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DEVELOPMENT OF KAZAKHSTAN ECONOMY IN THE CONTEXT OF DIGITALIZATION

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Abstract. This article is devoted to the theme of the development of the digital economy in the Republic of Kazakhstan. The current case study describes the process of development of the program “Digital Kazakhstan” as well as the digital economy of the country overall. The digital economy is an economic activity based on digital technologies and data. It includes various aspects, ranging from e-commerce to advanced technologies such as artificial intelligence, blockchain, and the Internet of Things.

INTRODUCTION

Digitalization increases the country's competitiveness in the world. However, the digital economy plays more important role than traditional ones. The differences between traditional and digital economies:

1. **Based on technology:** The central feature of the digital economy is the implementation of technology to create new business models, improve productivity and expand markets.

2. **Data as an asset:** In the digital economy, data is becoming one of the most valuable assets. They are used to analyze, forecast and create new products or services.

3. **Speed and scale:** The digital economy allows to quickly scale businesses and reach global markets with less investment.

4. **Dematerialization:** Many products and services are becoming digital, which can reduce the physical presence of companies and products in the market.

5. **Labor market change:** The gig economy, remote work, and other employment models are becoming increasingly common in the digital economy.

6. **Entry and exit barriers:** Digital platforms can reduce barriers of entry for new participants, but at the same time create monopolies due to network effects.

7. **Consumer's expectations:** Digital technologies change consumer expectations, increasing the need for personalization, instant access, and convenience.

8. **Connection:** Digital ecosystems connect different industries, creating cross-industry partnerships and business models.

1. DIGITAL ECONOMIC GROWTH IN KAZAKHSTAN

The government of Kazakhstan is actively working towards the development of its digital economy. The government has recognized the potential of the digital sector to drive economic growth, innovation, and create new job opportunities. Kazakhstan's strategy "Digital Kazakhstan" was created in 2017 to increase the country's competitiveness and improve the quality of life of citizens through innovation and technology. Below are some key aspects of the development of the digital economy in Kazakhstan:

- Digital infrastructure
- E-Government Services
- Technological Innovation and Startups
- Digital Skills Development
- Fintech and Digital Payments
- Cybersecurity and Data Protection
- International Collaboration.

Digital infrastructure – Kazakhstan is investing in the development of digital infrastructure to support the growth of the country's digital economy. Efforts have been made to expand broadband connectivity, improve network coverage and increase the availability of high-speed Internet throughout the country.

The development of such infrastructure has led to significant progress in the areas of digital service delivery, e-commerce and digital communications.

E-Government Services – Kazakhstan has made significant progress in digitizing public services through the “e-Gov” platform. Citizens and businesses have access to various online government services such as tax filing, business registration, and public procurement. This Digitalization of public services aims to improve efficiency, reduce corruption, and increase transparency in public administration.

Technological Innovation and Startups – Kazakhstan encourages technological innovation and supports start-ups in the digital sector. Techno parks and innovation centers such as Astana Hub and Alatau IT City provide

infrastructure, mentorship and financial support for start-ups and technology companies. These initiatives aim to create a vibrant ecosystem that encourages innovation, entrepreneurship and the development of digital solutions.

Digital Skills Development – Kazakhstan recognizes the importance of digital skills for the workforce. Significant improvements have been made to increase digital literacy of the population using various initiatives and upgrading the education system. Such initiatives can include but not limited to:

- partnerships with top educational institutions around the world;
- partnerships with the private sector;
- online learning platforms.

By providing the population with digital skills, Kazakhstan seeks to form a skilled workforce that can actively contribute to the digital economy.

Fintech and Digital Payments – Kazakhstan is showing a growing interest in financial technologies (Fintech) and digital payments. The National Bank of Kazakhstan has implemented measures to promote the development of Fintech startups and digital payment solutions. This focus on Fintech aims to increase access to financial services, facilitate cashless transactions, and spur innovation in the financial sector.

Cyber security and Data Protection – In the context of a growing digital economy, Kazakhstan is aware of the need to strengthen cyber security and protect personal data. The government is working to create cyber security rules and frameworks, promote secure digital practices, and increase public-private collaboration to mitigate cyber threats.

International Collaboration – Kazakhstan actively cooperates with international organizations and partners to share knowledge, best practices and attract investment in the digital sector. This collaboration is helping Kazakhstan align its digital development efforts with global trends and standards.

2. STATISTICAL ANALYSIS

One of the tasks of the state program "Digital Kazakhstan" was to achieve the level of digital literacy of the population in 2022 at 83%.

At the same time, the level of digital literacy of the population aged 6 to 74 in 2020 had already amounted to 84.1%, having increased by 2 percentage points compared to 2019, with the target indicator of the program in 2020 at 80%, shown in Figure 1.

