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DIGITAL KAZAKHSTAN – AN INNOVATION WAY OF DEVELOPMENT

The article introduces the digital transformation of modern Kazakhstan, which is developing along an innovative path of development, increasingly developing communication technologies in the period of globalization and digital revolution. Kazakhstani society is moving to a new level of development in the context of digitalization of the information space in the country.

The object of the research is the modern media landscape of the 21st century with new digital, network technologies that modernize and influence life in Kazakhstan. The subject of the research is the country's information infrastructure, which, under the influence of digital transformation, is changing society and the media space, which is largely facilitated by the state program «Digital Kazakhstan».

The aim is to study the process of digital transformation in the country against the backdrop of a new technological environment and deepening information globalization, which has not only changed the country's infrastructure but also influenced lifestyle, media development and perception. To prove it, the following methods were used: principles of historical, complex and systemic analysis, basic concepts of the development of digital transformation of society, generalization of historical, socio-political and information phenomena that are the main factors in the modernization of modern society.

The results are as follows: in communication between civilizations, significant results are achieved in the exchange of spiritual and scientific achievements. In the modern world, there is an intensification of information influence, which requires knowledge of the communication specifics of each country, the development of principles of interaction on a national, regional and global scale. Thanks to digitalization, Kazakhstan's economy should grow by 30%. Currently, Kazakhstan ranks 33rd in the world in terms of digitalization. This program will ensure the development of IT in the country. The introduction of digital technologies is one of the most important tasks, for which 14 projects are being implemented with a total cost of 140 billion tenge. Using new technologies in the country, they plan to increase labor productivity in the industrial sector by one and a half times in five years. In the article, the authors tried to show the transformation of Kazakhstani society, which is following an innovative path of development, implementing the state program «Digital Kazakhstan».

Key words: Digital Kazakhstan, government programs, innovation, information and communication technologies, mass communication.

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Цифрлық Қазақстан – инновациялық даму жолы

Мақалада жаһандану және цифрлық революция кезеңінде коммуникациялық технологиялардың барған сайын дамып келе жатқан дамудың инновациялық жолында дамып келе жатқан заманауи Қазақстанның цифрлық трансформациясы таныстырылады. Қазақстандық қоғам Еліміздегі ақпараттық кеңістікті цифрландыру жағдайында дамудың жаңа деңгейіне өтуде.

Зерттеу нысаны – Қазақстан өмірін модернизациялайтын жаңа цифрлық, желілік технологиялары бар 21 ғасырдағы заманауи медиа-ландшафтқа әсер етеді. Зерттеу пәні – цифрлық трансформацияның әсерінен қоғамды және медиа-кеңістікті өзгертетініп жатқан еліміздің ақпараттық инфрақұрылымы, оған «Цифрлық Қазақстан» мемлекеттік бағдарламасы айтарлықтай септігін тигізеді.

Мақсат – елдің инфрақұрылымын өзгертіп қана қоймай, өмір салтына, бұқаралық ақпарат құралдарының дамуы мен қабылдауына әсер еткен жаңа технологиялық орта және ақпараттық жаһандану үдерісін тереңдету жағдайында еліміздегі цифрлық трансформация үдерісін зерттеу. Дәлелдеу үшін келесі әдістер қолданылды: тарихи, кешенді және жүйелік талдау принциптері, қоғамның цифрлық трансформациясы дамуының негізгі тұжырымдамаслары, қазіргі қоғамды

жаңғыртудың негізгі факторлары: болып табылатын тарихи, әлеуметтік-саяси және ақпараттық құбылыстарды жалпылау.

Нәтижесінделері мынадай: Өркениеттер арасындағы байланыста рухани және ғылыми жетістіктермен алмасуда айтарлықтай нәтижелерге қол жеткізіледі. Заманауи әлемде әр елдің ақпараттық ерекшеліктерін білуді, ұлттық, аймақтық және жаһандық ауқымдағы өзара әрекеттестік принциптерін дамытуды талап ететін заманауи қоғамдардың трансформациясы, бұқаралық коммуникацияның қарқындауы жүріп жатыр. Цифрландырудың арқасында Қазақстан экономикасы 30 пайызға өсуі керек. Қазіргі таңда Қазақстан цифрландыру бойынша әлемде 33-ші орында. Бұл бағдарлама елімізде IT-ның дамуын қамтамасыз етеді. Цифрлық технологияларды енгізу маңызды міндеттердің бірі болып табылады, ол үшін жалпы құны 140 млрд теңгені құрайтын 14 жоба жүзеге асырылуда. Елімізде жаңа технологияларды пайдалана отырып, олар бес жылда өнеркәсіп саласында еңбек өнімділігін бір жарым есеге арттыруды жоспарлап отыр. Мақалада авторлар «Цифрлық Қазақстан» мемлекеттік бағдарламасын жүзеге асыра отырып, дамудың инновациялық жолына түсіп келе жатқан қазақстандық қоғамның трансформациясын көрсетуге тырыстықан.

