DIGITAL ECONOMY AS A DRIVER OF REGIONAL INTEGRATION TO
ACHIEVE ESG PRINCIPLES: THE CASE OF THE EURASIAN
ECONOMIC UNION

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ABSTRACT

Objective: Analyzing digitalization as an innovation in the government policy of Eurasian Economic Union member states, the authors attempt to establish its further impact on the supranational level of management of the integration association. The researchers also point out the effect of e-government development on the digitalization of integration processes. The purpose of the study is to investigate the effect of digitalization in the EAEU and its contribution to achieving the Sustainable Development Goals.

Methods: The study employs a comprehensive review of EAEU policies, digitalization projects, and the national strategies of member states related to digital transformation. It also examines data on the economic and social effects of these initiatives.

Results: The article reveals that the EAEU's digitalization efforts have significantly enhanced economic integration, trade efficiency, and the quality of public services. These digital initiatives have also shown promise in addressing environmental challenges and promoting sustainable economic growth. The results underscore the importance of digital infrastructure and cross-sectoral cooperation in achieving these outcomes.

Conclusion: In conclusion, digitalization within the EAEU is proving to be a transformative force, shaping the region's economic landscape and contributing to sustainable development. By embracing digital technologies and fostering collaboration among member states, the EAEU is well-positioned to harness the full potential of the digital economy while addressing critical sustainability issues. To maximize the benefits and mitigate challenges, continued coordination and investment in digital skills and infrastructure are essential for the EAEU's long-term success in the digital era.

Keywords: digitalization, regional integration, internationalization of higher education, quality of higher education, "diploma mills", Eurasian Economic Union, EAEU.

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RESUMO

Objetivo: Analisando a digitalização como uma inovação na política governamental dos Estados membros da União Econômica Eurasiaítica, os autores tentam estabelecer seu impacto adicional no nível supranacional de gestão da associação de integração. Os pesquisadores também apontam o efeito do desenvolvimento do governo eletrônico na digitalização dos processos de integração. O objetivo do estudo é investigar o efeito da digitalização na UEO e o seu contributo para a realização dos Objetivos de Desenvolvimento Sustentável.

Métodos: O estudo emprega uma revisão abrangente das políticas da UEA, projetos de digitalização e estratégias nacionais dos Estados-Membros relacionadas à transformação digital. Examina igualmente dados sobre os efeitos econômicos e sociais destas iniciativas.

Resultados: O artigo revela que os esforços de digitalização da UEO melhoraram significativamente a integração econômica, a eficiência comercial e a qualidade dos serviços públicos. Estas iniciativas digitais revelaram-se igualmente promissoras para enfrentar os desafios ambientais e promover o crescimento econômico sustentável. Os resultados sublinham a importância das infraestruturas digitais e da cooperação intersectorial para alcançar estes resultados.

Conclusão: Em conclusão, a digitalização no seio da UEO está a revelar-se uma força transformadora, a moldar o panorama econômico da região e a contribuir para o desenvolvimento sustentável. Ao adotar as tecnologias digitais e promover a colaboração entre os Estados-Membros, a EAEU está bem posicionada para explorar todo o potencial da economia digital, abordando simultaneamente questões críticas de sustentabilidade. A fim de maximizar os benefícios e atenuar os desafios, a coordenação e o investimento contínuos em competências e infraestruturas digitais são essenciais para o sucesso a longo prazo da UEA na era digital.

Palavras-chave: digitalização, integração regional, internacionalização do ensino superior, qualidade do ensino superior, "moinhos de diplomas", União Econômica Eurasiaítica, EAEU.

1 INTRODUCTION

The recent years have been marked by the exponential introduction of information technologies into all spheres of human life. The use of IT in response to external challenges has stimulated the intensification of digital transformation within the global economic system. As a result, many countries have marked the transition to a digital economy as a promising area of development.

Regional integration is another trend on the world stage in recent decades. Following the successful example of the European Union, other regional organizations, such as the Eurasian Economic Union, are taking measures to enhance cooperation.
Regional integration processes and the strengthening of interaction between states deserve special attention since their efficiency rises markedly if they take place on a digital platform. In this paper, using the example of the EAEU, we attempt to evaluate the level of digitalization of member states’ economies and the impact of this factor on further integration processes.

