

ГОСУДАРСТВЕННОЕ УПРАВЛЕНИЕ ЦИФРОВОЙ ЭКОНОМИКОЙ В РЕСПУБЛИКЕ КАЗАХСТАН

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Аннотация. Вслед за сельскохозяйственной и промышленной революциями, мир переживает информационную революцию, приводящую к значительному увеличению уровня производительности труда. Информационная революция вызвала критические изменения в производственных отношениях и сформировала новые виды деятельности, продукты и услуги. В последние годы интеллектуальные технологии быстро распространились по всему миру в самых разных сферах деятельности, а также возросли последствия этого процесса для экономического и социального развития. Интеллектуальные продукты, активно проникающие в производство, управление и социальную сферу, серьезно трансформируют традиционные отношения и образуют качественно иную среду обитания человека, в которой образ и уровень жизни людей находятся на принципиально новом уровне. Развитие цифровой экономики выдвигает новые требования к государственному управлению. В статье рассмотрено государственное управление цифровой экономикой в Республике Казахстан. Целью исследования является анализ текущего положения государственного управления цифровой экономикой в Республике Казахстан. Методами исследования явились статистические методы анализа, методы сбора первичной информации. На основе проведенного исследования сформулированы основные выводы о развитии государственного управления цифровой экономикой в Республике Казахстан.

Ключевые слова: цифровая экономика, оцифровка, цифровизация, государственное управление цифровой экономикой

ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ ЦИФРЛЫҚ ЭКОНОМИКА- НЫ МЕМЛЕКЕТТІК БАСҚАРУ

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Аннотация. Ауылшаруашылық және өнеркәсіптік төңкерістерден кейін әлем Еңбек өнімділігі деңгейінің едәуір артуына әкелетін ақпараттық революцияны бастан кешуде. Ақпараттық революция өндірістік қатынастардағы маңызды өзгерістерді тудырды және жаңа қызмет түрлерін, өнімдер мен қызметтерді қалыптастырды. Соңғы жылдары Зияткерлік технологиялар бүкіл әлемде әр түрлі қызмет салаларында тез таралды, сонымен қатар бұл процестің экономикалық және әлеуметтік дамуға әсері артты. Өндіріске, басқаруға және әлеуметтік салаға белсенді енетін зияткерлік өнімдер дәстүрлі қатынастарды байыпты түрде өзгертті және адамдардың өмір салты мен өмір сүру деңгейі түбегейлі жаңа деңгейде болатын сапалы, әр түрлі өмір сүру ортасын құрайды. Цифрлық экономиканың дамуы мемлекеттік басқаруға жаңа талаптар қояды. Мақалада Қазақстан Республикасындағы цифрлық экономиканы мемлекеттік басқару қарастырылған. Зерттеудің мақсаты - Қазақстан Республикасындағы цифрлық экономиканы басқарудың қазіргі жағдайын талдау. Зерттеу әдістері талдаудың статистикалық әдістері, бастапқы ақпаратты жинау әдістері болды. Зерттеу негізінде Қазақстан Республикасында цифрлық экономиканы мемлекеттік басқарудың дамуы туралы негізгі тұжырымдар тұжырымдалған.

Түйінді сөздер: цифрлық экономика, цифрландыру, цифрлық экономиканы мемлекеттік басқару.

GOVERNMENT ADMINISTRATION OF THE DIGITAL ECONOMY IN THE REPUBLIC OF KAZAKHSTAN

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Annotation. Following the agricultural and industrial revolutions, the world is experiencing an information revolution, leading to a significant increase in the level

of labor productivity. The information revolution has brought about critical changes in industrial relations and shaped new activities, products, and services. In recent years, smart technologies have spread rapidly across the world in a wide variety of fields, and the impact on economic and social development has also increased. Intellectual products that actively penetrate into production, management and the social sphere, seriously transform traditional relationships and form a qualitatively different human environment, in which the image and standard of living of people are at a fundamentally new level. The development of the digital economy puts forward new requirements for government administration. The article discusses the government administration of the digital economy in the Republic of Kazakhstan. The aim of the study is to analyze the current government administration of the digital economy in the Republic of Kazakhstan. The research methods were statistical methods of analysis, methods of collecting primary information. On the basis of the study, the main conclusions about the development of government administration of the digital economy in the Republic of Kazakhstan were formulated.

