

ЭКОНОМИКАЛЫҚ ҒЫЛЫМДАР

DOI: <https://doi.org/10.37788/2020-1/60-66>

УДК338.22:004

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Main trends of change in digital business in Kazakhstan and Abroad

Annotation. The article is devoted to: problems of adaptation of tools of strategic management of the company to fast changing external conditions; analysis of the main tendencies of changes in digital business caused by intensive development of digital economy. The article deals with the main trends of changes in digital business environment at macro and micro levels, issues of increasing the efficiency of internal potential of the company, the features of competitive struggle based on the active use of information and communication technologies.

Keywords: Digital economy, index of digital economy, index of digital introduction, innovations, informatization.

Introduction. It is difficult to imagine the modern world without information technologies, which have changed and created favorable conditions for professional development and opened new market opportunities. The emergence of new digital infrastructures and the development of computer technologies and digital communications create new opportunities for the use of information technologies and their introduction into the social, political and economic life of society, which is a new and relevant instrument of the international digital economy system. The digital economy is based on the production of electronic goods and services by high-tech business structures and the sale of these products through electronic commerce. It is important to note that in modern conditions the harmonization of supply and demand is increasingly taking place in the electronic environment. Almost all aspects of economic and financial relations of the company, including planning, management, marketing, logistics, finance, personnel recruitment, interaction with suppliers and customers, have been transferred to the Internet, and the implementation of business processes is carried out using information and communication technologies. Therefore electronic services in the sphere of circulation can be considered as a natural result of introduction of technological and organizational-economic innovations in economy.

Digitalization issues are widely discussed in various literature. The article uses the results of the Digital Economy and Society Index (DESI), which monitors the overall digital productivity in Europe and monitors the progress of EU countries in terms of their digital competitiveness [1]. In the context of the Eurasian Economic Union (EEU), which includes all member countries of the EDB, the share of digital economy in the total GDP of the EEU is less than 3 % [2]. Given the noted opportunities, comparing the dynamics of growth in Internet access and the index of digital implementation [3] of the World Bank of the EDB member countries is of particular interest. It is important to note that within the framework of the "Digital Kazakhstan" program implementation in the Republic. [4], ambitious goals for the digitalization of industries, focused on the use of online opportunities and innovative digital technologies for business have been identified. In modern conditions, the indicators of information and communication technologies use in organizations are growing annually, so at the end of 2019, 83.9 % of the country's enterprises, excluding public administration organizations, use computers and 81.1 % have access to the Internet, as well as 7.7 % place orders via the Internet and 49.1 % use Internet portals [5].

Materials and methods. The information base of the conducted research is statistical data in the field of digitalization in Kazakhstan and abroad. The substantiation and argumentation of the content of discussion of the investigated question is based on methods of the statistical, analytical analysis, comparison and estimation, generalization and systematization of statistical data materials, review of scientific publications on investigated question.

Results and discussion. Digital economy is an activity in which the key factors of production are data presented in digital form, and their processing and use in large volumes allows to increase efficiency, quality and productivity in various types of production, technology, equipment, storage, sale, delivery and consumption of goods and services.

Economic relations and laws are the subject of the digital economy. Relations are formed in the process of production, exchange, distribution and consumption of scientific and technical information through digital information technologies, and the development of these processes is subject to economic laws. The e-commerce market and the digital economy are relatively new areas of scientific research. In the modern global world

commercial relations are actively formed in virtual space on the basis of market interaction principles. It is important to note that technological innovations create conditions for economic subjects to increase productivity and reduce the cost of circulation, to create new forms of business activity, new ways to increase added value, new factors to maximize profits.

Actuality of article is caused by technological changes which bring new characteristic features and conditions both in world economic system, and in economy of the separate markets and the enterprises.

Business entities are forced to work in a constantly changing environment survival and development in such conditions requires constant adaptation of business to the dynamically changing environment at the strategic and tactical levels.

The aim of the article is to identify the impact of digital information technologies on business and determine the best ways for the company to respond to the challenges of the digital economy.