Түйін сөздер: Цифрлық Қазақстан, мемлекеттік бағдарламалар, инновациялар, ақпараттық-коммуникациялық технологиялар, бұқаралық коммуникация.

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Цифровой Казахстан – инновационный путь развития

Статья знакомит с цифровой трансформацией современного Казахстана, который развивается по инновационному пути, все активнее применяя коммуникационные технологии в период глобализации и цифровой революции. Казахстанское общество переходит на новый уровень развития в условиях дигитализации информационного пространства в стране.

Объект исследования – медиаландшафт XX1 века с новыми цифровыми, сетевыми технологиями, которые модернизируют, влияют на жизнедеятельность в Казахстане. Предмет исследования – информационная инфраструктура страны, которая под воздействием цифровой трансформации изменяет общество, медиа пространство, чему в значительной степени способствует государственная программа «Цифровой Казахстан». Цель-изучение процесса цифровых преобразований в стране на фоне новой технологичной окружающей среды и углубления информационной глобализации, которые не только изменили инфраструктуру страны, но также повлияли на образ жизни, медиаразвитие и восприятие. Чтобы ее доказать, были использованы следующие методы: принципы исторического, комплексного и системного анализа, основные концепции развития цифровой трансформации общества, обобщение исторических, социально-политических и информационных явлений, выступающих основными факторами модернизации современного общества.

Результаты: в общении между цивилизациями достигаются значительные результаты в обмене духовными, научными достижениями. В современном мире происходит трансформация современных обществ, интенсификация массовой коммуникации, что требует знания информационной специфики каждой страны, разработки принципов взаимодействия в национальном, региональном и глобальном масштабах. Благодаря цифровизации экономика Казахстана должна вырасти на 30%. В настоящее время Казахстан занимает 33 место в мире по уровню дигитализации. Данная программа обеспечит развитие ИТ в стране. Внедрение цифровых технологий – одна из важнейших задач, для решения которой реализуется 14 проектов общей стоимостью 140 млрд тенге. Используя новые технологии в стране, за пять лет планирует увеличить производительность труда в промышленной отрасли в полтора раза. В статье авторы попытались показать трансформацию казахстанского общества, идущего по инновационному пути развития, реализовывая государственную программу «Цифровой Казахстан».

Ключевые слова: Цифровой Казахстан, государственные программы, инновации, информационные и коммуникационные технологии, массовая коммуникация.

Introduction

The priorities in the development of the information society in Kazakhstan changed amid the rapid introduction of new information technologies. In addition, it is important to take into account the national specifics, the cultural identity of society, and the specifics of communication development in the republic in the period of globalization.

"With the boom of new information technologies, multimedia, the Internet, and e-mail have become a widely accepted part of everyday life. People get access to the ocean of information. Although there is a danger of drowning in this ocean. I am sure, he says, that most of them are ready to build their own ships with their own course and enjoy a comfortable cruise in the world of information. Exchanges among ordinary people who transcend national and cultural differences should bring universal values: not Western and not Asian. This is what I called the communication renaissance" (Takayoshi, 1997).

Materials and methods

The article uses research methods such as content analysis, socio-politics and cultural research scientists on mass media, which is becoming multimedia, as well as the works of domestic researchers on changing innovation tendencies.

The main methods of research are the principles of historical, dialectical, complex and system analysis, the basic concepts of the development of new media, the generalization of historical, socio-political and information phenomena acting as the main factors of mass communication processes.

The computer era brought a simple law: doubling the maximum memory size of storage media each year. There is an increase in information processes in human society. For 50 years, the speed of information transfer has increased 300,000 times and is about 3 seconds.

The main components of the intensification of information processes are:

- The steady increase in the speed of transmission of messages,
- Increase the amount of information transmitted,
- The rapid growth of the technical equipment of managerial labor (Panarin, 2006).

The process of digitalization accompanies the growth of cybercrime. In 2017, this danger was recognized as a serious threat to business, although in 2016 this danger occupied only the fifth line.

Literature Review

Digitalization is a process of social development based on the transformation of information into digital form using computer tools and encompassing major technological transformations in the areas of economics, science, social sphere, politics, and culture.

