



МРНТИ 06.54.31
УДК 330.342

<https://doi.org/10.51579/1563-2415.2021-4.08>

DIGITALIZATION OF THE ECONOMY: FOREIGN EXPERIENCE AND OPPORTUNITIES FOR PROGRESS FOR KAZAKHSTAN

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Annotation. *The purpose of the research is to create a general methodological approach and technology for system-targeted knowledge management and decision-making in the digital economy. The subject of the study is the main properties and patterns of development of the digital economy. Theoretical analysis. This study is devoted to the analysis of the essence of the definition of "digital economy", the study of the main trends of its development and the identification of the features of its formation in Kazakhstan, as well as the definition of the tasks of the development of the digital economy in our country in the medium term. The methodology of the theory of post-industrial and information society is used. The hypothesis is put forward that the digital economy is a new stage in the development of the economy and society.*

Keywords: *Socio-economic development of the Republic of Kazakhstan, digitalization, digital economy, progress, economic security, economic growth.*

Digital transformation is aimed at solving all the same tasks that the state and business have always faced: process optimization, cost reduction, and quality improvement. The only difference is that new digital technologies allow you to see and know more, understand processes more deeply and manage at a fundamentally new qualitative level.

There are already quite a few interesting projects in this area in the world. So, in 2017, the government of the Emirate of Dubai launched a pilot project "Online Only". Within one day, the centers providing public servants were closed, and 950 services of 32 authorities became available exclusively in electronic format. Now, according to McKinsey research, 55 services of 24 Dubai authorities are provided in a single Dubai Now mobile application. The same approach is used in joint projects in Kazakhstan. It consists of three key components and allows you to implement digital scenarios in just 3-5 months. The first component is a digital platform built on the basis of advanced technologies that can work both in the cloud and in the client's landscape. Such a platform is capable of processing large amounts of data using intelligent processing algorithms. It includes technologies such as machine learning, blockchain. The second component is based on the SAP joint innovation methodology, which allows you to design and implement a digital scenario in a short time using tools already embedded in the digital platform. The third component is the expertise of SAP and the company's partners accumulated over many years. We have converted all three components into a set of tools for quickly launching digital scenarios in a variety of industries.

Main provisions of the article.

The problem is not only that people do not immediately get used to a large amount of new data and opportunities for them. It is very important not to lose control during the transition. On the one hand, the main goal of digitalization is to improve and simplify life. On the other hand, it is important not to forget about security, including maintaining data confidentiality.



It should be understood that overcoming the "digital divide" will require attracting serious investments. For the effective use of digital technologies, it is necessary to "expediently and critically" use the accumulated experience. Serious retraining of personnel, "cultivation" of employees capable of generating new business ideas may be required.

Introduction. A powerful wave of digital innovations, the development of artificial intelligence, machine learning and automation is really changing the labor market. It seemed that recently calls to another city were made with the help of an operator. Today there is no such profession anymore. Mobile phones allow you to make calls outside the home, at any convenient time and to different parts of the globe [1].

Of course, the main impact of digitalization will manifest itself not in the complete disappearance of professions, but in their significant transformation under the influence of technology.

According to researchers from Oxford University Carl Frey and Michael Osborne, as a result of computerization, almost half (47%) of all workers in the United States are at risk of redundancy. The Bank of England announced that automation in the UK could lead to the dismissal of 15 million people, most of whom work in the service sector [2].

On the other hand, a number of experts assure that thanks to the development of technology, even more jobs will be created than abolished. Yes, some professions will become a thing of the past, but new ones will appear, "backed up" by the capabilities of artificial intelligence and automation.

Methodology. The noted studies of domestic and foreign scientists and practitioners confirm the relevance and complexity of the issues of collaboration of digitalization processes both in state-governmental and internal corporate control and in business structures.

Scientific discussions about the institutionalization of the regulatory regulation of digitalization and the entire corporate governance system as a whole indicate the need for a scientifically sound concept of digital processes that meets the financial interests of all participants in expanded reproduction. At the same time, the category of "digitalization" mediates all reproduction processes, therefore financial flows are the "center of attraction" for both state regulatory institutions and corporate owners. It is necessary to implement digital control on the basis of a single methodology at all levels of management. One of the conditions for the implementation of a unified methodology is the harmonization of financial control at the national and intra-corporate level.

The relevance of the formulated problems, the need to find ways to eliminate them indicated the choice of the research topic, its purpose, sub-goals and objectives, object and subject.

The hypothesis of the study is based on the assumption that the basis for increasing the effectiveness of digitalization of the economy and in large corporate structures of various forms of ownership and organizational and legal forms, taking into account institutional changes, is the modernization of the methodology of accounting and control processes, as well as the improvement of methods of information support of the development strategy in the conditions of digitalization of financial and economic activities.

Foreign experience and research results.