The digital economy has a huge impact on production, trade, transport and financial services, education, healthcare, media, etc. Technology empowers people and organizations in various directions, provides an opportunity to create and disseminate ideas, develop and implement innovations in business activities.

The development of information digital economy is inseparably connected with the process of information market development. The information market can be characterized as a system of economic, legal and organizational relations for the purchase and sale of intellectual labor products on a commercial basis.

With the growth of informatization and digitalization of society the information industry starts to prevail in the economy, production becomes more innovative and intensive. The number of employees in the sphere of information and communication technologies grows every year.

The information market uses special methods of competition of IT-structures performing undiversified function on development of innovative technologies of manufacture, storage, processing and transfer of the information for optimization of business processes of the organizations.

At the microeconomic level, information and communication technologies (ICT) enable enterprises to optimize their business processes. At the macroeconomic level, the impact of ICT explains the need to choose new areas of development of the economies of states and regions, considering the trends of the world economy, including their use.

The digital economy is capable of overcoming a number of limitations inherent in traditional economies. Digital products can be copied and used by an unlimited number of people and they do not lose their consumer properties, and when shared and shared, these properties are often improved. In this case, material products cannot be used by more than one person at a time and are subject to wear and tear during exploitation. Online retailers avoid restrictions on the space typical of conventional retail outlets, and therefore on the breadth of the range.

With the increasing influence of information on the management of the company, more research is required on how it is used. Nowadays it becomes more and more difficult to solve organizational and managerial tasks of the companies setting up business processes.

The digital economy has made a number of significant changes in the global economy and in the operations of the company:

1. Appearance of information production factor, which has become a significant resource;
2. Increase in production costs, since information as a commodity and factor has its own price;
3. Reduction of operating costs through the use of ICT;
4. Increasing the importance of the human factor in the introduction of ICT-based production;
5. Reducing the significance of the uncertainty factor through the active use of the information resource.

In the traditional economy, the main role was played by the producer-buyer relationship, as it belonged to the generation of product ideas. The buyer made a choice from a list of advantages already produced and offered by the producer. In the digital economy, the modern customer has the opportunity to participate in the process of creating new consumer value, generate ideas for new products and services.

The transition to a closer interaction with the consumer can be described as a logical step for manufacturing enterprises to change their business environment. Manufacturing companies have increasingly begun to cooperate with the consumer (creating product design, customizing products, developing new product functionality, etc.).

The concept of "open innovation" is associated with changes caused by the digital economy. Open innovations can be observed in the process of active involvement of consumers' businesses in the process of innovation creation, when companies use not only internal ideas (ideas of employees), but also external ideas (ideas of consumers). Knowledge is a strategically important asset in the digital economy.

Knowledge management, as one of the most important activities in the management system, should be focused on the formation of intellectual values, development of organizational, consumer and human capital of enterprises. Intensive use of intellectual assets provides opportunities for the formation of internal and external competencies, which together form the system of key competencies of the company.

The development of digital economy has a significant impact on internal and external business environment. Fundamental changes are taking place in the sphere of information and communication technologies, which are reflected in various directions of the company's activity. The Internet allows even new and tiny companies to sell their products around the world.

Companies can appear and grow rapidly with relatively small capital investments. Information technology helps to reduce costs as well as significantly increase productivity and productivity in virtually all industries.

The market position of companies in the digital economy is becoming increasingly complex, with increasing risks and uncertainties in making strategic decisions. This situation is associated with unstable conditions due to dynamic changes at the technological level, increased competition, and government influence on the economy.

Technological changes inherent in the digital economy create new market rules for doing business, both for producers and buyers. In the digital economy, companies need to constantly look for new competitive strategies and improve the efficiency of competition.

In order to survive and develop in the new environment, companies need to improve their digital information technology competence.

The impact of digitalization on foreign economies and businesses can be addressed through reporting on the Digital Economy and Society Index.