The trend of digitalization of all aspects of human activity is actively spreading in the world. This is evidenced by the works of domestic and foreign researchers. Among them, we can note – Gerald C. Kane (Digital Transformation' Is a Misnomer), M. Alenezi (Alenezi, 2021), Ernández, A., Gómez, B., Binjaku, K. (Multivocal literature review, 2023), Fossen F.M., Sorgner A. (Journal of Business Research, 2021).

Digital transformation is becoming a factor in global competition: countries that are able to get ahead of others on this path and take full advantage of the opportunities of digitalization are becoming leaders of the 21st century. Three countries stand out in particular: South Korea, Singapore, and Hong Kong. Also among the leaders are Estonia, Taiwan and the UAE, which actively demonstrate institutional support for innovation. The United States ranks second in digital evolution after Singapore (The World's Most Digital Countries: 2020 Ranking).

Kazakhstan is strengthening its position on the global stage in the field of digital governance. According to the UN E-Government Survey 2024, the country ranked 24th globally in e-government development, improving its position by 4 places compared to the previous report, the Ministry of Digital Development, Innovations and Aerospace Industry of the Republic of Kazakhstan reports.

Numerous studies by foreign scientists are devoted to the issues of digital transformation of the economy, education, and culture, including Cenamor, J.; Sjodin, D.R.; Parida, V. (2017), Davydova A.A., Shiplyuk V.S. (2019), Basayev Z.L. (2018).

Digitalization of humanitarian education is a complex process affecting all levels of the educational system and represents humanitarian education as a social institution where human capital is developed in the era of digitalization. The works of the following scientists are devoted to this topic: Martin-Gutierrez, Mora C., Gonzalez-Marrero A. (2017), Kozlovskaya G., Kazenina A. (2020).

Formed in the field of natural or technical sciences and spreading in the economy, they increasingly cover the social sphere (Otia J., Bracci E., 2023), affecting the humanities and the cultural sphere. This is confirmed by the works of the following scientists: Pleşa T., Popescu C., Pleşa I.T. (2023), Lenka, S.; Parida, V.; Wincent, J. (2017), Kovalenko T.V., Sarkisova E.G. (2024), Astafieva O.N., Nikonova E. Shlukova O. (2018).

Information technologies have made it possible to digitize and present cultural and artistic monu-

ments in a systematized form on analog media. Art and creativity from professional communities have actively burst into the Network world – the world of the Internet.

Results and Discussion

In the Strategy "Kazakhstan-2050», the country faces the task of entering the 30 developed countries of the world. The key document of implementation is the Strategic Plan -2025. It is important to continue the ongoing reforms in the framework of the implementation of the Strategy 2050 course. As part of this course, it is necessary to create an infrastructure of innovations for the development of a knowledge-based economy, modernize basic industries and create conditions for reforming a new, own high-tech, digital economy. The introduction of digital broadcasting in Kazakhstan has great social significance. Since February 2021, the entire country has switched to digital broadcasting.

Kazakhstan has chosen the European standard for digital broadcasting. The Ministry of Information and Communication of Republic Kazakhstan (MIC RK) in the direction of the digital Silk Road launched the project "Providing broadband access to rural communities using fiber-optic communication technology". Internet access will get 1249 villages. In total, it is planned to lay more than 20 thousand kilometers of optical fiber. According to the country's MIC, according to the results of 2018, the economic effect of digital events was 58.3 billion tenge (1$ = 420 tenge).

KazNIC analysts summed up the state of Kaznet: the national domain capacity in 2014 increased by 20%. If in 2004 in Kaznet there were only 2500 domain names in the .KZ zone, then by the beginning of 2015 the national domain capacity (the domains of KZ and KAZ) was estimated at 122,408 units. For ten years, Kaznet has grown 50 times. In general, the share of registered names in the national domain capacity is significantly shifted towards the .KZ domain and amounts to 98.8%.

Thanks to digitalization, the Kazakhstani economy should increase by 30%. (Kazakhstanskaya Pravda, 2018). Currently, Kazakhstan is ranked 33rd in the world in terms of digitalization. The pandemic that swept the whole world in 2020 influenced the intensification of the development of the Internet in the country.