Studying the relationship between digitalization and integration is important for several reasons. First, EU member states consistently take higher positions by digitalization indices. For instance, the Digital Economy and Society Index (DESI), which includes digital economy indicators and tracks the progress of EU countries in digital competitiveness, demonstrates the positive effects of the European Commission’s efforts on digital transformation. DESI focuses on helping EU countries identify the areas that require priority investment and measures to create a true Digital Single Market. It is expected that in the upcoming years, the reinforcement of the EU’s digital space will be continued through the Digital Europe Program, which is a new EU funding program aimed at embedding digital technologies in business, civil society, and public institutions. The fact that the EU is the strongest integration project to date suggests a positive correlation between digitalization and successful integration. We can thus unarguably assume that the higher the level of digitalization, the higher the level of integration between states.

Second, the cause-and-effect link between digitalization and integration is not well substantiated in the literature. It is yet unclear whether digitalization influences integration or if integration boosts digitalization. Some researchers argue that it is digitalization that entails integration (Adeniran & Osakwe, 2021; Eremenko, 2021), while others assert that integration raises the level of digitalization (Shinkaretskaya & Berman, 2019). Some authors even suggest that the relationship between regional integration and participation in the digital economy is a favorable cycle, each iteration of which increases the favorable effect of the next (Duval, 2020).

Since the collapse of the Soviet Union, the former republics have attempted to come together under some form of union. These attempts have mostly failed, with the exception of the EAEU, which became an economic union in January 2015. The founding countries of the union – Belarus, Kazakhstan, and Russia – were joined by Armenia in 2014 and Kyrgyzstan in 2015. The level of digitalization in EAEU member states is lower than the world average.
of seven leading world digitalization rankings (Table 1) demonstrates that the EAEU’s average ranking is 49th, with several rankings not covering all countries in the world.

Table 1: EAEU member states in international digitalization rankings

<table>
<thead>
<tr>
<th>Country</th>
<th>ICT Development Index, 2017</th>
<th>IMD World Competitiveness Ranking, 2021</th>
<th>UN E-Government Development Index, 2022</th>
<th>Networked Readiness Index, 2022</th>
<th>E-Participation Index, 2022</th>
<th>Global Connectivity Index, 2020</th>
<th>Global Innovation Index, 2022</th>
<th>Average ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia</td>
<td>75</td>
<td>-</td>
<td>64</td>
<td>64</td>
<td>-</td>
<td>80</td>
<td>45.1</td>
<td></td>
</tr>
<tr>
<td>Belarus</td>
<td>32</td>
<td>-</td>
<td>58</td>
<td>-</td>
<td>90</td>
<td>47</td>
<td>77</td>
<td>43.4</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>52</td>
<td>32</td>
<td>28</td>
<td>58</td>
<td>15</td>
<td>45</td>
<td>83</td>
<td>44.7</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>109</td>
<td>-</td>
<td>81</td>
<td>95</td>
<td>79</td>
<td>-</td>
<td>94</td>
<td>65.4</td>
</tr>
<tr>
<td>Russia</td>
<td>45</td>
<td>42</td>
<td>42</td>
<td>40</td>
<td>57</td>
<td>42</td>
<td>47</td>
<td>45</td>
</tr>
<tr>
<td>EAEU</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>49.44</td>
</tr>
</tbody>
</table>


Recognizing the importance of digitalization for strengthening integration, on December 26, 2016, the leaders of EAEU countries signed the EAEU 2025 Digital Agenda Statement. The adoption of the Agenda launched the process of creating a single policy to coordinate activities in the field of digital transformation and defined the main indicators of its implementation for all members of the EAEU (Decision…, 2016). In this study, we analyze the EAEU from the perspective of digitalization and integration, including the role of higher education in training personnel for the digital economy of the union. We argue that the EAEU envisages the creation of a common market, which necessitates the creation of a unified digital space not at the level of each individual state, but across the entire Union. The establishment of a unified EAEU information system has opened up new opportunities for addressing both the current challenges of economic integration and promising areas of digital transformation.

2 METHODS

The presented qualitative study on the example of the EAEU is both descriptive (disclosing the level of digitalization in EAEU countries) and explanatory (investigating the relationship between digitalization and integration). It relies on the developments of scientists and experts that shed light on the essence and peculiarities of the digital
economic, the relationship between digitalization of the economy and regional integration processes, and trends in the development of EAEU member states' economies and their digital transformation (Tapscott, 1995; Negroponte, 1995; Atkinson & McKay, 2007; Bukht & Heeks, 2018; Zaitsev, 2019; Park, 2021; Duval, 2020; Lopez Gonzalez, 2020; Inshakova et al., 2020). The empirical foundation includes statistical data, analytical studies, and regulatory documents of the Eurasian Economic Commission, the UN Commission on Trade and Development, and the World Bank.