Today the European Commission has published the results of the Digital Economy and Society Index (DESI) 2019, which monitors the overall digital performance in Europe and monitors the progress of EU countries in terms of their digital competitiveness.

DESI combines over 30 indicators and uses a weighting system to rank each country based on its digital indicators. It combines a set of relevant indicators for the current composition of European digital policy. The index is divided into five main dimensions, which in turn consist of sub measures [1]. The main dimensions are shown in Figure 1.

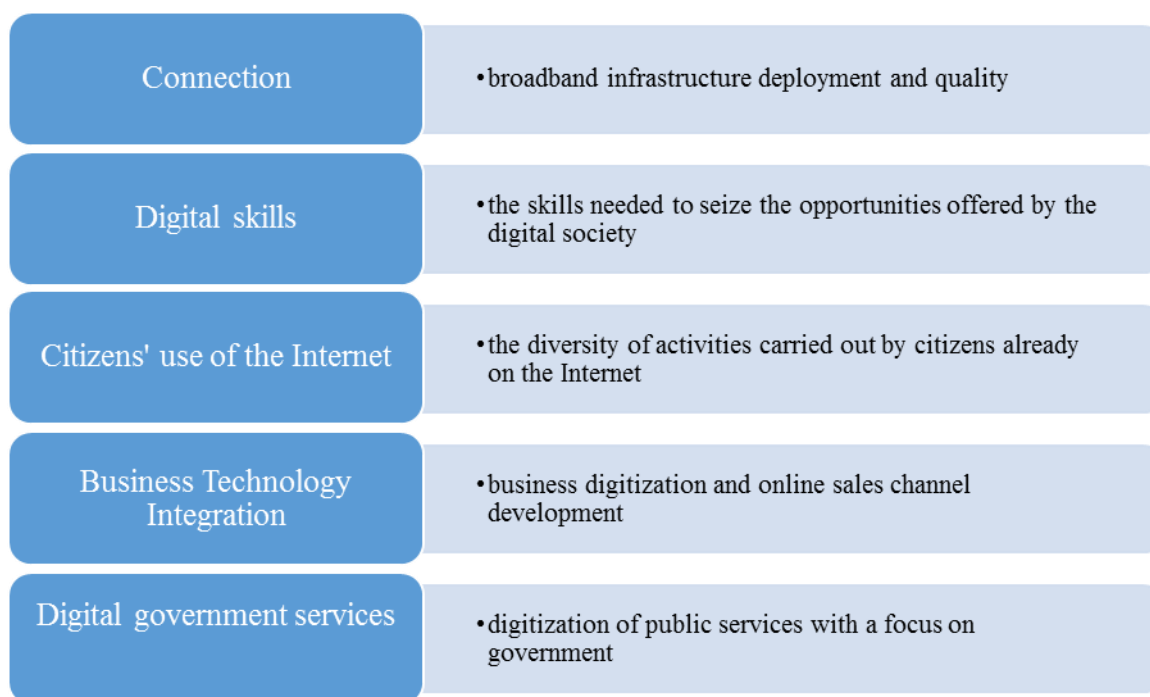


Figure 1 – Five dimensions of the Digital Economy and Society Index

The data included in DESI was mainly collected by the European Commission services -DG Connect and Eurostat, as well as special studies initiated by the Commission services. Within a short period of time Eurostat was able to intensify active collection of digital indicator information in the EU-28-member states. In 2015, the need for a broader global perspective was recognised. The first International Digital Economy and Society Index (I-DESIGN), published in 2016, provided a snapshot for comparing statistics from 15 non-EU countries with those of the EU Member States.

The countries that set ambitious targets under the EU Single Digital Market Strategy and combined them with adapted investments achieved better results in a relatively short period of time. This is one of the main findings of the Digital Economy and Society Index (DESI). However, the fact that the largest economies of the EU are not digital leaders indicates that the speed of digital transformation must accelerate for the EU to remain competitive on a global scale.