Keywords: *digital economy, digitization, public administration of the digital economy.*

Introduction

Today's society is rapidly changing under the influence of digital transformation technologies. Digital technologies are not just a part of the economy – it is the economy itself [1]. Currently, digital technologies have played a decisive role in the prevention of a pandemic, the resumption and expansion of consumption [2]. Digitalization as a modern approach to the development of the country implies not so much the installation of high-tech equipment and the introduction of software systems, but fundamental changes in business processes, business models and management tools. The radical transformation affects the political, economic and social spheres, giving special priority to the theoretical study and practical implementation of the concept of sustainable development of the country and its regions on the basis of total informatization and digitalization of all spheres of life. In this regard, the analysis of the current state of the digital economy in Kazakhstan becomes especially relevant.

The object of the research is the state management of the digital economy in Kazakhstan.

The subject of the research is the current state of public administration of the digital economy in Kazakhstan.

The purpose of the study is to analyze the state management of the digital economy in the Republic of Kazakhstan.

Digitalization is a prerequisite for maintaining the competitiveness of all countries in the world. And for Kazakhstan it is also a unique chance to reorient the raw material orientation of the economy.

The president of the Republic of Kazakhstan has set a goal to enter the top

thirty leading countries of the world. The advanced growth of technologies, the digitalization of industries and all spheres of life of the population are the levers that make it possible to make the necessary breakthrough in the economy. Digital transformation is an effective way of Kazakhstan's development, as barriers to entering new markets are being erased, new reserves for economic growth are opening up, and productivity is increasing.

Digitalization affects all spheres of life of the population and is aimed at improving the standard of living of everyone: it is a general increase in the quality of life through improved infrastructure, convenient and affordable public services and universal Internet connectivity; new sources of income through access to electronic services, more favorable prices, availability of goods, as well as new services through the development of e-commerce.

Literature review

The transition to a digital economy poses a challenge for Kazakhstan to overcome the lag in the level of development from countries - world economic leaders. As a factor in solving this problem, there is the need to form qualitatively new methods of public administration that accurately and quickly respond to changes in the external and internal environment.

To analyze the current state of public administration of the digital economy in the Republic of Kazakhstan, we analyzed articles by domestic and foreign authors published in 2017-2021 in scientific journals included in the Web of Science and Scopus databases. The articles were selected based on their citation and research topic. The topic has scientific and practical significance, therefore, to write the work, the relevant information from both foreign and domestic sources and press releases in the media was used.

At the same time, laws, decrees, resolutions in the field of digital economy were analyzed, such as: Decree of the President of the Republic of Kazakhstan "On approval of the Strategic Development Plan of the Republic of Kazakhstan until 2025", Resolution of the Government of the Republic of Kazakhstan "On approval of the State Program" Digital Kazakhstan", Report on development of the ICT industry in the Republic of Kazakhstan.

The information necessary for analyzing the results of the implementation of state programs and measures for the development of the digital economy was taken from the official Internet resource of the State Program "Digital Kazakhstan", as well as the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan.

Research methods

The research methodology is presented by statistical methods of analysis, methods of data collection, methods of data analysis, as well as methods of systematization, comparison, on the basis of which appropriate conclusions are drawn and recommendations are given. The study collected and processed

information from official data sources, and calculations were carried out for 4 years - 2018-2021 based on information from the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan.

Research question: what is the stage of development of the digital economy in Kazakhstan?

Research hypothesis: an increase in information and communication technology (ICT) is affecting the development of the digital economy.

Research stages:

- define and analyze the public administration of the digital economy in the Republic of Kazakhstan;
- draw conclusions based on the analysis of public administration of the digital economy in the Republic of Kazakhstan.

Results and discussion

With the advent of technology and the process of globalization, the digital and traditional economies merge into one [3]. The digital economy is defined as an economy based on digital technologies, i.e. based on digital and computational technologies. In fact, it covers all business, economic, social, cultural, etc. activities that are supported by the Internet and other digital communication technologies [4].

