УДК 330.47; 519.876.5

08.00.13 - Математические и инструментальные методы экономики (экономические науки)

АНАЛИЗ РАЗВИТИЯ ОСНОВНЫХ НАПРАВЛЕНИЙ ЦИФРОВИЗАЦИИ РОССИЙСКОЙ ЭКОНОМИКИ

Ларин Сергей Николаевич
канд. техн. наук, SPIN-код: 3956-1920
ORCID: 0000-0001-5296-5865
ведущий научный сотрудник
e-mail: sergey77707@rambler.ru

Соколов Николай Александрович
канд. физ.-мат., наук
ORCID: 0000-0002-2273-4705
ведущий научный сотрудник
e-mail: sokolov_nick@rambler.ru

Хрусталев Евгений Юрьевич
д. экон. наук,
ORCID: 0000-0002-3267-104X
главный научный сотрудник
e-mail: stalev777@yandex.ru
Центральный экономико-математический институт РАН, г. Москва, Россия

Внедрению новых технологических укладов в экономику и жизнедеятельность мирового сообщества во многом способствуют стремительные преобразования направлений экономического развития. Сегодня в экономиках многих стран мира ведущие позиции занимают накопление новых знаний и внедрение цифровых технологий. Именно они вызывают кардинальные изменения не только во всех отраслях мировой экономики, но и активно преобразуют всю жизнедеятельность общества, вплоть до конкретного человека. Под влиянием накопления новых знаний и применения цифровых технологий открываются новые возможности на всех уровнях управления (государство, регион, местный уровень). Но, вместе с этим, возникают и новые риски, как для функционирования органов власти, так и для бизнеса, а также в области их взаимодействия. Поэтому цифровая трансформация экономических и социальных изменений предопределяет необходимость постоянного поиска более эффективных способов управления ими для достижения положительных результатов

Ключевые слова: РОССИЙСКАЯ ЭКОНОМИКА, ЦИФРОВЫЕ ТЕХНОЛОГИИ, НАПРАВЛЕНИЯ РАЗВИТИЯ, АНАЛИЗ, МЕТОДОЛОГИЯ ОЦЕНКИ

DOI: http://dx.doi.org/10.21515/1990-4665-161-025

UDC 330.47; 519.876.5

08.00.13 - mathematical and instrumental methods of economics (economic sciences)

ANALYSIS OF THE DEVELOPMENT OF THE MAIN DIRECTIONS OF DIGITALIZATION OF THE RUSSIAN ECONOMY

Larin Sergey Nikolaevich
Cand.Tech.Sci., RSCI SPIN-code: 3956-1920
ORCID: 0000-0001-5296-5865
leading researcher
e-mail: sergey77707@rambler.ru

Sokolov Nikolay Alexandrovich
Cand.Phys.-mat.Sci.,
ORCID: 0000-0002-2273-4705
leading researcher
e-mail: sokolov_nick@rambler.ru

Khrustalev Evgeniy Yurievich
Doctor econ. sciences,
ORCID: 0000-0002-3267-104X
chief researcher
e-mail: stalev777@yandex.ru
Central Economics and Mathematics Institute RAS, Moscow, Russia

The implementation of new technological steps in economics and life activities of the world community is mainly contributed by drastic transformations of trends of the economic development. Nowadays the accumulation of the new knowledge and the implementation of digital technologies occupy leading positions in economics of many world countries. Precisely, it causes cardinal changes not only in all branches of world economics, but also actively transform all social life activities, down to a certain person. Under the influence of the accumulation of the new knowledge and of the application of digital technologies are opened new opportunities at all management levels (state, region, local level). But, at the same time, it causes new risks both for the functioning of governmental authorities, as well as in the field of its interaction. In this juncture the digital transformation of economic and social changes predetermines the need for the permanent search of more effective methods of its management in order to achieve positive results

Keywords: RUSSIAN ECONOMY, DIGITAL TECHNOLOGIES, DEVELOPMENT DIRECTIONS, ANALYSIS, ASSESSMENT METHODOLOGY

Introduction

The successful implementation of digital technologies to the economics of our country is not possible without the timely adoption and the phased solution of a complex of measures by key trends of its development at all levels of management. First of all, we are to create conditions for the development of non-digital trends, which should become a basis for the digital transformation of the national economics. With that for each of leading trends it is necessary to develop detailed “travel maps” in conformity with strategic goals. Besides that we are to reveal branches, able to generate long-term strategic prospects of the economic development on the basis of digital technologies, as well as to quickly obtain groundbreaking effects. The digital transformation of economics is to be based on the implementation of new managerial mechanisms, which will be attractive for all members of this process in the part of obtaining of additional economic profits.

The digital transformation of economics destructs barriers between branches, regions, organizations, traditional hierarchic management structures and requires new approaches to the implementation of innovations [1]. Basic elements of such approaches should be opened communications and exchange of the knowledge, creative cooperation and the solution of problems, detailed initiatives, oriented to the implementation of opened innovations.