Digital indices of economies and societies over the last 5 years show that targeted investment and sound digital policies can have a significant impact on the performance of individual countries. For example, this applies to Spain, which uses ultra-fast broadband, Cyprus, which uses broadband, Ireland, which uses digitization of enterprises, and Latvia and Lithuania, which use digital public services.

Communication has improved, but remains insufficient to meet the rapidly growing needs. Digital Economy and Society Index indicators show that demand for fast and ultra-fast broadband connections is growing, and it is expected to increase in the coming years due to the growing complexity of Internet services and business needs. Ultrafast connection speeds of at least 100 Mbps are available for 60 % of households, and the number of broadband subscriptions is increasing. Ultrafast broadband is used in 20 % of households, which is four times more than in 2014.

The situation in Kazakhstan is the same as in the rest of the world. Many domestic companies turn to our experts to help them with the Digital Transformation (DT) process. The Republic is living in the digital age, there are all conditions for business transformation in terms of infrastructure availability, and today the average level of broadband Internet connection is more than 75 %.

In recent decades, the global economy has experienced digital transformation, which is causing significant changes in all areas of life. This global trend has significantly affected business, society and government structures in all EDB member countries. Kazakhstan is also a member country of the EDB.

In the context of the Eurasian Economic Union (EAEC), which includes all member countries of the EDB, the share of the digital economy in total GDP of the EAEC is less than 3 % [2]. This lag can be explained by a number of factors: the specific features of the economic models of the member countries, in which the agro-industrial complex (AIC) plays a significant role, the relatively slow pace of implementation of digital technologies, and the need to overcome the lag in the development of the scientific and technological base as compared to post-industrial countries. The digitalization of the economy of any country can be fully realized only if access to ICT networks and related services for the population and enterprises on its territory is expanded. For this purpose, measures to create and modernize communication infrastructures to meet the growing demand for ICT services are essential. It is worth noting that since 2000, all the EDB member countries have seen exceptionally positive trends in the development of basic infrastructure for the digital economy. As shown in the graph below, the share of the population with access to the Internet has increased significantly. The overall DIC index of all countries under consideration is largely comparable to the Internet access index of the EDB member countries (Figure 2).