This program will ensure the development of IT in the country. Using new technologies, it is planned to increase labor productivity by 1.5 times in the manufacturing sector over five years. The program provides for 120 joint activities, 20 of which were carried out in 2018. The introduction of digital technologies is one of the most important tasks, for the solution of which 14 projects with a total cost of 140 billion tenge. Using new technologies in the country, they plan to increase labor productivity by one and a half time in the manufacturing sector in five years. In the transport sector, it is planned to implement two projects in the period from 2018 to 2020: "Digital diagnostics of the track" and "Management of multimodal transportation". For example, the expected economic effect only from the transport system will be about 500 billion tenge (Malykh, 2018).

"Now more than 13 million people in the country have access to high-speed Internet, settlements with more than 10,000 thousand people are covered by the 3G standard, and with more than 50,000 thousand – 4G. In 2017, the fourth generation Internet services covered all regional centers of the country. Now the task of the Ministry is to provide access to broadband Internet in rural areas. By 2021, it is planned to cover 1,249 villages with these services, where 2 million inhabitants live (Nurbergen, 2018).

Behind this program is a complex, but necessary for the country, the process of introducing digital technologies in all spheres of life. The Digital Network and Crypto industry Associations "Digital Network" unites leading organizations whose efforts are aimed at achieving a result by introducing digital technologies into a person's daily life. As the president of this association, Olzhas Murtazin, explained: "The Association plans to cooperate with the national companies of Kazakhstan, large and small businesses in the implementation of block chain technologies." These technologies will reduce the costs of enterprises from 50 to 80% (Kazantseva, 2018).

Since January 2018, the new Tax Code has entered into force, which provides great opportunities for the development of Internet commerce. The new code provides tax incentives for entrepreneurs operating through an online store or online platform. In particular, legal entities are exempt from paying corporate income tax, individual entrepreneurs – from individual income tax. Businessmen who trade over the Internet are exempt from these types of taxes subject to the three mandatory conditions: First, payment for goods must be made in a cashless manner; secondly, the contract with the buyer must be concluded online; thirdly, the entrepreneur must have his own delivery service, or an agreement with

the person who is engaged in transportation, shipment, delivery of goods.

Deputy Prime Minister of Kazakhstan Askar Zhumagaliyev said that the state is taking a number of serious steps to develop digital technologies in Kazakhstan, including increasing the popularity of digital technologies among the population. He said that from the lower grades Kazakhstan would be taught programming skills. "High school students need to get knowledge of entrepreneurship. So that they understand how to develop production, startups. We will build an understanding of the people on how to do business. We will introduce IT skills for all specialties in universities, strengthen the quality of education of specialists in the field of information technologies,"said Askar Zhumagaliyev (https://www.inform.kz/kz/o-chem-govorili-na-cifrovom-forume-v-almaty_a3141750, 2018).

Technological growth has given impetus to distance education, treatment, remote employment, and self-education. Digital services contribute to the growth of a shared economy that is built on user-friendly solutions within digital communities. Such an economy has significant potential, according to forecasts; it will grow to 2025 by 27% per year. Big growth shows the use of large data arrays. In 2015, the size of this market reached 125 billion dollars. 46% of all technology startups accounted for cloud computing and data analytics (Central Asia Monitor, 2018). Along with the possibilities of developing big data, the question of their safe collection and storage, the consequences of oversupply in the life of society are raised.

According to the results of foresight forecasts, a package of new technologies in the global industry may emerge already by 2025. This will require new professional competencies from employees and ordinary consumers. Such technologies as the Internet of Things, robotics, 3D printing, nanotechnologies, etc. are being actively introduced. The technological revolution leads to the fact that in the coming decades many existing professions may disappear. Not a single epoch knew such a speed of change in the professional image of the economy, information space, media image.

The beginning of digitalization and automation of business processes in the near future will put at risk of extinction from 9% to 50% of all existing professions. According to the World Economic Forum, 7.1 million jobs will disappear by 2020 (Central Asia Monitor, 2018). Occupations that are currently being reduced include accountants, lawyers, traders, recruiters, analysts, administrative staff, and others. The remaining professions will change significantly.

The founder of SpaceX and Telsa – Ilon Musk called artificial intelligence "the greatest risk that humanity faces as a civilization." According to him, companies arranging a race for more advanced technologies can forget about the dangers that come from artificial intelligence. Artificial intelligence and the scientist Stephen Hawking are also ambiguously evaluating; he fears that such intelligence may lead to the degradation of a person, making him helpless in the face of nature (Gorbunova, 2017).

According to forecasts of the Institute of the Future, by 2030 there will be 85% of professions in the world that are not yet available today. Among them, such as data detective, urban cyber analyst, travel designer in augmented reality, genetic code editor, digital tailor, team manager for people and machines.

