth in GDP per capita in a study of 120 countries for the period 1980-2006, as well as between the use of ICT and GDP, especially for countries with high per capita income. In a study by Accenture (2017), a 10% increase in broadband penetration is associated with an additional GDP growth of 1.21 percentage points in developed countries and 1.38 percentage points in developing countries; increase in labor productivity (Banga & te Velde, 2020) by 10% on average in low-income countries due to increased specialization, increased employment (due to the creation of new professions (Mastilo, 2017)), emergence of new economic sectors and services, business innovations. A positive relationship between the growth of real GDP per capita and ICT is also established using the aggregated method of moments and panel data for the period 2000-2009. A 10% increase in fixed and mobile broadband Internet in Europe leads to a growth of 2.1% and 0.46% GDP, while broadband coverage correlates with a GDP growth of 3.2% in 26 Latin American countries. According to Deloitte (2018), a 10% increase in the switch from 2G to 3G correlates with an average increase in GDP per capita of 0.25% across 96 countries, with a doubling of mobile data traffic speed being associated with a 0.5 percentage point increase in the same indicator.

Jalava & Pohjola (2002) find that ICTs contributed to an increase in GDP in Finland from 0.3 % to 0.7% in the 1990s. In the short term, the impact of ICTs on economic growth can even be negative (Kiley, 1999) due to the costs of adjusting the economy. A study (Matijevic & Solaja, 2015) using the Technology Map of Europe identifies three groups of countries according to ICT spending and GDP growth. The first (UK, Germany and France, Denmark, Sweden, the Netherlands, Finland, Austria, Belgium) reports high levels of both indicators. In the group of Mediterranean countries (Italy, Spain, Greece), average values of the indicators are established, while there is a serious lag in CEE and SEE. A special characteristic of developing countries in the digital transformation is the so-called "structural dualism", in which technologically advanced sectors register increasing productivity and innovation levels, while traditional industries maintain low levels of these indicators.

Academic research establishes a positive association between the level of computerization and employment of personnel with low and high levels of professional skills and a negative association in professions with medium levels of professional skills. Among the factors that mitigate the risk of technological unemployment (La Grandeur and Hughes, 2017) are improving the qualifications of employees and training students in ICT and STEAM (science, technology, engineering, creativity and mathematics) specialties; creating a favorable economic environment for entrepreneurial activity; building an ICT supporting infrastructure. It should be borne in mind that less developed regions in a country are expected to be more vulnerable to the digital transformation of the economy, due to the possibility of accelerated automation of the prevailing economic activities there (mainly in sectors such as retail, agriculture, transport, etc. low-tech activities). In economically developed regions of a country, digital transformation has a particularly strong impact on the manufacturing industry through its accelerated automation, and this is associated with lower social consequences due to the high percentage of the urbanized population with higher education, entrepreneurial activities of high-tech start-ups, etc.

In countries like Bulgaria, characterized by significant regional differences in socio-economic development, there are social and digital inequalities (so-called dualization/polarization of the labor market, “digital divide”OECD), which will deepen in the course of the digital transformation of the economy due to such reasons as the absence of equal access to the Internet, social inequalities in the standard of living and differences in educational level, age, skills, etc. with humanity's transition to an “economy of dehumanization” and the displacement of human labor by AI (Harari, 2017). A Eurobarometer survey (2020) found that four EU countries are characterized by the highest level of digitally vulnerable population, namely Hungary, Greece, Romania and Bulgaria, and these countries have a common characteristic: these are low-income countries with a GDP below the EU average (Hungary 62.4%, Greece 82.4%, Romania 50.4% and Bulgaria 49.5%), which requires changes in education systems with a focus on stimulating the innovative potential, creativity, adaptability and digital literacy of the population (i.e. a focus on intellectual and social capital as a mechanism for competitive advantage of nations). The technologically developed Sofia region is characterized by a high potential for increasing employment through the creation of new professions in new technological sectors, using digital technologies. For the USA, a positive association is found between employment in high-tech sectors of the economy and the concentration of highly educated specialists in them. A similarly strong positive relationship is measured by Berg et al. (2018) between the number of employees engaged in R&D, the number of patents issued, and the level of ICT use in a regional context. Therefore, high innovation activity in a given region suggests the potential for the emergence of new technological and digital-based industries and activities with an increasing role of the so-called “digital” capital, integrating artificial intelligence in value generation in all spheres of the production process.

In a global perspective, various initiatives are theoretically studied to mitigate the adverse effects of digital transformation on technological unemployment and the elimination of routine activities as a result of the accelerated automation of labor in all spheres of material and intangible production. Among them are the introduction of a technology tax (the so-called “robot tax”) to provide social transfers in favor of a segment of the unemployed formed as a result of the accelerated robotization of activities. Other initiatives are the introduction of a reduced working week, a remote or hybrid employment model, a universal basic income, the development of regional programs for digital transition, supporting entrepreneurial activity and its financing through venture capital funds.

