

Mapping Digital Transformation: Addressing Threats And Security Challenges In Economy

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Abstract

This analysis explores the transformative impact of digital transformation on the global economy, emphasizing its role in reshaping value creation and distribution. It highlights the emergence of new economic sectors and technological frameworks while addressing the challenges posed to economic security, which can be categorized into systematic, structural, and industrial threats. Despite these challenges, digital transformation offers significant advantages, including economic growth, job creation, and improved social outcomes such as enhanced healthcare access and reduced poverty. To capitalize on these benefits while mitigating risks, the study advocates for a comprehensive Program for the Development of the Digital Economy. This program should focus on establishing regulatory frameworks, enhancing digital literacy, fostering competitive business environments, and ensuring equitable access to broadband internet. By addressing these priority areas, nations can secure their economic interests and promote sustainable development in an increasingly digital landscape.

Introduction:

In today's economic landscape, a significant driver of progress is the shift towards digital transformation, which has the potential to significantly improve conditions and elevate the economy to a more advanced level. Unlike the traditional economy, where finite resources dominate, the digital economy relies on innovation and the continuous flow of reliable, timely information as its core assets. These

elements are crucial for fostering growth and maintaining competitiveness in the digital era. The idea of the digital economy was first introduced by business analyst Don Tapscott (Bowman, 1996), who explored how advancements in technology were reshaping entrepreneurship. He demonstrated to entrepreneurs that emerging technologies were gradually transforming traditional business models into technology-driven enterprises, highlighting the evolving nature of entrepreneurship in the digital age.

Technological advancements over the past 10-15 years, alongside the widespread adoption of digital processes, have profoundly influenced every aspect of economic activity. The digital economy offers distinct competitive advantages through the innovative evolution of economic systems across various levels. Information and communication technologies (ICT) and artificial intelligence are now key drivers of socio-economic progress and improvements in modern living standards. Establishing the required socio-economic frameworks accelerates the pace of digitalization in all sectors of the economy, which is crucial for ensuring the state's economic security.

In recent years, digitalization has become a key driver of global economic development, as it not only boosts labor productivity (a direct benefit) but also saves time, stimulates demand for new products and services, and fosters new quality and value (an indirect benefit). Simultaneously, the use of digital information as a core resource is facilitating the shift from a traditional market economy to a digital one, where all sectors—public and private, industrial and financial, production and services—are closely interconnected and mutually supportive in their operations.

Literature Review:

In general, while there is considerable academic research on the impact of economic digitalization on economic security, it is advisable to treat these concepts separately. By outlining the key distinctions in the context of modern economic systems, we can delve into the specific definitions of the “digital economy” as presented in foreign literature. For instance,

Deloitte's analytical review describes the digital economy as a new form of business activity for market participants, driven by network interactions conducted via the Internet (Aleksi, 2018). This definition emphasizes the transformation of traditional business models through digital platforms and online connectivity. According to Bazzoun (Mohammed., 2019), the digital economy is described as a cyber-physical system where interactions between private and public sectors are facilitated within a virtual environment. This framework enables commercial activities to be conducted seamlessly in digital spaces, reflecting the integration of physical and virtual economic operations. Collis and Brynjolfsson (Erik, 2019) view the digital economy as a means of facilitating market relations, emphasizing the role of modern innovation trends in the development of information and computing technologies. This perspective highlights the importance of technological advancements in shaping how market interactions are carried out in the digital era.

Besada (Hany, 2018) defines the digital economy as a contemporary business framework that supports both domestic and global economies. It is built on the integration of information technology, intellectual assets, intangible resources, and innovation. This description emphasizes the transition toward knowledge-based economic models, where technological progress and creative capital are the primary drivers of growth and competitiveness. Mambetomarov and Almasbekova (Azizbek, 138-143) describe the digital economy as a new form of socio-economic system, where a significant portion of goods and services transitions to the virtual space, driven by the rapid development of information technologies. This transformation highlights how digital advancements are reshaping the traditional economy by moving many aspects of commerce into the online realm. Ganichev and Koshovets (8-36., 2020) define the digital economy as the process involving the creation, distribution, and utilization of digital technologies, as well as the related products and services. This perspective emphasizes the broad scope of economic activities driven by the development and application of digital innovations. Jiang Yun, a Chinese scholar, defined economic security as the capacity to preserve