The methodological basis of the study consists of comparative, document, content, and cause-effect analysis. The Ishikawa diagram (fishbone diagram) is employed as a graphic method to demonstrate cause-effect relationships between aspects in the development of the common digital space of the EAEU.

3 RESULTS AND DISCUSSION

3.1 DIGITALIZATION AND INTEGRATION

The spread of information and communications technology (ICT) and the transition to a digital economy accelerate regional integration processes due to several reasons. First, the digital economy stimulates the growth of trade relations and employment within the region, which entails a paradigm shift in regional development. Second, the introduction of ICT brings about rapid development and innovation, which allows to increase productivity, change approaches to business, and improve international dialogue, including the integration of production processes and reduction of borders. However, there are some major problems that need to be addressed for the sake of building a real regional association without borders. The analysis and recommendations given in this section shed light on the possible solutions to these issues.

The study was built within the framework of positions on the development of Eurasian integration. First, Eurasian integration is aimed at forming a full-fledged competitive global and regional economic association. Second, the EAEU is a modern integration project of a purely economic orientation that now demonstrates its readiness to interact with key integration projects in the Eurasian space. At the same time, ideas of forming a society of EAEU citizens, the highest value of which would be human capital, are being promoted. Finally, following current technological trends, the leaders of EAEU are establishing a common economic space relying on digital technology and innovation.
Since the priority of EAEU lies in economic relations, the interrelation between digitalization and integration processes is considered from the perspective of the digital economy. To determine the contribution of the digital economy to the strengthening of the integration association, it was also important to explore approaches to the definition of digital economy from the standpoint of the scientific community and international organizations.

Considering all the aspects that accompany regional integration processes, it can be concluded that regional integration is a multidimensional process. It traditionally encompasses such directions as trade and investment, money and finance, regional value chains, infrastructure and communications, people’s movement, and institutional and social integration. At present, technologies and digital communications act as a new dimension of integration processes (Park, 2021).

Digitalization in the framework of regional integration simplifies the turnover of goods, money, and services and makes it easier for people in the region to cross borders, which ultimately helps to support sustainable development, considering its effects on the economy, society, and the environment (Duval, 2020).

Overall, scientific and technical progress is not only a critical factor in production but also one of the most visible factors of international integration. The spread of new safe solutions contributes to a stronger economic integration based on common technological platforms (e.g., Windows OS, Microsoft Office applications, Google and Yahoo! search engines, Intel microprocessors, positioning systems (GPS), automated enterprise planning, accounting, and management systems (SAP)) (Dagaev, 2010).

An urgent task stemming from global trends of creating a unified harmonized economic policy focuses on enhancing the competitive advantages of EAEU member economies. The EAEU's focus on the new digital agenda reflects the desire to ensure the organization's viability by improving competitiveness at national and supranational levels. This makes it possible to ensure information interaction between state bodies, including interstate exchange of data and electronic documents, as well as to support the activities of the Union's bodies. At the same time, it should be noted that the digitalization of the economy affects both the sectoral structure of the economy and the system of interconnections between sectors. For this reason, the harmonization of digital transformations proceeds in a non-uniform and asynchronous manner, as each country has different starting conditions and resource capacities. Meanwhile, digitalization and
integration have a cyclical relationship, complementing and stimulating each other. For this reason, we believe that studying the homogeneity of digital transformation of EAEU countries, the prospects of digital development, and especially the use of digital tools to increase the level of perception of the EAEU as an integrated group is of certain scientific interest.

Since the establishment of a common market on the territory of the EAEU assumes the liquidation of trade barriers, further digitalization will improve trade processes within the integration union. Relying on our observations, we can conclude the following:

- Digitalization is not just about the ICT sectors: it refers more to the expansion of trade in goods and services.
- Digitalization brings more benefits from trade agreements.
- Digitalization generates new relationships in the circulation of goods and services.
- Firms that sell goods now worry about barriers to services (and vice versa).
- Regulation affecting digital commerce becomes more stringent (Lopez Gonzalez, 2020).

The development of e-government and digital infrastructure also enables country leaders to find concrete solutions that can improve people's quality of life.

Analyzing the advantages of digital economy development, we can conclude that economic growth is directly related to the development of digital technologies in EAEU member states. Moreover, digital integration is a key component of economic integration.