At the country level the priority of the digital transformation of economics should become an important strategic task. Its solution will provide for the achievement of targets, set in the Target program «Digital Economics of the Russian Federation » [2]. In order to develop innovations and business on the basis of the digital transformation of economics the use of effective motivations is required. The innovative development is not possible without the effective coordination between the government, the private business and scientific & research organizations. Besides the every possible support of the fundamental

scientific research and the world level R&D development in our country the state should properly foster the commercialization of R&D results. The private business should develop strategies for the market access and for the creation of new products of the digital economics, as the digital transformation of the industry can provide quickly enough to provide for the obtaining of the profit in all chains of the production & sales chain, while increasing the competitive ability of economic branches [3].

The important term of the reinforcement of bases of the digital economics should be the creation of the sustaining infrastructure, able to adequately react to the explosive growth of the digital development. With that it is necessary for such infrastructure to have strong ties for the reinforcement of the digital transformation both horizontally – by all branches of the industrial economics and of the service industry, - and vertically, at the national, regional and municipal management levels. The effective interaction between the government, the private business and scientific & research organizations serves as the basis for the technology breakthrough, which the Russian economics has to achieve.

The development of digital skills of the personnel of enterprises in scales of the whole country requires investments in education platforms for the preparation of new experts and the upgrading of the qualification of existing employees with the orientation to the education model and for the obtaining of the knowledge by the expert during his/her lifetime.

The implementation and the development of the digital economics actively contributes to the development of the competitive production, which implementation can bring sufficiently high dividends. Thereby nowadays it the digital transformation of economics becomes more important along with the well-managed goal-oriented policy of the establishment of the digital economics and of its successful implementation.

Methods

The generally recognized approach to the analysis of the current status of the development of the digital economics in different countries is DECA methodology, offered by the World bank in 2017 [4]. In respect to terms of the Russian economics has been modernized by employees of the Institute of the Information Society Development (IRIO) in 2018-2019 [5]. Inter alia, 15 trends were determined, allowing to evaluate the current level of the existence of favorable terms for the digitalization of the Russian economics. It comprised non-digital and digital trends of development of the Russian economics, trends of its digital sector development, trends of the digital transformation of the state (regional, municipal) authority, all forms of the business, services, provided to the population, as well as the evaluation of potential consequences of its influence on the social & economic development of the society (economic growth, occupation, quality of services, social welfare).

Was offered the 5 point score of this level evaluation, for which 1 score corresponds to the initial level, 2 scores – to the developing level, 3 scores – to the intermediate level, 4 scores – to the advanced level and 5 scores – to the high level of existing favorable conditions for the digitalization of the Russian economics.

The number of international experts included some World bank experts. The number of national experts comprised several experts from IRIO, G.V. Plekhanov REU, CEMI RAS, Federal Bureau of the Medical & Social Expertise, Financial University at the RF Government and other scientific & research organizations. Besides that, in order to obtain comparative evaluations of indices and its components for each trend were used international comparisons and the statistic data (if any).

Results and Discussion

Let’s carry out the short analysis of the development of basic methodological trends and assess its current level in terms of the Russian economics.

1 Non-digital trends in methodology.

Basic non-digital trends of the methodology comprised following ones.

1.1. State policy and strategic planning, which digitalization level has been recognized as the average one.

The basic circumstance of such evaluation of this trend is that in the modern Russia there are a fair number of documents of different level, determining strategic prospects of both of the social & economic development of the country, as well as of its digital economics. Anyway, the most part of it is ineffectually coordinated with each other, does not fully correspond with basic provisions of the current law on the strategic planning, as well as uses best management practices. Target indices of these documents are not fitting together, its composition is heterogenous, it is not in-built in the consolidate system of efficiency indices, oriented to the achievement of the harmonious development of the digital economics.

1.2. Leadership and institutions, which digitalization level has also been recognized as the average one.

The presence of institutions, aiming to occupy leading positions in the development of the digital economics, in particular, is being systemically controlled by relevant state structures. In most national and target programs at the state level is planned the implementation of measures for the development and implementation of information technologies into main spheres of social and business activities. The circumstance confirms the presence of certain motivations for private business structures, oriented to the development of the digital economics. Anyway, motivations for the private business and population,

adequate to the modern level of its development, are taken with the material delay.

1.3. The digitalization level of the legislative regulation and standardization also does not exceed the average one.

The transition to the market required not only the adoption of the relevant legislative basis for the functioning of economics in new conditions, but also the solution of many issues, referred to the regulation of relationships of economic entities in the process of its business activities. Starting from the year 2000 there was a systemic practice of the periodic actualization of the legislative basis, review and cancelation of the fully or partially obsolete norms and rules, as well as the adoption of new ones. Naturally, first of all, all attention has been concentrated on the bringing of the legislative basis in conformity with objective realities of business activities of organizations with different kinds of property. And only during last several years the point of influence of this work started to change its position for the actualization of current standards. Nowadays this trend has been recognized as one of most important in the part of development of the digital economics.

1.4. The human capital, which digitalization level has been recognized as advanced one (in distinction from first three trends).