There are three main components of this economy, namely e-business, e-business infrastructure, e-commerce. The digital economy has spawned many new trends and startup ideas. Almost all the largest companies in the world (Google, Apple, Microsoft, Amazon) belong to the digital world [5].

Recognizing the evolutionary nature of economic development and the inevitability of digitalization, it should be noted that effective public administration of the digital economy would ensure sustainable development and the achievement of global competitiveness. In this regard, when analyzing the current state of the digital economy in Kazakhstan, it is necessary to pay attention to the role of the state in the development of the digital economy.

Good governance can, among other things:

- contribute to the creation of a system of legal regulation of the digital economy based on a flexible approach in each area;
- to provide training of highly qualified personnel for the digital economy; ensure information security based on domestic developments in the transfer, processing and storage of data, which guarantees the protection of the interests of the individual, business and the state;
- ensure the creation of a stable and secure information and telecommunications infrastructure for high-speed transmission, processing and storage of large amounts of data, accessible to all organizations and households;
- increase internal costs for the development of the digital economy.

Resource countries with greater economic freedom have more efficient government. Another interesting finding is that improved governance means

more economic growth, more human development, and higher GDP per capita (PPP) [6].

By the decree of the President of the Republic of Kazakhstan in June 2019, the Regulation on the Ministry of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan was adopted. The Ministry is engaged in the formation and implementation of state policy in the field of digital development of the country, in the areas of innovation, communications, provision of public services, electronic industry, and is also engaged in the development of electronic government, coordination of the activities of the Government for Citizens Group of Companies, information security, aerospace industry, geodesy and cartography.

In 2017, the State Program “Digital Kazakhstan” was approved [7]. The successful implementation of this program will provide an additional impetus for the technological modernization of the country’s flagship industries, as well as create conditions for large-scale and long-term growth in labor productivity.

The cumulative economic impact of this program for 2018 and 2019 exceeded 800 billion tenge. However, the lack of objective and reliable information gives a vague picture, which affects the quality of decisions made when allocating budget funds for the development of the digital economy.

Significant progress has been made in the adoption of digital technologies in the utilities, education, health care, finance, transportation and mining and metallurgy sectors. The future integration of digital technologies is critical for Kazakhstan’s entry into the list of the 30 most competitive economies in the world and improving the well-being of the population of the Republic [8].

802.5 billion tenge	120 thousand jobs	37.8 billion tenge
<ul style="list-style-type: none"> • Overall economic impact • 2019- 584.3 billion tenge • 2018- 218.2 billion tenge 	<ul style="list-style-type: none"> • New jobs created due to digitalization • 2019- 78 thousand • 2018- 42 thousand 	<ul style="list-style-type: none"> • Spent on innovation ecosystem • 2019- 18.8 billion tenge • 2018- 14 billion tenge

Figure 1. Results of the implementation of the State Program “Digital Kazakhstan”

Source - Official Internet resource of the State Program “Digital Kazakhstan” [9]

As for the digitization of the social and professional sphere, the electronic labor exchange is working successfully. As a result, the employment process

has been halved, and the procedure itself has become transparent. In 2019, over 488,000 job seekers were recruited through the electronic labor exchange, including 350,000 for permanent jobs. In addition, electronic labor contracts have been concluded and 742,000 electronic labor contracts have already been concluded. At the end of 2019, more than 9.8 million services were provided in the field of social work, and 80% of utilities are provided in electronic form.

With the help of digital projects, employers and job seekers have saved about 862.2 million tenge. Savings due to a unified system for recording labor contracts amounted to 292.4 million tenge. Within the framework of the direction of digitization of economic sectors, digital technologies are being introduced at fuel and energy enterprises and at mining and metallurgical complexes, where technological re-equipment of enterprises in industries is carried out using elements of Industry 4.0.

In the oil and gas industry at the Atyrau and Pavlodar petrochemical plants, a 3-year overhaul period was carried out, which made it possible to reduce repair costs and increase the processing volume by an average of 300,000 tons per year by reducing downtime during major overhauls [10].

In addition, 4 enterprises of Embamunaigas JSC, Ozenmunaigas JSC, Kazgermunai JSC, Karazhanbasmunai JSC are introducing the Intelligent Field information system. %, as well as provide centralized management and remote monitoring of fields, optimization of wells and fishing equipment.