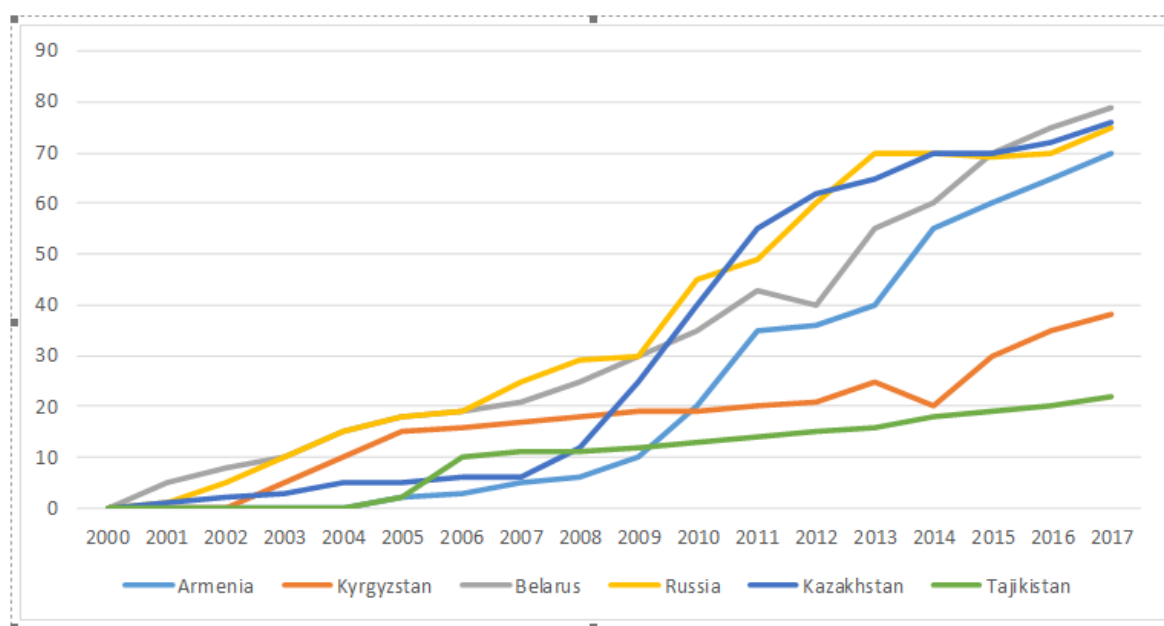


Figure 2 – Proportion of the population with access to the Internet for the years 2000-2017 (%)

Russia, Kazakhstan and Armenia are leading the region, while Kyrgyzstan and Tajikistan are far behind. Belarus is distinguished, whose index of digital implementation is much lower than that of the population's access to the Internet. This difference is largely due to the low level of digital adoption in the public sector. It should be noted that all countries have shown positive dynamics of the overall index in 2014-2016.

However, according to data on public access to the Internet in the EDB member countries, even within the region there is a digital divide between states. Moreover, due to the countries' heterogeneous infrastructure and economic development, there is also a gap between different regions within countries and, above all, there is a significant difference in the level of digitalization of urban and rural environments.

From the indicator of access of the population to the Internet it follows that it is possible to divide the EDB member countries into two groups - the widest access group, which includes four countries: Russia, Kazakhstan, Belarus and Armenia, and the group with limited access, which includes Kyrgyzstan and Tajikistan.

In 2017, 38.2 % and 22 % of the population of Kyrgyzstan and Tajikistan respectively had access to the World Wide Web.

The indicator of public access to the global network is visible because the Internet plays a fundamental role in the digital economy and its transition. As part of the formation and development of a digital economy, the Internet creates an entire economic ecosystem and radically changes the nature and competitiveness of traditional spheres.

While implementing the necessary infrastructure for Internet connection, a whole range of new opportunities in the field of public sector development, provision of public services, doing business, increasing trade flows, optimizing the economic activity of the private sector, improving the system of education, healthcare, etc. appear.

With these opportunities in mind, comparing the dynamics of growth in Internet access and the World Bank's Digital Implementation Index [3] (DIC) of EDB member countries is of particular interest (Table 1).

Table 1 – Index of digital implementation in 2014 and 2016

	DIC Index		Business Indicator		Indicator of population		Government Sector Indicator	
	2016	2014	2016	2014	2016	2014	2016	2014
Armenia	0,62	0,61	0,71	0,69	0,48	0,41	0,67	0,73
Belarus	0,59	0,53	0,74	0,70	0,65	0,56	0,39	0,33
Kazakhstan	0,67	0,63	0,60	0,54	0,57	0,53	0,84	0,83
Kyrgyzstan	0,50	0,43	0,61	0,49	0,35	0,31	0,54	0,49
Russia	0,74	0,69	0,71	0,65	0,70	0,60	0,82	0,82
Tajikistan	0,32	0,29	0,42	0,20	0,39	0,28	0,24	0,32

Table 1 shows that the business indicator in the case of all countries has shown extremely positive dynamics, and in the case of Armenia, Belarus, Kyrgyzstan and Tajikistan, this indicator is the highest of the three, as in these countries business plays the role of a driver of the digitalization process.

The great interest of business in digitalization is explained by the desire to maximize profits by optimizing business processes and extremely efficient allocation of resources. This indicates the commercial viability of digital projects aimed at innovative business solutions using digital technologies. According to Table 1, in Armenia, Kyrgyzstan and Tajikistan the indicator of digital implementation among the population is below 0.50.

Therefore, the following assumption follows - as a result of relatively limited digital diffusion, the so-called "digital culture" of Eurasian countries as a whole is less developed than that of industrialized countries. Moreover, the subversive nature of these technologies to a large extent generates distrust among the population of these countries, who themselves refuse to use them.