economic independence and ensure a steady improvement in living standards for the entire population through national economic growth. He analyzed economic security through the lenses of competitiveness and independent economic sovereignty (Yong., 2007). Kahler (Kahler, 2004) argues that globalization has disrupted the traditional understanding of economic security, which was previously seen as the economic vulnerability of other nations. He further suggests that globalization has shifted the focus of economic security to address risks associated with cross-border networks of non-state actors and the economic uncertainty brought by the evolving global environment. In his monograph, Senchagov (Vyacheslav., 2012) defines economic security as the condition of both the economy and governmental institutions in which national interests are protected, the country develops with a social focus, and defense capabilities remain sufficient even under the most challenging internal and external circumstances. Karimov and Saydullaev (Shakhzod., 2019) advocate for the digitalization of Uzbekistan's securities market, asserting that transforming the financial sector, particularly the stock market, will accelerate its growth. They believe this shift will position the stock market as a key driver of the country's economic progress in the near future. Karimov and Khamidova define the economic security of a state as the safeguarding of all sectors of the economy against harmful actions, which may arise either from deliberate external influences or from unexpected market dynamics (Karimov Narboy, 2021).

The efforts of many authors to categorize the challenges of economic security during the digitalization phase have resulted in the identification of three primary problem groups: systemic, structural, and sectoral. Systemic security issues typically encompass challenges related to the conditions for economic development both in the short and long term. These include dependence on foreign digital technologies, a lack of foundational elements, regional disparities in digital access, and the rise of information crime, among others. Structural security challenges involve reliance on energy prices, significant labor market shifts, and excessive centralization of public administration. Sectoral security issues pertain to the

absence of effective digital solutions for specific industries — such as agriculture, which lacks a suitable operating system — and falling behind leading nations in developing competitive information technologies. Despite the significant focus on digitalization challenges, the effects of digital technologies on economic security have been studied and addressed inadequately. From the author's view, the digitalization of the economy impacts economic security not only at the intersection of systemic, structural, and sectoral issues but also at the individual level. This is evidenced by changes in household financial situations due to fluctuations in individual income and the emergence of disparities among the working population in terms of knowledge, wealth, and social status resulting from production automation.

Research Methodology:

The information presented in this article is primarily derived from scientific publications focused on the topic, alongside international sources from government organizations. The research methodology employed in this study follows two key avenues: first, identifying the indicators associated with the digitalization of the economy, and second, determining the indicators related to the economic security of the state. To effectively quantify the development level of the digital economy within a nation, assess its contribution to the overall GDP, create rankings for digital economy progress, and evaluate the nation's standing in the global digital landscape, it is crucial to clarify which segments of the economy are considered digital and the methodologies used for their measurement. The extent of economic digitalization is assessed through indicators and criteria that are widely acknowledged by the global community. This process involves examining contemporary methods (Ganievich Karimov, 2021) to ascertain their applicability in evaluating economic performance.

Furthermore, the impact of economic digitalization can be observed across all facets of economic security. Literature analysis indicates that digital transformation is most evident in macroeconomic indicators such as GDP, inflation, and unemployment rates. Consequently, it is important to analyze

the digitalization of the economy concerning shifts in these economic security indicators, particularly focusing on GDP, inflation, and unemployment metrics. To compare the socio-economic development levels of various regions, the “GDP per capita” metric is recommended, which is calculated by dividing GDP by the population of the respective area. Another key indicator is the “Average inflation rate,” typically represented by the consumer price index (CPI), which measures the change in price for a fixed market basket of goods and services typically purchased by urban residents. This index is calculated as the ratio of the market basket’s price in the current year to its price in the base year. Lastly, the third projection indicator is the “Unemployment rate according to the ILO methodology,” which represents the proportion of unemployed individuals relative to the economically active population, expressed as a percentage.