In order to increase the level of train safety due to the timely detection of track and rail faults, a project is being implemented to introduce an automated control system “Magistral”. Currently, diagnostics of the infrastructure of the main networks is carried out by 3 units of mobile diagnostic complexes (MDK). It is also planned to create 3 more subdivisions of the MDK.

Based on the results of mobile diagnostic systems, about 19,000 km of track were diagnosed in 4 quarters of 2019. At the same time, more than 190 kilometers were determined with an unsatisfactory assessment. About 85 pieces of dangerous rails with a sharp defect were found, that is, 85 points of rail breaks were prevented.

In the field of transport digitization and logistics, the project “Intelligent Transport System” is being implemented, which collects and processes data on roads, vehicles, trips on toll roads, passengers on intercity buses, as well as on issued tickets [11].

The intelligent transport system includes a system for collecting licenses and a system for collecting and transmitting traffic information to road users. To date, a toll collection system has been introduced on three sections: Almaty-Kapchagai (42 km), Almaty-Khorgos (295 km) and Nur-Sultan-Temirtau (134 km) with a total length of 471 km.

In order to automate transport control, 24 special automated measuring instruments were introduced, with the help of which, since September 2019, 82 violations of weight parameters have been identified and about 8.6 million tenge

have been collected in the form of fees and fines.

As part of the digitization of industry, a project is being implemented to create model digital factories that will demonstrate the impact and impact of digitization, identify obstacles and develop tools for state support. Fifty-one projects were launched, of which 16 were completed.

Today, Astana Hub has created conditions for obtaining tax, labor and visa benefits, there are programs for the development of startups.

In total, today the technopark includes 163 IT companies, about 700 startups, 17 research centers of domestic and foreign IT companies (such as CISCO, NOKIA, IBM, Microsoft and others), a programming school based on modern international teaching methods. The share of local content was 57.7%. In 2019, more than 530 events were held on the Astana Hub website, in which about 17,000 visitors took part. In 2019, memorandums of cooperation were concluded with 25 international organizations as part of the development of innovative cooperation [12].

These measures make it possible to create favorable conditions for the development of a startup culture and attract investments in domestic start-up projects. In particular, in 2019, more than 18 billion tenge were attracted for these purposes. The total volume of investments attracted to the IT market of Kazakhstan over the past 2 years was approximately 32.4 billion tenge. The technopark's programs made it possible to understand how good start-up projects in Kazakhstan are and how quickly they are moving to the level of a developed international launch ecosystem. Having studied the quality of such projects, we can conclude that investments in them paid off within the Astana Hub IT start-up park.

At the next stage, in accordance with the assignment of the head of state, it is planned to actively involve regional innovation infrastructure facilities in the Astana Hub ecosystem - technoparks, incubators, accelerators, innovation centers, computer hubs, start-up academies, marketing offices, universities, research institutes, etc. The measures taken will make it possible to prepare innovative projects of preliminary material in the regions themselves to continue participation in Astana Hub programs at the national level and cooperation with international partners [12].

As part of the work on the automation of utilities, 723 services are included in the register of utilities, of which 580 services, or 80.2%, are provided in electronic form. Work was carried out to optimize utilities, as a result of which the number of utilities was reduced by 17 (from 740 to 723). At the moment, the applicants are 17 activists and 21 public utilities. The optimization carried out reduced the average package of documents by 30%, as well as the duration of the provision of utilities - by an average of 3 times. Automation of public services has already reduced the flow of paper documents by 70.8 million documents and generates an indirect economic effect by more than 8.4 billion tenge.

As part of the digitization of medical services, 97.5% of organizations were

equipped with computer equipment and 100% were connected to the Internet, 17.9 million (95.7%) residents of Kazakhstan have regional electronic health passports. The measures taken made it possible to improve the provision of medical services to the population and facilitate the work of doctors.

Due to preliminary registration through electronic services, the “live” queues at polyclinics were reduced by 30%, which halved the time spent by patients in polyclinics. The time required to get search results is reduced by 1.8 times (from 7 to 4 hours). Reduction of the working time of doctors and patients by 45% due to a reduction in the average time of patient care, optimization of the operation of ambulances: reduction of the processing time for calls arriving at the control room by 26% and, as a result, a reduction in the waiting time for the arrival of ambulances by 1, 3 times. Work will also continue to implement village-level health information systems and increase the provision of electronic health passports by 100%.