3.2 INTERPRETATION OF THE DIGITAL ECONOMY

The digital economy is a relatively new phenomenon. Having emerged at the dawn of the 1990s, it has undergone significant changes in interpretation due to advances in digital technology. Definitions of digital economy in Russian and foreign research are quite diverse. In some sources, the starting point is the concept of data economy proposed by N. Negroponte (Zaitsev, 2019: 109), others rely on the digital economy of D. Tapscott (Bukht & Heeks, 2018: 146). These two concepts emerged practically simultaneously. However, while Negroponte, being a computer scientist, formulates the concept of digital economy based on the transition of mankind in its economic activities from processing atoms to processing electronic bits (Negroponte, 1995: 12), Tapscott, as an expert in
business strategies, describes the economy based on digital technology as "the age of networked intelligence", which "is not only about the networking of technology..., and smart machines..., but about the networking of humans through technology that combines intelligence, knowledge, and creativity for breakthroughs in wealth creation and social development" (Tapscott, 1995: 86).

While the traditional economy is based on physical stores, goods, and cash payments, the digital economy refers to economic activities that utilize electronic communications and digital technologies to provide goods and services. The main building blocks of the digital economy are the Internet, email, digital automation, digital payments, artificial intelligence, and social media (Pettinger, 2020). In this framework, IT acts as a driver of economic growth (Atkinson & McKay, 2007).

The key factors that capture the benefits of the transition to a digital economy in the 21st century are outlined as follows:

- for states, digitalization will allow for more effective security, systematization, and automation of processes within political and public life;
- for businesses, digitalization will help not only to optimize costs but also to maximize profits;
- digitalization will enable people to move to a new level of human culture, which will give them the opportunity to realize their creative potential, providing the digital economy with ideal mechanisms (Khalova & Khalov, 2021).

Thus, successful digital transformation increases people’s welfare (Petersen, 2019). Countries that do not follow the digital development trajectory experience a decrease in GPD per capita, as demonstrated in Table 2. For comparison, we present the indicators of Angola and Zimbabwe, which show a negative trend in the ICT Development Index. These countries have negative GDP dynamics in the following years. Kyrgyzstan and Uzbekistan, which are also outsiders according to the ICT Development Index (among EAEU countries), but continued the policy of digital development, demonstrate positive changes in GDP.
Table 2: Relationship between GPD per capita (PPP) and the level of digital development.

<table>
<thead>
<tr>
<th>Country</th>
<th>ICT Development Index, place in the ranking, 2016/2017</th>
<th>GDP per capita, PPP, International $, 2018/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>156/160</td>
<td>7,102/6,966</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>133/136</td>
<td>3,206/2,961</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>109/110</td>
<td>5,258/5,486</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>95/103</td>
<td>6,920/7,308</td>
</tr>
</tbody>
</table>

Source: International Telecommunication Union (2017), World Bank (2019). The table is compiled by the authors.

Thus, the digital transformation of the economy becomes a prerequisite for securing and increasing the country's prosperity.

3.3 EAEU AND DIGITALIZATION

Today, the EAEU stands as a truly functioning integration union in the post-Soviet space. At the initial stage, the initiative of Eurasian integration in the format of the Eurasian Union came from the first President of the Republic of Kazakhstan Nursultan Nazarbayev in 1994. Since it was not possible to build an economic union based on the Commonwealth of Independent States with the participation of all countries, several states started attempts to create a narrower, yet effectively functioning association. As a result, in 1995, the Russian Federation, the Republic of Belarus, and the Republic of Kazakhstan signed an agreement on the creation of the Customs Union, initiating the formation of the EAEU’s integration core.

The next stage of integration was the February 1999 Agreement on the Establishment of the Customs Union and Common Economic Space within the five CIS countries – Russia, Belarus, Kazakhstan, Kyrgyzstan, and Tajikistan. On the basis of this Agreement, the Eurasian Economic Community (EurAsEC) with the same participants was established in Astana in October 2000. The primary goals of the EurAsEC were the development of economic interaction and trade, the effective establishment of the Customs Union and the Common Economic Space, and the coordination of actions of the Community states in integrating into the world economy and the international trade system. The EurAsEC demonstrated the possibility of a more efficient economic integration and laid the legislative, legal, and functional foundations for Eurasian integration. Thus, in 2012, discussions began on the transformation of the EurAsEC into the EAEU.

On May 29, 2014, the Treaty on the EAEU was signed at the meeting of the Supreme Eurasian Economic Council in Astana. This marked the launch of the EAEU on
January 1, 2015. The EAEU represents a deeper stage of integration than the Free Trade Zone or the Customs Union (Lapenko, 2018: 37). The EAEU ensures the free movement of goods, services, capital, and labor, as well as the implementation of coordinated and unified policies in economic sectors. The members of the EAEU are the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Kyrgyz Republic, and the Russian Federation. However, the objectives of the Union, as set out in the EAEU Treaty, characterize this organization as purely economic.