In general, the introduction of modern technologies allows companies and organizations to get new business opportunities, save time that can be spent on solving specific tasks (by eliminating routine, although necessary work) [3]. As a result, this leads to profit, attracting investors, creating new products and projects. At the same time, the speed of information exchange increases significantly. In Kazakhstan, within the framework of the special State program "Digital Kazakhstan", the latest technological initiatives have already been success-



fully applied both in state structures and in national companies. At the same time, it should be understood that this program is far from the first or even the second large-scale initiative of the state for the development of information technologies. I am sure that the development of the digital ecosystem will allow Kazakhstan to achieve sustainable economic growth, increase the competitiveness of the economy. And this is only a small part of what we can expect from digitalization processes [4].

As part of the implementation of the state program "Digital Kazakhstan", all state bodies of the country are involved in technological transformation. And it pleases. More and more services are being transferred to electronic format. For example, the Egov e-government portal.kz is used by almost all economically active population, and the work of PSC is improving every day. It is also worth noting the large-scale project "e-Ministry of Finance" - the result of cooperation between SAP and the Ministry of Finance of Kazakhstan. During the first 10 months of the system's operation, the Ministry was able to conduct an audition, which revealed a large number of discrepancies and violations. All errors and discrepancies in accounting have been eliminated. The "e-Ministry of Finance" led to an increase in financial discipline, the ministry had tools for integration with the Treasury, which led to a reduction in "double entry". The instruments of control over the national debt made it possible to exclude the possible influence of the human factor in the calculations [5].

In different countries, the introduction and penetration of online services into the structure of life and their active use by residents are quite different. Kazakhstan is actively developing in this direction. In particular, citizens can pay for utilities and parking services online. It is necessary to understand that it is not necessary to talk only about the introduction of digital technologies in the public sector. Other sectors of the economy are equally important. Over the past 12 months, the transformation program at the Samruk-Kazyna Fund has significantly gained momentum. Projects in such companies as "Kazakhstan Temir Zholy", "Kazatomprom", "KEGOC", "Kazpost" and "Samruk-Energo" are in the active stage of implementation.

The digital transformation of the financial industry is also actively taking place in Kazakhstan. In July 2018, SAP and the Astana International Financial Center (AIFC) signed a memorandum of cooperation. The agreement was signed at the Astana Finance Days site during the official launch of the AIFC, timed to celebrate the 20th anniversary of the capital of Kazakhstan.

Within the framework of this memorandum, the company will help the AIFC to introduce digital technologies. Thus, the AIFC will be able to compete on an equal footing with other financial institutions in the international arena. We hope that, thanks to the use of the best practices of global digitalization, the AIFC will soon be able to claim the role of a global financial hub in Central Asia and the CIS [6].

The key direction of the Digital Kazakhstan program is the development of human capital. As our global experience shows, successful digital transformation of public administration and economic systems is impossible without purposeful work in this area. That is why one of the main areas of work in Kazakhstan was and remains the SAP University Alliance program, which operates on the basis of the Eurasian National University n.a. L. N. Gumilev. Within the framework of cooperation, teachers and students of the university get access to various courses through an online cloud platform, and educational materials through SAP Learning Hub (Academic Edition). Thus, the classical learning process is complemented by practical classes. Today, 12 universities of the country are members of this program. The authors are confident that such laboratories will allow students to develop entrepreneurial skills and project-oriented thinking [7].



Digitalization has an impact on all sectors and will lead to a change in the structure of the economy of Kazakhstan as a whole by diversifying and unlocking the potential of non-raw materials industries, stimulating startup activity and opening "new industries" (Fig.1).

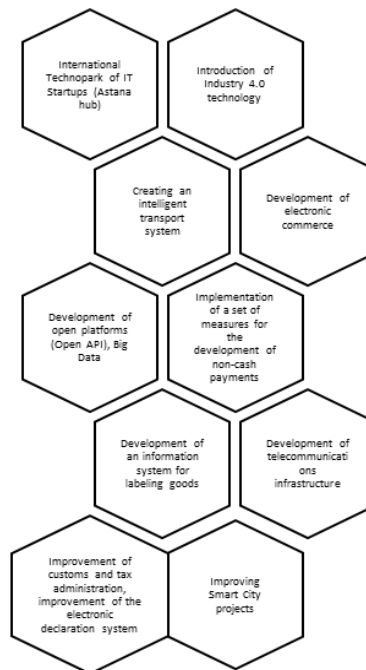


Figure 1. - Key digitalization projects.

In each country, the solutions that are most relevant today are being implemented. If we talk about the world's technology leaders, there are many different projects in SAP's portfolio. For example, transport management solutions in the largest cities of China. For this country, the issue of traffic jams is especially relevant because of the large concentration of people in cities. This is an example of a "smart" system of storm drains, as one of the examples of flood control. Or the management of the province of Bolzano (Italy) using blockchain technology. There are a lot of projects in the field of digitalization. Therefore, the authors are convinced that it is necessary to look not at specific countries, but at successful global technological solutions and find the best use for them in the country [8].