As part of the digitization of education, schools were equipped with computers. Students use electronic newspapers and magazines (6703 out of 7014 schools). 90% of schools (6,336 schools) have Internet at a speed of 4 Mbps or more. An electronic queue has been introduced in 78.5% of preschool institutions, and 70.3% of schools accept students online. 74% of government educational services are automated. Overall, the digitization of the education system has reduced the quality gap between rural and urban schools by more than 30 percent.

Within the framework of the state program, much attention is paid to supporting SMEs and creating favorable conditions for small and medium-sized enterprises. For example, the launched information system “ASTANA-1” reduced the time for issuing customs declarations from several days and hours to one minute and processed 1.3 million declarations in automatic mode. Thanks to this, participants in foreign economic activity saved 56.6 billion tenge.

Systems of “electronic invoices” and “product labeling” were introduced, which also improve the business environment for enterprises and identify the “shadow” economy. From January 1, 2019, all VAT payers use the ESF. In addition, today there are 540,000 cash registers in use, 95% of which are connected online. It is planned to provide 1250 services of broadband Internet access to the rural population, including 56 in 2018, 705 in 2019 and 489 in 2020. This will allow 3,718 state and budget organizations to get access to high-speed Internet. At the same time, when forming the list of rural settlements, the list was sent for approval to local executive authorities. The built infrastructure stimulates the development of cellular operators. The total flight length will be over 20 thousand kilometers.

In addition, at the end of the third quarter of 2019, 841 state institutions and budgetary institutions located in 299 villages were connected. Continue to provide broadband access will be in accordance with the connection schedule. At the end of 2018, 10 targets and 20 indicators were planned, including the

country's place in various international rankings. So, in 2018, the country's position improved compared to the level of the Global Cybersecurity Index of the International Telecommunication Union. According to a report by the International Telecommunication Union (ITU), Kazakhstan ranked 40th in the Global Cybersecurity Index 2018/2019, which is 42 points higher than last year's ranking (82nd place). The classification takes into account five main criteria: legal framework, technical and organizational activities, international activities and development capacity building. In 2018, the country improved its position in the WEF GEEK ranking in terms of "availability of venture capital". Kazakhstan ranked 90th in this index, up 12 points from last year's ranking (102nd).

This year, the total number of people trained in digital literacy amounted to 532,000 citizens (according to the plan 462,846 people). In addition, about 78.3 thousand socially vulnerable citizens from the population are trained in digital culture.

One of the main concerns of society and trade unions associated with digitization is to replace people with automated processes and, as a result, the masses of the unemployed. However, digitalization is not a substitute for human labor, but is an auxiliary tool for increasing efficiency and improving qualifications. The digitization process creates new jobs and forms of employment that do not have routine operations, and it is important to recognize the potential of digitization in a timely manner and effectively integrate it into training at all levels [14].

That is why special attention must be paid to retraining, both for employees and for young people. For example, one of the areas of study is the internship programs "Digital Summer" and "Zhas Orken", within the framework of which internships are carried out for graduates of domestic universities.

At the same time, among civil servants there is no understanding of the level of digital competencies, which can lead to an increase in bureaucratic processes and ineffective work.

Digitization is not a reduction in people, it is a change in skills. And the main, key success of any enterprise at any time, at all times and with any technology has been and remains people.

In Kazakhstan, the e-commerce market is also growing rapidly. At the same time, this direction has become popular in the country relatively recently. Over the past three years, the share of e-trading in total retail trade has grown significantly, and the COVID-19 pandemic has only accelerated the process. So, if in 2018-2019 the share of e-commerce was 2.9% and 3.8%, respectively, then in 2020 it almost tripled and reached 9.7%.

The introduction of a social distancing regime, quarantine and other restrictive measures led to a fundamental shift in the structure of the global demand for online purchases of goods and payment for services, as well as to an increase in the use of digital communication tools and remote consumption [15].