3.4 DIGITALIZATION AS A NEW PARADIGM OF INTEGRATION

The starting point for the digitalization of the EAEU was the Statement on the Digital Agenda of the EAEU, signed on December 26, 2016 by the heads of the member states. Reaffirming their commitment to further promote integration, strengthen the common economic space, and deepen cooperation between the member states, the parties recognized with this statement the need to develop the digital economy and set the EAEU’s digital agenda (Decision, 2016).

In 2017, the Supreme Eurasian Economic Council approved the Main Directions for the Implementation of the EAEU Digital Agenda until 2025. The document defines the goals, principles, objectives, directions, and mechanisms of cooperation between the member states of the Union in the digital sphere. The Digital Agenda focuses on maintaining the relevance of the established mechanisms of integration cooperation within the Union, considering the global challenges of digital transformation, and ensuring quality and sustainable economic growth in the member countries, especially for the accelerated transition of economies to a new technological paradigm and the development of new industries, markets, and labor resources. These efforts will synchronize digital transformations and enable the evolution of industries in member states. The application of ICT will extend not only to the implementation of the digital agenda, but also to the creation of new business processes, digital models, and digital assets.

The EAEU Digital Agenda has several projects underway (Eurasian Economic Commission, 2020):

1. *The integrated information system* – a geographically distributed information system providing communication for the realization of common processes,
interstate exchange of data and electronic documents, as well as the activities of
the Union's governing bodies.
2. *The Jobs Without Borders unified search system* to create a search system that
will provide access to information on current vacancies and job seekers stored in
the respective information systems of member states. The Jobs Without Borders
unified search system was launched on July 1, 2021, becoming the first joint
digital project in the EAEU countries.
3. *The digital transport corridor ecosystem* – an open digital space for the
exchange of logistics information. It includes various digital platforms and
information systems owned and operated by companies and/or government
agencies. The ecosystem includes information on vehicles, crews, cargo, permits,
and supporting documents at all stages of transportation or technological
activities.
4. *The Eurasian Network of Industrial Cooperation, Subcontracting, and
Technology Transfer*, which assumes the creation of a digital ecosystem to provide
for the interaction of enterprises for industrial cooperation, subcontracting, and
technology transfer (Eurasian Economic Union, 2021).

In parallel with the common Digital Agenda, EAEU member states independently
develop, shape, and implement national policies in the field of digitalization and
informatization, ensuring the sustainable operation and security of the common
information and communication space and digital infrastructure.

For example, on February 11, 2021, the Republic of Armenia adopted the Strategy
of Digitalization of Armenia for 2021-2025 (Strategy, 2021). The strategic directions of
digitalization include the public administration system (development and improvement
of digital systems), the internal administration system (public services sector and e-
identification), the economy (e-commerce, digital business, digitalization of industry),
and the digitalization of society (development of digital skills, informing society about
digital platforms).

In the Republic of Belarus, the State Program "Digital Development of Belarus"
for 2021-2025 was approved by the Resolution of the Council of Ministers №66 on
February 2, 2021. The Program provides for measures on the creation (development) of
modern information and communication infrastructure, the introduction of digital
innovations in economic sectors and smart city technology, as well as information security (State Program, 2021).

In the Kyrgyz Republic, the Concept of Digital Transformation "Digital Kyrgyzstan 2019-2023" was approved by the decision of the Security Council № 2 of December 14, 2018.

Since 2018, the State Program "Digital Kazakhstan" (Government Resolution № 827 dated December 12, 2017) has been implemented in the Republic of Kazakhstan. Its goal is to accelerate the development of the country's economy and improve the population's quality of life through the use of digital technologies in the medium term, as well as to create conditions for the transition of Kazakhstan's economy to a fundamentally new trajectory of development, ensuring the creation of a digital economy of the future in the long term (State Program, 2017). Since 2022, Kazakhstan has been implementing a digitalization strategy within the framework of the National Project "Technological Breakthrough through Digitalization, Science, and Innovation", which envisages a new level of transition to digitalization, including in the social sphere.


Although each country in the Union takes its own path in the development of high technologies, there should be an opportunity to integrate into the digital sphere. According to UN experts, the expansion of the digital economy creates many new economic opportunities:

- Digital data can be used for development and addressing social challenges, helping to improve economic and social outcomes, as well as stimulating innovation and productivity growth.
- Digital platforms simplify transactions, network interaction, and information exchange.
- The transformation of all sectors and markets through digitalization can enable the production of higher-quality goods and services at lower costs.
Digitalization transforms value chains in various ways and opens new channels for value creation and broader structural variability (United Nations, 2019).