The digital transformation and especially the changes that occurred after Covid-19 lead to the emergence of non-standard forms of employment (self-employment, remote work, digital outsourcing, etc.), which constitute over 1/3 of total employment in OECD countries, but vary depending on the economic sector (predominant in scientific activity, technical, financial activities, insurance, etc. service sectors). In particular, self-employment has seen a significant increase due to tax incentives in the Netherlands, the Czech Republic and Slovakia and is associated with a trend towards starting entrepreneurial ventures. According to the Online Labor Index (Oxford Internet Institute), during the Covid-19 pandemic, there has been an increase of around 30% in the demand for employees on online platforms. Challenges with the remote form of work are associated with a lower level of protection for employees (e.g. in terms of the use of paid leave, collective bargaining, guaranteed social and health protection, opportunities for professional growth), which is why the Council Recommendation on access to social protection for workers and the self-employed (2019) is in force in the EU, providing opportunities for the transfer of social benefits between different forms of employment and transparency of the different social protection schemes in non-standard forms of employment in the EU. EU countries are undertaking new policies to minimize the negative consequences of digital technologies (such as AI) on the labor market, related to the disappearance of professions through professional retraining programs, for example, in Finland, the acquisition of basic AI skills by the entire population is defined as a civic competence.

Positive association between digital transformation and trade facilitation has been established (Meijers, 2014) in low-income countries; reduction of transaction costs (Lendle et al., 2012) and change in trade patterns in global value chains. Specifically, Meijers (2014) focuses on examining the causal relationship between ICT and economic growth in middle-income countries around the world and finds that ICT indirectly affects GDP growth through trade growth. Thus, according to him, a 10 percentage point increase in Internet use is associated with an increase in the trade openness coefficient by 3.12 percentage points in developed countries and 5.2 percentage points in developed countries, GDP growth of 0.15% (developed countries) and 0.27% (developing countries). For Bulgaria, as a country characterized by trade specialization in low-tech traditional industries, the digital transformation process is expected to take place at a slower pace due to the trends of deglobalization (localization) of production in the aftermath of the global Covid-19 pandemic and the growing external challenges from the military conflict in Ukraine (rising energy prices and an uncertain environment with expectations of high inflation).

In developing countries, in particular, there are institutional and infrastructural weaknesses for the digital transformation of their economies, which deepens the technological gap with developed industrial countries and creates limitations to their trade integration. The holistic approach to building a digital economy requires structural transformations in the institutional structure, a new strategic framework for innovation and digital transition with a focus on mitigating social inequalities (the so-called “digital divide”) and realizing greater positive impacts for achieving the goals of sustainable and inclusive development. Thus, developing countries, through the “leapfrogging” mechanism, have the opportunity to build the potential to catch up with digitally advanced countries only if the following preconditions are met: access to technological equipment and know-how for the productive use of ICT; ability to implement new digital-based technologies; integration capabilities downstream in the value chain (such as developing and expanding the domestic market through improved marketing, logistics, etc. capabilities).

A WEF study (2020) found that the technologies that will have the most tangible impact on international trade in the short to medium term are the Internet of Things, e-commerce, digital payments, cloud computing and digital services. In the long term, robotics, 3D printing and virtual reality models, as well as artificial intelligence, are expected to have a strong impact on trade. The main positive impacts of the implementation of new technologies in trade flow are related to trade facilitation and improvements in the supply chain (over 63%), the emergence of new digital products and services (55%), higher efficiency in logistics coordination (49%), reduction of carbon dioxide emissions in supply chains and environmental labeling of products. In addition, digitizing the workflow in international trade creates opportunities for easier access for companies to trade finance through fintech infrastructure and electronic platforms (such as blockchain and digital registers), providing a high degree of transparency and automation in end-to-end supply chains. The implementation of artificial intelligence in international trade data exchange greatly reduces the comparative advantages of developing countries as low-cost locations due to facilitating and promoting trade by improving the management of risks in the supply chain and in customs control (e.g. undervaluing the value of imports). By using technology based on the Internet of Things and robotic automation, it is possible to track cargo in the logistics of international trade, manage inventory levels and high security in the supply chain, but according to WEF (2020) estimates, only 3% of container terminals in the supply chain are automated. Among the significant challenges facing the entry of digital technologies into international trade are the protection of data in the supply chain; the interchangeability between these technologies, the standardization of the data exchange format and the differences in their regulation, the customs valuation of technological products and the protection of intellectual property rights for trademarks and designs. To overcome these challenges in global trade, various international initiatives are being undertaken at the level of the World Customs Organization, the UN Center for Trade Facilitation and Electronic Business, the G-20 to harmonize the technological "eco" system in the post-pandemic Covid world.