Analysis of Data and Result:

Digital transformation signifies a series of qualitative and revolutionary changes that involve not only individual digital advancements but also a fundamental restructuring of the economy, shifting the focus of value creation toward the development of digital resources and seamless digital processes, resulting in a transition to a new technological and economic framework along with the establishment of new economic sectors; this comprehensive transformation is essential for achieving greater impact and deeper engagement in the digitalization process among all key economic players, which can be categorized into four levels: the first level encompasses software, hardware, and telecommunications (Ilya., 2019); the second level includes digital services and the platform economy, represented by transactional platforms such as Amazon, Uber, Alibaba, and Airbnb, as well as innovative platforms like Windows, Android, and Salesforce; the third level covers areas related to the sharing economy and gig economy; and finally, the fourth level pertains to integrated digital business sectors, including Industry 4.0 and the economics of streaming data processing algorithms..

Economic security embodies the capacity of the institutional framework to safeguard the interests of economic entities in

alignment with national and international legal standards, ensuring stable business operations, promoting economic growth, and mitigating financial risks. In contemporary times, a key priority in maintaining economic security is the ability to anticipate challenges and threats, with digital transformation being particularly significant. Digital threats and challenges that notably impact economic security can be categorized into three main groups: first, systematic threats, which include issues related to the economy or its critical components, such as reliance on foreign digital technologies, insufficient foundational infrastructure, and the challenge of “digital inequality”; second, structural threats, which arise from digitalization and manifest as substantial changes in the labor market and increasing unemployment; and third, industrial threats, which can be further divided into two categories: threats to the operations of individual enterprises, encompassing corporate data theft, industrial espionage, hacker attacks, and inadequate access to both digital technologies and skilled personnel, and threats to individual citizens, which involve the theft and manipulation of personal data.

Nevertheless, despite several problems of economic security in the context of digitalization, the digital transformation of the economy has the following advantages for the socio-economic development of the country.

Economic Benefits:

- A significant contribution to economic growth
- Growth in the number of jobs in related industries 3 to 5 times.
- Increase in labor productivity.
- Accelerating the growth rate of small and medium sized businesses.

Social Benefits:

- Increasing inclusiveness and reducing poverty
- Improving the availability and quality of health care

- Reducing the cost and increasing the availability of mass education
- Reducing the negative impact on the environment
- Reducing crime, increasing the availability of financial services, road safety

According to author, to guarantee economic security and promote further positive growth in the digital economy, a dedicated Program for the Development of the Digital Economy should be created, focusing on the following key areas:

- i. Establishing regulatory frameworks for the digital industry and developing a new strategy for determining the essential legislative limitations within the sector.
- ii. Enhancing the digital literacy of the population, which includes achieving high graduation rates for skilled ICT professionals.
- iii. Establishing competitive conditions to foster the development of large, medium, and small enterprises in the digital technology sector within various regions, and facilitating the entry of some of these companies into international markets..
- iv. Ensuring that the population has access to broadband internet and the advancement of new technologies and communication methods, which includes establishing a technological foundation for a communication system built on domestic innovations. The program must be thoughtfully crafted to enhance the country's economic security, alongside the previously mentioned areas.

Discussion:

In conclusion, digital transformation represents a profound shift in the economic landscape, characterized by significant changes in how value is created and distributed. This transformation not only introduces new technological structures but also fosters the emergence of entirely new sectors within the economy. The multifaceted nature of digitalization, spanning software, services, sharing economies,

and integrated business models, necessitates a comprehensive approach that involves all key economic players. While digital transformation poses various challenges to economic security—including systematic, structural, and industrial threats—its benefits are substantial. The transition contributes to economic growth, job creation, enhanced productivity, and improved social outcomes such as inclusiveness, better healthcare access, and reduced poverty. To capitalize on these advantages while mitigating risks, it is essential to implement a dedicated Program for the Development of the Digital Economy. This program should focus on regulatory frameworks, enhancing digital literacy, fostering competitive environments for businesses, and ensuring widespread access to broadband internet. By addressing these priority areas, nations can secure their economic interests and promote sustainable development in an increasingly digital world.

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