For this reason, OECD has developed a list of measures necessary for successful implementation of the digital agenda by governments:

Development of a digital government strategy, complemented by an action plan and impact assessment tools.

Definition of a structure providing the political mandate, authority and resources to develop and coordinate implementation of the digital strategy.

Updating the regulatory framework.

Funding for the development of key digital tools (e.g. digital identity, common data services, common business processes) and their active implementation in the public sector.

Development of digital data and technology skills in the public sector.

Promote the adoption and enforcement of digital standards in order to offer a more coherent, compatible and sustainable digital government infrastructure (e.g. standardized model for ICT project, governance, standardized model for business cases, service standards, data compatibility). -

Implementing policies to support the development of the public sector that manages data, and promoting the strategic use of data and new technologies in the public sector. -

Developing an open public data strategy (within the overall data management structure and policy), involving external stakeholders to manage each step of the open public data value chain.

Kazakhstan should work in three directions to improve technological operational efficiency.

First, the efficiency of materials and resources used in enterprises should be improved through digitalization.

Secondly, digital tools should be used to manage the supply chain, thus increasing competitiveness and economic efficiency.

Third, digital technology should form a new generation of workforce by organizing workflows and training employees.

It is important to note that as part of the implementation of the Digital Kazakhstan program. [4], ambitious goals for the digitalization of industries, focused on the use of online opportunities and innovative

digital technologies for business have been identified. In the future, wide use of digital technologies will allow to increase production efficiency due to changes in the business models of the company. The eGov project, which allows both individuals and legal entities to independently receive public services in electronic format, has already shown good results in our country.

In modern conditions, the use of information and communication technologies in organizations is increasing every year, so at the end of 2019, 83.9 % of the country's enterprises, excluding public administration organizations, use computers and 81.1 % have access to the Internet, as well as 7.7 % place orders via the Internet and 49.1 % use Internet portals [5].

Conclusion. The development of digital economy favorably creates conditions for accelerated turnover of funds, development of material and technical base of trade activity, improvement of market process of realization of newly created value, optimization of commercial and economic relations. Electronic transformation of branches of economy acts as a new essential factor, providing modernization of national economy. Industry 4.0 is a very actual direction for us, which creates favorable conditions for the implementation of digital economy principles and effective integration into the world economic space.

On the whole, the dynamically developing worldwide digitalization of economic sectors is so rapid that many organizations have hardly managed to get acquainted with new technologies. The impact of the electronic transformation and the involvement of companies in the electronic world is not perceived positively by all, but companies that have their own websites or pages and use Internet commerce are getting new, highly effective marketing channels for promoting their products and services.

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Қазақстанда және шетелде цифрлық бизнесті өзгертудің негізгі тенденциялары

Мақала компанияны стратегиялық басқару құралдарының сандық экономиканың қарқынды дамуына байланысты тез өзгертін сыртқы жағдайларға бейімделу мәселелеріне арналған. Бұл мақалада цифрлық бизнес-ортаның макро-және микродеңгейдегі өзгеруінің негізгі тенденциялары, компанияның ішкі әлеуетін пайдалану тиімділігін арттыру мәселелері, ақпараттық-коммуникациялық технологияларды белсенді пайдалануға негізделген бәсекелестік күрес ерекшеліктері қарастырылады.

Түйін сөздер: Цифрлық экономика, цифрлық экономика индексі, цифрлық енгізу индексі, инновация, ақпараттандыру.

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Основные тенденции изменения цифрового бизнеса в Казахстане и зарубежом

Статья посвящена проблемам адаптации инструментов стратегического управления компанией к быстро меняющимся внешним условиям, обусловленным интенсивным развитием цифровой

экономики. В данной статье рассматриваются основные тенденции изменения цифровой бизнес-среды на макро-и микроуровне, вопросы повышения эффективности использования внутреннего потенциала компании, особенности конкурентной борьбы, основанной на активном использовании информационно-коммуникационных технологий.

Ключевые слова: Цифровая экономика, индекс цифровой экономики, индекс цифрового внедрения, инновации, информатизация.