ICTs are important as technologies with the potential for faster growth and higher productivity. It is difficult to estimate the benefits of the digital economy because of the difficulty of accounting for linkages and assessing the permeation of digitalization in the economy. Effect assessment is mainly done in the context of GDP dynamics. Increased trade turnover due to digitalization may give a new impetus to the EAEU economy. For example, with a digitalization rate of 20%, additional retail growth is expected to reach 0.92% of GDP by 2025 (Inshakova et al., 2020: 992). The multiplier effect of measures to digitalize the economy at the Union level is confirmed by the forecast data of the Eurasian Economic Commission and the World Bank, which suggest that total EAEU GDP growth related to the Digital Agenda will amount to 10.6% of the expected total EAEU GDP growth by 2025. Important factors when considering the impact of digital initiatives on GDP growth in the region through 2025 are broadband availability (plus 1.7% to GDP), increased international bandwidth (plus 0.66% to GDP), and the proliferation of e-commerce (plus 0.88% to GDP) (Eurasian Economic Commission and the World Bank Group, 2018).

Figure 1 shows the dynamics of change in the EAEU GDP volume since the Union's inception in 2015. The data shows a positive trend, meaning that despite the constraints of the pandemic and quarantine measures (closing of borders, distance working, etc.), the Union has managed to maintain a fairly high level of overall GDP by utilizing digital technologies.
Another positive effect of digitalization was the availability of digital infrastructure, which was the most important factor in the effectiveness of government support measures during the COVID-19 pandemic. The UN e-Government Development Index in Table 3 shows mainly positive dynamics in the transformation of government structures' operations in favor of the population.

Table 3: EAEU member states in the E-Government Development Index of the UN.

<table>
<thead>
<tr>
<th>Country</th>
<th>2016</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia</td>
<td>87</td>
<td>64</td>
</tr>
<tr>
<td>Belarus</td>
<td>49</td>
<td>58</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>33</td>
<td>28</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>97</td>
<td>81</td>
</tr>
<tr>
<td>Russia</td>
<td>35</td>
<td>42</td>
</tr>
</tbody>
</table>


Against this background, the Eurasian Development Bank's project "Travel without COVID-19" stands out. It became the first digital project implemented on the territory of the EAEU that was created in the interests of the population. The "Travel without COVID-19" platform restored the free movement of citizens between Armenia, Russia, and Belarus (Official Information Resource of the Prime Minister of the Republic of Kazakhstan, 2021).
Despite the positive developments in the formation of a single digital space, there are several issues that call for the attention of the EAEU supranational bodies and the leadership of the member countries:

1) the level of use of digital technologies by the majority of the population of EAEU member states remains low due to mistrust in digital solutions, lack of understanding of the benefits of digitalization, and insufficient competence;
2) in the absence of proper control over digitalization, some risks may cause upheavals in society; for example, online tools (including social media) can be used to shape protest sentiments (Gurov, 2019);
3) automation and robotization may cause an imbalance in the labor market by displacing the labor force from production, which may lead to increased unemployment;
4) there is a risk of brain drain from one EAEU country to another due to an imbalance in human resource capacity in the IT sector;
5) if approaches to digitalization are not unified under common standards, there is a risk of increasing the gap between the leader and outsider countries in digitalization.

Strengthening regional integration by creating a common EAEU digital space is possible by implementing a set of measures in four clusters (Figure 2):
- **Supranational level**: developing and adopting common legal instruments; unification of digitalization policies; creating and utilizing common systems and databases; equalization of digital imbalances across member states.
- **National level**: political will on the part of country leadership, the development and adoption of national legal acts, increased investment in IT/ICT, and provision of cybersecurity.
- **Business level**: deployment of digitalization and the transformation of business processes; adaptation of employees to new technologies; the development of innovation in enterprises; the creation of partnerships and cooperation within the EAEU business environment.
- **Society (population) level**: the development of IT skills and competencies; informing (educating) the population about the possibilities of EAEU digital platforms; increasing the accessibility of the Internet and digital resources.
All EAEU member states are also members of at least three other integration projects – the CIS, the Belt and Road Initiative (BRI), and the Collective Security Treaty Organization (CSTO) (Table 4). In this connection, it can be assumed that the digital transformation of EAEU will positively affect the implementation of digitalization and innovative development projects in the framework of CIS, BRI, and CSTO. This, in turn, will strengthen partnerships between countries in these associations. Given the technological capabilities of the Chinese economy, we can conclude that the convergence of Eurasian integration with China's BRI will be most successfully realized on a unified digital platform. The digital space of the EAEU can be used in the framework of the CSTO to combat cybercrime and information war threats. Thus, the digitalization of one integration association can help reinforce integration processes in other ones.