For the first time in different countries, it is necessary to train specialists for professions that are not yet on the market. There is a formation of a new economic structure – the "knowledge economy". Increasingly qualified are people who are able to think critically, work effectively in a team, respond quickly to changes, communicate with large data sets, and work with a variety of information. The share of the educated population by 2050 should increase from the current 66% to 77%, while people with higher education will almost double. Most countries have relied on the development of human capital and intellectual potential.

The southern capital of Kazakhstan, Almaty, is the flagship for the introduction of digitalization and produces half of all IT products in the country. As part of the "smart city" concept, system digital projects are being implemented in the areas of security, public transport, education and health. An IT hub (Information Technology Hub) opened in Astana, the northern capital of the republic in the summer of 2018. It is planned to launch a new music streaming service and an online platform with video content "video on demand" with an emphasis on domestic content.

Cities – Astana and Almaty are leaders in the practical implementation of Digital Kazakhstan. Here, in aggregate, 85% of programming services and 89.3% of IT services support are provided. In the field of information services, two directions dominate the placement and processing of data (76.7%) and the creation, maintenance and support of web portals (9.6%). Digitization in Kazakhstan is still the lot of state structures and business. As for

the population, only 13.2% of services in the field of programming and 22% of information services were rendered at his expense (Kaminsky, 2018).

The republic will develop a plan to combat fraud projects in the crypto industry, the identification of fraudulent structures and pyramids. The international virtual educational platform VQ-Education will soon start on the Crowd sale Network platform. All these activities will allow creating the cultural transformation of society, structural changes in the economy, as well as ensuring the increase of Kazakhstan's digital competitiveness in the world.

An IT hub has been created in Kazakhstan based on EXPO. The service of providing electronic services through a one-time SMS password has been introduced; currently it is possible to receive 30 types of electronic services. At the end of 2017, the state corporation provided more than 4 million public services, of which more than half in electronic form.

The eighth International Industrial Exhibition EXPO-Russia Kazkhstan 2018 was held in Almaty in June 2018. Along with it, for the sixth time, the Almaty Business Forum was held on the theme "Digitization – new opportunities for small and medium businesses". Representatives of ministries, departments, chambers of commerce from the countries of the Eurasian Economic Union (EAEU) and their neighbors took part in them. Currently, digitalization (digitalization) is becoming the leading agenda of state structures, education, health care, business, and the private sector.

In September 2017, a unique Public Service Center appeared in the southern capital, a public reception office named "Open Almaty", which offers three channels to communicate with citizens: a front office, a web portal and a call center. Recently, the service of a new generation of Open Almaty won at the international competition of urban practices "City where I want to live, 2017". The electronic platform open-almaty.kz will expand the boundaries of communication and contact with citizens of the city. Currently, the site can be found systematic analysis of about 600 life situations, serving as a practical guide to solving a number of issues and problems. Electronic tracking of intercity and international buses has been introduced in Kazakhstan. This system, created under the Digital Kazakhstan program, has been developing in the country since 2018.

For the first time in different countries, it is necessary to train specialists for professions that are not yet on the market. There is a formation of a new economic structure – the "knowledge economy". Increasingly qualified are people who are able to think critically, work effectively in a team, respond quickly to changes, communicate with large data sets, and work with a variety of information. The share of the world's educated population by 2050 should increase from the current 66% to 77%, while people with higher education will almost double. Most countries have relied on the development of human capital and intellectual potential.

Convergent culture – economic, technological, social, cultural convergence leads to changes in culture, where the audience, consumers are encouraged to search for new information and participate in all stages of the production of content, content. A "culture of participation" is opposed to the traditional notion of media consumption. In the new system, the traditional division into media producers and consumers is smoothed, leveled, transformed into user members, where the audience appreciates co-creation.

Conclusions

Kazakhstan has experienced several stages of industrialization. The first was in the 1930s along with collectivization, after – in the war of the 1940s, when more than 400 different factories and plants were transported to the republic, then in the era of virgin lands and in the period before the collapse of the Soviet Union. After independence, Kazakhstan survived the demolition of old industry and economic ties. After the economy grew, new industrialization of Kazakhstan began. In the new century, income generation comes not only from production, but also from the services and applications of digital technology. The country has entered a transitional period to the fourth industrial revolution (Altybayev, 2018).

In the intercourse between civilizations, as is known, significant results are achieved in the exchange of spiritual, scientific achievements. In the modern world, there is an intensification of information communication, which requires knowledge of the communication specifics of each country, the development of principles of interaction on the national, regional and global scale.

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