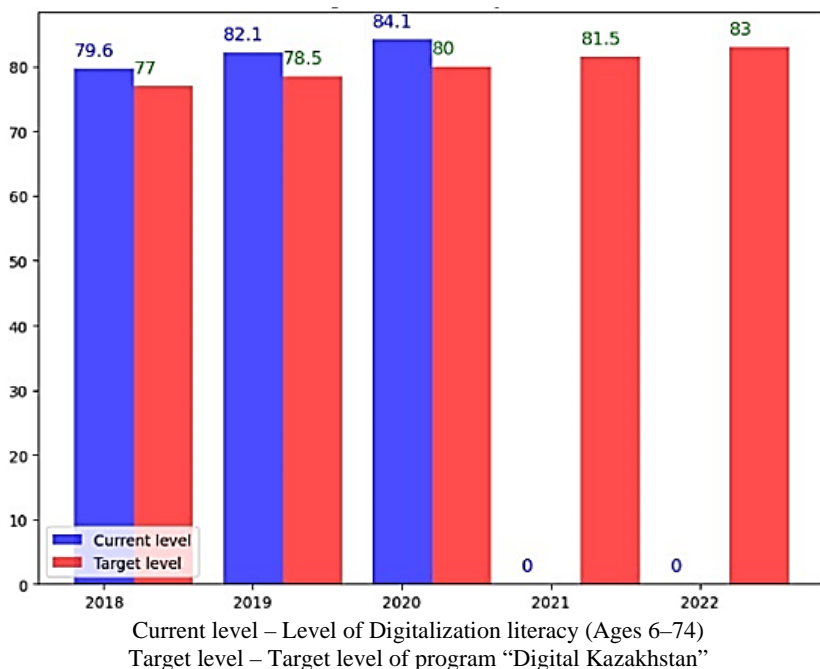


Figure 1. Digital Literacy level

Ensuring digital literacy, including in the regional level, is also included in the indicators of achieving the sustainable development goals (SDGs) in the Republic of Kazakhstan in the field of education. The level of digital literacy of the population aged 6–74 years old in the context of regions does not seem very optimistic yet. Thus, 4 out of 17 regions of the Republic of Kazakhstan did not reach the indicator of 80% in 2020. The lowest indicator is in the Akmola region (only 74.9%), followed by the North Kazakhstan and West Kazakhstan regions (78.8% each), as well as the Mangystau region (79.6%). In other regions, the level of digital literacy varies from 80.9% (in the Zhambyl region) to 91.4% (in the city of Almaty), as shown in Figure 2.

At the time of the research from September 2021 to September 2022, Kazakhstan was actively developing the direction of digitalization. As part of the state program "Digital Kazakhstan", the main goals and objectives for the development of information technologies and the digital economy in the country were identified.

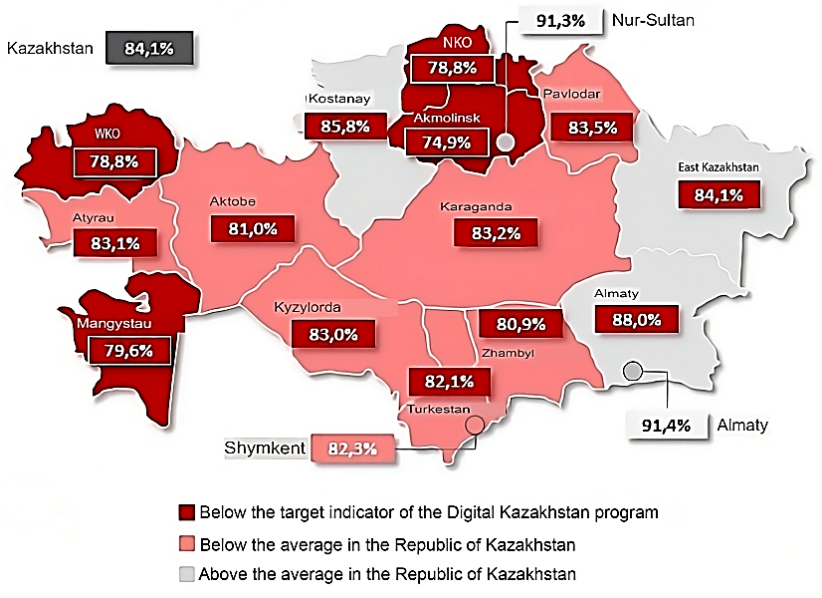


Figure 2. Digital literacy of the population aged 6–74 years (by region)

Key points as of 2022:

Infrastructure: Kazakhstan government and private sectors have made significant investments in the development of digital infrastructure. The construction of fiber optic lines, the deployment of 4G and 5G and other projects were aimed at providing access to high-speed Internet.

Electronic government: the level of provision of public services electronically has been constantly increasing. More and more services are provided to citizens and businesses via the Internet.

Education: projects for the digitalization of schools and the introduction of information technology into the educational process are actively promoted.

Digital economy: There was encouragement for the development of digital startups, support for innovation, and the creation of conditions for the integration of digital technologies into traditional sectors of the economy.

Healthcare: Implementation of an e-health system, which includes electronic medical records, telemedicine systems and other modern solutions.

Safety: Development of a security system to protect digital infrastructure and citizens' data.

However, despite these significant achievements, Kazakhstan, as many other countries, faced challenges associated with digital transformation, such as the need for workforce training, cybersecurity and other issues. Kazakhstan demonstrated strong intentions towards developing digitalization and invested significant resources in this process.

CONCLUSION

As a result of the research, in 80% of cases of lack of digital literacy of the population in the regions, it is simply unreasonable. To a lesser extent, the prices for installing new digital services, can not be compelling reason since the government introduces a huge number of quotas and services for the development of this industry. The research demonstrates that, with each passing day, these indicators are decreasing and the population is becoming more and more literate within the framework of digitalization. At present, in Kazakhstan, it is normal to get a bank card in a matter of minutes through the terminal at an ATM using only the identification of a person, all money transfers, the sale of goods, cars and even businesses are carried out through various digital applications. At present, Kazakhstan takes 20th place in the world in terms of digitalization development. The country is confidently going to take a leading position at the global level in digital development. While progress has been made, challenges remain in areas such as environmental sustainability, inequality, regional disparities, and healthcare access. Ongoing efforts are needed to ensure sustainable and inclusive development throughout the country. Regular monitoring and evaluation of progress will be crucial to address gaps and accelerate the achievement of the digital economy in Kazakhstan.

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