Table 4: Membership in selected regional and subregional organizations

<table>
<thead>
<tr>
<th>Country</th>
<th>EAEU</th>
<th>CIS</th>
<th>BRI</th>
<th>CSTO</th>
<th>SCO</th>
<th>Union State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia</td>
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<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Belarus</td>
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<td>+</td>
<td></td>
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</tr>
<tr>
<td>Kazakhstan</td>
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<tr>
<td>Kyrgyzstan</td>
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<tr>
<td>Russia</td>
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<td>+</td>
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</tbody>
</table>

Source: Created by the authors

3.4.1 Digitalization of education: quality of workforce training for the digital economy

Analyzing the case of EAEU, we can also conclude that digitalization entails not only economic trade integration but also the possibility of educational, scientific, and technological integration. At the time of the EAEU’s creation, for example, there were discussions about the feasibility of integration in the field of education. In turn, the adoption of the digital agenda and the need to build human capacity in the IT/ICT area have created a need to coordinate approaches to education policies across the countries. Nevertheless, according to the statement of the President of the Republic of Kazakhstan Kassym-Jomart Tokayev, voiced at the meeting of the Supreme Eurasian Economic Council on May 19, 2020, "full inclusion of such issues as healthcare, education, and science in the competence of the Eurasian Economic Commission may significantly change its economic orientation, in other words, it would contradict the essence of the Treaty on the Establishment of the EAEU" (Forbes Kazakhstan, 2020).

Despite the varying approaches of member countries to the incorporation of the science and education component into the EAEU integration agenda, there now exist some prerequisites for reconsidering the role of education. The Agreement on mutual recognition of academic degrees in the EAEU States signed in June 2023 significantly raises requirements for the quality of training of scientific personnel in higher education institutions.

Furthermore, quality training of specialists for the IT industry specialists is called upon to ensure the formation of a unified EAEU digital space with qualified personnel, including reducing the outflow of personnel outside the Union in conditions of geopolitical instability.

The urgency of digitalization of the educational process is shaped by current and nearing uncertainty about how effectively training processes should be organized in the post-pandemic period. In this context, it is particularly important to share experiences and
seek common approaches among education professionals and organizations, including at the regional and international levels.

The coronacrisis has particularly exacerbated the situation surrounding education as it has forced the system to quickly transition to being online. The digitalization of education raises an entire range of problems and issues, and the deeper the transition to the digital format is realized, the less relevant the technical issues become, and methodological tasks are put forward to respond to the main question – how not to lose the quality of education. These processes require all members of the academic community to come together and engage in dialog to create and implement new professional standards and improve student evaluation systems.

Teachers will have to rethink the pedagogical practices employed and reformat the content of education. For example, O. Shmurygina (2020) notes that teachers should not focus on the amount of in-person work adequate for the traditional form of teaching, but prioritize learning outcomes. She also emphasizes the need to reconsider the time allotted for theoretical training, its format, and the need to develop online simulations to reinforce skills.

In the United States, higher education is one of the five major sectors of the so-called sharing economy (among them are travel, rental car sharing, finance, and video and music streaming). The market for these sectors of the sharing economy is the fastest growing. Some estimates put its growth in the US at over 220%: from $15 billion in 2015 to $335 billion in 2025 (Telles Jr., 2016: 7).

In 2021, the conversation at the headquarters of the Eurasian Economic Commission in Moscow touched upon the prospects of creating a unified information environment for the scientific community of EAEU members. The project aims to ensure the synchronized development of digital technologies in science and education among EAEU member states, thereby increasing the overall scientific potential of the EAEU. For this purpose, at the first stage of its practical realization, it is planned to create a unified scientific and educational network infrastructure with access to information systems and knowledge bases of universities and scientific institutions, as well as digital scientific and educational services, including projects for the development of artificial intelligence technologies in EAEU member states.

In this regard, D. Volvach, Deputy Minister of Economic Development of Russia, notes: "The creation of a unified service for information interaction of the scientific
community is fully in line with the strategic objectives of the Union and will ensure breakthrough growth of high-tech and promising sectors of the Union's economy. Such interaction between countries will provide access to the highly demanded unique research equipment, the so-called supercomputers” (CNews, 2021).