In particular, at the company level, technological innovations lead to the shortening of global value chains and the deglobalization of production; the rapid rate of appearance and disappearance of companies, industries, productions, products, professions, which results in structural imbalances between demand and supply. Other important consequences of the technological transition at the firm level are:

- a decrease in the marginal costs of production with an increase in the digital component of goods, increasing profits and increasing production efficiency. Firms operating in digitally intensive sectors achieve higher productivity (Atkinson et al., 2009), higher profits for the last 30 years (McKinsey, 2015), generate direct and indirect network effects and economies of scale and scope, increasing market concentration;
- a qualitative leap in production using augmented reality technologies and dematerialization of product characteristics;
- an acceleration of the transition to a circular economy and recycling production through high resource efficiency;
- information becomes a driving factor of production, embodied in technological innovations through forms of artificial intelligence;
- increased efficiency of consumption in the sharing economy and a growing share of intangible assets in the conditions of deindustrialization, strengthening the role of services in the economy.

In addition to the above-outlined changes in theoretical terms at the macroeconomic and company level, the technological transition and the adaptation of institutional mechanisms in the knowledge economy are also associated with changes in:

• the market mechanism - digitalization in the exchange process leads to direct connections between participants and a reduction in transaction costs in the various interaction channels (business-business; business-retail consumer; consumer-consumer, machine-machine, etc.). Digital networks form new digital markets (operating in the form of technological platforms), on which the price mechanism is implemented through algorithms based on large data sets.

• the distribution mechanism - due to mass bankruptcies of small companies in the technological transition, technological unemployment (as a subtype of structural unemployment) increases, which deepens social stratification with a tendency towards a shrinking middle class in society and polarization in incomes. The process of robotization is associated with a decrease in the absolute and relative share of labor in the newly produced final product, an increase in corporate profits, a greater concentration of capital, the emergence of new flexible forms of labor, etc.

• the mechanism of consumption - consumers are profiled and individualized based on preferences and habits through various big data algorithms and the emergence of the so-called "prosumer" (i.e. the producer is also a consumer) in the course of using augmented reality technologies.

• regulatory mechanisms of states - with the technological transition, the degree of uncertainty, potential for generating risks, destabilization, digital crime, disinformation, etc. increases. This requires an increasing role of state intervention in the market mechanism for the protection of personal data in the shared digital economy under conditions of innovative mercantilism by promoting inclusive/inclusive/direct digital democracy in the new global virtual space.

Conclusions

The successful transition to a technological-digital economy requires the creation of a favorable environment for digital transformation through structural changes in the institutional framework and the business environment, which should be quantitatively and qualitatively assessed at the macroeconomic, regional and company levels. An important element in the digital transition is the construction and maintenance of an innovation "ecosystem", which is associated with measures to promote digital entrepreneurship through investments in human capital, R&D and innovation based on an established digital strategic framework and policy.

The digital transformation of the economy implies the introduction of digital technologies in Industry 4.0 (artificial intelligence, industrial Internet of Things, big data, blockchain technologies, 5G technologies, three-dimensional printing, industrial robots, etc.) in all spheres of socio-economic life, taking into account the various aspects of the socio-economic impact of digitalization. Theoretical studies have identified positive impacts of the digitalization of the economy on GDP per capita growth, growth in labor productivity, increased employment at a high level of professional skills in economically highly developed countries, and changes in trade patterns in global value chains. For developing countries, including Bulgaria, theoretical studies report a deepening of social inequalities in the course of the transition to a digital economy of "dehumanization" and the replacement of human labor by forms of artificial intelligence with the resulting unfavorable trends in the social sphere (such as the erasure of the middle class and the deepening of social inequalities) and a decrease in welfare in society, which necessitates strengthening the market and institutional framework with a view to promoting entrepreneurship and competitiveness while preserving the rule of law and democracy with control over corruption. To mitigate the negative social effects of digitalization in the long term, a study by the Bulgarian Industrial Chamber and the Friedrich Ebert Foundation (2021) proposes measures such as the potential for part of employees' income to be formed from ownership of capital, rather than from labor - e.g. ownership of shares in enterprises or the right to shares in capital (stock options).

At the European Union level, a new integration mechanism has been established for the transition to a technological-digital economy and the construction of a Single EU Digital Market with the aim of increasing the competitiveness of European SMEs by mitigating restrictions on their commercial activities and deepening their internationalization in the new global realities after the pandemic Covid-19 crisis. The regulatory framework for the construction of the Single Digital Market provides for the creation of conditions for the facilitated movement of people, goods, services and capital through digital means while strictly applying the principles of free competition, mitigating various technological risks and providing a high level of protection of personal data. The new strategic and regulatory framework for the Digital Single Market sets specific quantitative and qualitative targets for the transition to the digital economy over the next decade to 2030, which relate to the building of a civil society with digital skills, a secure and sustainable digital infrastructure, a digital transformation of the economy and the digitalization of public services.

Significant benefits are expected for the EU from the transition to a technological-digital economy in terms of dynamizing economic growth, social and environmental impacts with the offer of new innovative products/services with increased transparency of the market mechanism, improved quality in supply chains with higher competition in digital markets. Against the background of these positive expectations, problematic areas are reported in the construction of the Digital Single Market, such as the future deepening of the fragmentation of the digital space in the EU as a structural flaw due to the extremely restrictive business environment, regulatory burden, which will slow down the transition to digital leadership of the EU in the new deglobalizing world.

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