Conclusions. The analysis of the current situation shows the presence of the main structural problems of Kazakhstan.

One of the main problems is the too large share and role of the state in the market economy.

The second important problem, according to the authors, is undeveloped entrepreneurship, free competition and market relations. Therefore, the authors believe that in order to successfully solve the tasks set in the digitalization program, it is first necessary to implement political liberalization in accordance with the strategy "Kazakhstan 2050", which allows creating a healthy, real political competition. In addition, a prerequisite for success is a final and irrevocable victory over corruption and the rule of law.

The third big problem is the lack of full broadband Internet coverage of the territory in many areas. To solve the problem, we need huge financial injections, which only the state is capable of.



Another important problem that arises as a result of the development and introduction of the latest information technologies is security.

Firstly, the introduction of digitalization is a global trend and it affects all countries of the world and Kazakhstan is no exception.

Modern digitalization can be compared with the industrial revolution that took place 100 or more years ago.

Secondly, the authors suggest that digitalization will have a positive impact on increasing the transparency and transparency of the processes taking place in the economy. For example, the blockchain as a mechanism is convenient because it allows everyone to control their request from the moment of its assembly and delivery to the final buyer, the movement of any service or product. Digitalization has many advantages, but at the same time it initiates a large number of vulnerable areas.

This applies to ensuring the security of personal information, classified information, etc. In turn, the complication and improvement of the data protection system will inevitably lead to an increase in the professionalism of hackers. Unfortunately, in this regard, Kazakhstan is on the periphery, because we do not have our own developments in the cybersecurity system. For example, even in countries with powerful cyber defense systems, a much larger staff of professional, competent and experienced IT specialists, hackers break into and gain access to secret data. Kazakhstan's cyber defense system largely lags behind the above-mentioned countries in terms of security and vulnerability. There are real problems with the level of professionalism of those specialists who provide such security.

It can be stated that Kazakh specialists still need to learn a lot to get the professional skills that many foreign hacker groups have. It should be noted that the so-called international hacker groups are being created. Over the past decade, legal practice has led to many cases of accusations of highly qualified specialists from different countries, dealing a powerful blow to secret databases in various fields.

There are problems related to corruption in Kazakhstan. Under such conditions, it is very difficult to guarantee complete security in the protection of any personal data. Countries where there is a longer tradition of ensuring the security of information data suffer from the human factor, which plays a key role. An example is the situation with Snowden, who worked for a long time in the special services, the national security agency, then for some ideological reasons decided to go against the system and began to leak classified information that the United States considers secret.

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ЭКОНОМИКАНЫ ЦИФРЛАНДЫРУ: ШЕТЕЛДІК ТӘЖІРІБЕ ЖӘНЕ ҚАЗАҚСТАН ҮШІН ПРОГРЕСС МҮМКІНДІКТЕРІ

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Түйін. Ақпараттық экономиканың құрылымы ашылды. Цифрлық экономиканың жаңа қасиеттері айқындалды: өнімнің негізгі түрі; тауарлар өндіруден қызметтер өндірісіне көшу; ақпараттық-желілік құрылымдарды қалыптастыру; инвестициялық активтердің пропорциялары мен бағыттарының өзгеруі, шығармашылық еңбектің рөлінің артуы; басқарудың жаңа технологияларының пайда болуы және т.б. эмпирикалық талдау. Цифрландырудың мемлекеттің, кәсіпорындар мен ұйымдардың, үй шаруашылықтары мен жеке тұлғалардың қызметіне әсеріне сипаттама берілген. Цифрлық экономиканың нарықтық қатынастарының даму ерекшеліктері негізделген. Ақпараттық-коммуникациялық технологиялар мен ақпараттық ресурстардың бизнестің тиімділігіне әсері көрсетілген.

Түйін сөздер: Қазақстан Республикасының әлеуметтік-экономикалық дамуы, цифрландыру, цифрлық экономика, прогресс, экономикалық қауіпсіздік, экономикалық өсу.

ЦИФРОВИЗАЦИЯ ЭКОНОМИКИ: ЗАРУБЕЖНЫЙ ОПЫТ И ВОЗМОЖНОСТИ ПРОГРЕССА ДЛЯ КАЗАХСТАНА

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Резюме. Раскрыта содержание структура информационной экономики. Выделены новейшие свойства цифровизации экономики: основной вид продукции; переход от производства товаров к производству услуг; формирование информационных и сетевых структур; изменение содержательной стороны и направлений инвестиционных активов, повышение роли творческого труда; выявление новых технологий управления и др. Практический анализ. Представлена характеристика воздействия цифровизации на деятельность государства, организаций и индивидов. Охарактеризованы особенности развития рыночных отношений в цифровой экономики. Показано влияние ИКТ и информационных ресурсов на эффективность функционирования бизнеса.

Ключевые слова: Социально-экономическое развитие Республики Казахстан, цифровизация, цифровая экономика, прогресс, экономическая безопасность, экономический рост.