The synthesis and interconnection of education and science, on the one hand, and industry and trade, on the other hand, can be traced through the process of digital modernization of the EAEU oil and gas industry (Abukova et al., 2018). The digital oil and gas economy is characterized by the active spread of digital technologies in the oil and gas industry, increasing unification of digital standards and services in the oil and gas sector, and a decline in the number of transactions based on blockchain technology between business entities in the global oil and gas market. The major trends in the oil and gas business processes include digitalization, intellectualization, optical optimization, robotization, and the gradual replacement of workplaces by robotic complexes (Kamaeva & Eremin, 2017). A serious challenge for the digital oil and gas economy should be considered the industry's high demand for new specialties (a set of knowledge and skills in digital professions obtained at oil and gas universities under new curricula) and advanced training of engineering and technical personnel of oil and gas companies up to the current level of professional requirements via short courses at oil and gas universities. The digitalization of oil and gas education in EAEU countries consists of the modernization of traditional oil and gas education and its expansion using digital educational platforms and information and communication systems that allow students and learners to access educational materials from oil and gas universities and research institutes, online research data, and open oil and gas article databases. One of the possible solutions is a further development of distance learning based on mass open educational courses in new specialties in the oil and gas industry.

We hypothesize that since the Republic of Belarus is one of the digital leaders of the EAEU, its experience of digitalization in higher education can be relevant to other partners in terms of improving the quality of training. For example, the Concept of Development of Higher Education and Science in the Republic of Kazakhstan for 2023-2029 adopted by the Resolution of the Government of the Republic of Kazakhstan of March 28, 2023 № 248 sets ambitious tasks for Kazakhstani universities to develop the digital architecture of higher education and raise the digital competencies of citizens. Already today, the educational process of universities in Kazakhstan includes certain
Digitalization tools that provide academic integrity and transparency. The automation of university admission procedures and procedures for obtaining places in student dorms, the introduction of proctoring systems, electronic systems for recording student attendance and progress, online checking of works for plagiarism and borrowings, electronic duplicates of education diplomas, and increasing requirements for teachers' digital skills affect the quality of organization of the educational process and significantly reduce the number of "diploma factories". Furthermore, Moreover, in July 2023, Kazakhstan for the first time issued diplomas based on the use of blockchain technology and NFT (non-fungible tokens) (Kazakh-British Technical University, 2023). A digital diploma in the NFT format cannot be forged, and the issuance of NFT diplomas allows for verifying the authenticity of the diploma.

4 CONCLUSION

The rapid growth of the digital economy, on the one hand, presents new important challenges for regional integration. On the other hand, it offers opportunities to utilize the improved tools to face these challenges. During the COVID-19 pandemic, the economies of EAEU countries showed a fairly high level of stability, which is largely attributed to the increasing spread of digital technology in all spheres of the public and private sectors.

The establishment and gradual development of the digital space of the EAEU proceeds in accordance with the global trends of world economic development. In the context of the digitalization of international trade, the digital transformation of EAEU member countries will facilitate the development of trade within the integration association, thus giving an impetus to the development of the EAEU economy.

For the sake of gradual redistribution of digital benefits and a higher economic multiplier, there is a need for the digitalization of public administration, economy, business included, and society in the format of a unified integration association. The importance of the task owes to the dramatically changing challenges of the digital sector and the already existing imbalance in the digital development of EAEU member states.

The success of projects on the digital transformation of EAEU countries' economies depends on the efforts of all stakeholders and their willingness to cooperate and change. In this regard, strengthening regional integration through the creation of a single EAEU digital space is possible through the implementation of a set of measures at the supranational, state, business, and public (population) levels: finding alternative ways
to develop policies that allow rapid technological progress; expanding business opportunities; improving public services; developing IT skills, improving the quality of training, including for digitalization, etc.

Acceleration of the digital transformation of trade relations and various spheres of social life of EAEU countries will deepen integration processes and contribute to the regional and global competitiveness of both individual EAEU countries and the entire Union. The development of national initiatives will require the Union countries to interact to overcome new barriers to digitalization. The countries’ digitalization programs need to be coordinated (including the applied standards, means of interaction, opportunities to use the developed systems). Deepening integration through the removal of barriers, the harmonization of national digitization programs, and the establishment of a system of modern governance beyond national governance creates favorable conditions for both business and the well-being of citizens.

ACKNOWLEDGMENTS

This research was funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No. AP09260789).
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May 6, 2021

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