Electronic commerce in Kazakhstan contributes to the development and increase in the volume of domestic and foreign trade, non-cash payments, reducing business costs and minimizing shadow turnover. In 2020, the volume of non-cash payments increased 2.4 times, up to 35.3 trillion tenge. The growth trend is also observed in the current year: for two months of 2021, the volume of non-cash payments amounted to 7.8 trillion tenge, having increased more than 2 times compared to the same period last year. At the same time, the share of online payments made via the Internet and a mobile phone amounted to 82% of the total volume.

Significant growth in the volume of e-commerce is observed both in the B2C (business-to-consumers, consumer market) and B2B (business-to-business, corporate market) segments. This is due to the establishment of the infrastructure of trade POS terminals, the entry into the Kazakhstani markets of Apple Pay and Samsung Pay, the stimulation of customers by banks through bonuses and cashbacks, as well as the active use of non-cash payments in all types of public transport. Now there are more than 108 thousand trade enterprises in the country, where you can pay for goods and services by non-cash method.

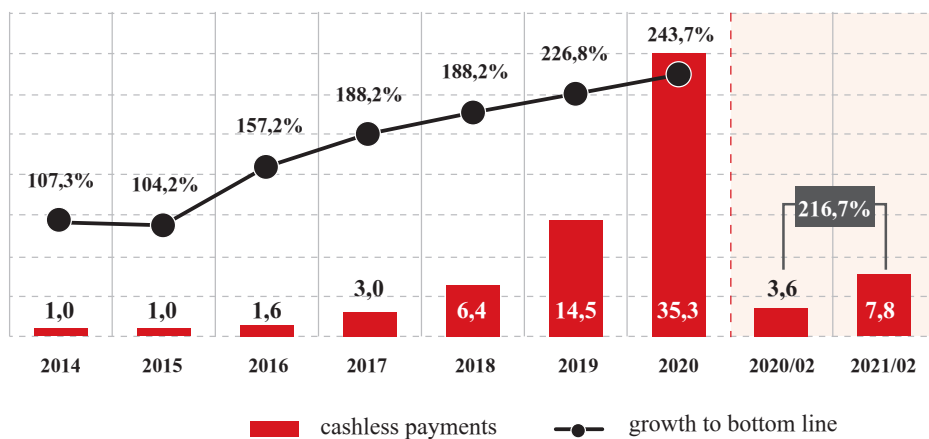


Figure 2. Cashless payments using payment cards issued by Kazakhstani issuers

Source - Ranking.kz calculations based on data from the National Bank of the Republic of Kazakhstan [16]

Conclusion

Thus, the development of the digital economy is one of the priorities of the state policy of Kazakhstan. Based on the analysis carried out, we can say that the non-digital indicators that affect the development of the digital economy in the country are at a fairly good level. Regulatory regulation, digital security is well developed, while human capital requires further development. Kazakhstan has achieved the greatest success in the development of the basic component of the

digital economy - the Internet infrastructure, as well as in increasing the level of involvement in the digital economy of the population, business and the state. However, the level of use of digital technologies by the population in remote regions of the country is still insufficient.

As for digital indicators, we can say that the use of digital technologies, e-commerce, digitalization of the public sector, education, healthcare are developing at a significant pace and show a positive result.

In the future, Kazakhstan needs to strive to increase the level of involvement of the population in the digital economy by increasing the level of Internet penetration in small towns and villages. Moving to full-cycle online processes, ie from traditional “live” to electronic signature, from paper to fully electronic document flow and electronic identity cards, will further increase the level of engagement. We also see significant potential in the digital development of Kazakhstan through the provision of additional electronic services such as telemedicine and online education [17].

Further development of the digital economy in Kazakhstan will bring additional economic benefits to the country. For example, the development of e-commerce can stimulate business activity by providing consumers with additional channels to small and medium-sized businesses. It also has the potential to reduce the size of the shadow economy, since online transactions will be transparent, which will reduce the level of “gray” transactions in cash.

At the same time, digital transformation will require a fundamental revision of the approach of private business and government to interaction, decision-making, stimulating innovation and creating a regulatory environment where each of the participants in the system would play a significant role.

Consumers who enjoy most of the benefits of the digital economy must be open to new opportunities and play an active role in the development of digital services. This will require a dialogue with the state, cross-sectoral cooperation and joint development of large projects.

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