This circumstance should not be considered as something unexpected or extraordinary, as for many years our country occupies high positions in different kinds of ratings by evaluations of the human capital development. All the time the human capital was considered as the most important competitive advantage of our country at the competitive level. Anyway, the educational system, which is nowadays been reformed, plays one of leading roles in the formation of the human capital. In this juncture it is not fully adopted to demands of the digital economics, the most part of educational programs and resources is not actualized for requirements of the digital economics. All this cannot provide for

the formation of required professional competences at future experts. As a result the country lacks qualified experts in digital economics.

1.5. The digitalization level of the R&D and innovative developments in the field of the development of the digital economics is considered as the average one.

As to this trend there is an obvious contradiction between the existing considerable scientific potential and the already functioning infrastructure of the innovative development of the country on the one hand and on the other hand – the level of the scientific research in the field of the digital economics, the interaction of private business structures with scientific and educational organizations, which still remains low.

1.6. The digitalization of the business environment in our country is at the average level.

The modern status of this trend in Russia is at the level, which is closer to the advanced one, as in the country there are created and secured such conditions, which can be easily used for its improvement. However, just in this trend there are stilled unsolved problems, referred to the insufficient protection of the intellectual property [6]. There should be added the lack of access to latest technologies because of sanction restrictions. Obviously, the business environment condition should be expected only after its partial withdrawal.

1.7. The confidence to products and services of the digital economics, as well as the safety of the digital information are at the advanced level.

Mainly, it is referred to its active promotion and implementation in the field of the business, where such issues as safety and secure storage of the information are being actively developing. At the same time no state authority neither business structures are not involving the population in such processes. The initiative comes from the minor part of the active population, which has realized advantages of the digital economics. With that the most part of the population remains is untapped directly by digitalization processes. In this

juncture it harbors a certain mistrust to many important components of the digital economics [7].

2 Digital trends of the development of the Russian economics are represented by such components.

2.1. The digital infrastructure, which general level is characterizes as advanced one.

Nowadays the digital infrastructure comprises the developed and competitive market of telecommunications, the mobile cellular communication has covered almost all population stratums, the contingent of the population, for which the price for the Broad Band WL also becomes available. Separately we should concentrate on the evaluation of the cybersecurity of state and business structures. While in many developed countries the mass media often displays messages, concerning hackers' attacks, in our country people are mostly talking about the degree of the digital information storage security and about the development of new means for the reinforcement of its protection.

Anyway, this trend still has got trouble spots, to which should be referred the weak development of the 4G cellular communication, data processing centers and of the national market of the data analysis.

2.2. Our country enjoys the persistent advanced level in digital platforms and services.

Nowadays in our country has been created a huge number of digital platforms and services, which are being widely used in all branches of economics (transport, logistics, tourism, construction, agriculture, electronic trading, healthcare, education, finances, insurance, culture, entertainment industry etc). Most of its carries out its activities not only in Russia, but also abroad, where it is in high demand [8].

In order to achieve the strong development level it is necessary to solve the problem of the development of national mobile ecosystems, attached to

mobile operational systems. Unfortunately, such industries are only appearing in the territory of Russia, what encourages a certain optimism.

2.3. The development of new digital technologies as awarded the average development level.

This trend is characterized by the still weak real need for new digital technologies of the analysis of the extensive data, of the artificial intellect, of the Internet of things, of additive technologies, of the robotics, blockchain etc. There are only few own Russian original developments, in this juncture foreign systems are mostly used. Anyway, national developments also step by step appear in the Russian market.

2.4. The development level of the digital sector of the Russian economics is determined as the average one in methodology. This sector has got the state support in the part of the development of programs and given indices. It produces about 3,5 % of the GDP of the country, and the share of occupied ones achieves 3,5 % from the total volume of the able-bodied population. With that resulting indices of the digital sector do not correspond with the world level. If the share of R&D expenses of Russia is inferior in comparison with EU countries, but not very obviously – 1,2% against 3%, accordingly. Then according to the export potential the development of the Russian digital sector cannot be compared with the equivalent sector, for example, the Indian one (7 bln USD in 2016 – Russia; 110 bln USD in 2015 – India) [3].

3 The digital transformation of the state sector in the methodology is represented by following trends.

3.1. Digital government – general level – average.

The implementation of the Unified portal for state services, the growing number of its users and the growing number of state and municipal services, provided by the existing infrastructure of the electronic government is testimony of certain successes. Anyway, following steps are required to nail it down in the nearest future: to transform the architecture itself, to reengineer all processes, to

upgrade national data bases, to provide the common use of digital services by local self-government authorities, to provide services of governmental digital platforms to citizens and business, to provide its interaction.

3.2. Digital healthcare – general level – developing.

As to the digitalization of the healthcare branch, it is difficult to agree with the expert due to following reasons:

- the initial stage of the informational support of this area is referred to 80-90s of the past century, when there have been first attempts of the implementation of informational technologies;

- nowadays in this area has been created a powerful infrastructure and was started the transition to the electronic medical work flow on the basis of the formation of electronic medical records for all citizens of our country;

- results of the practical application of the digital telehealth are being implemented on a massive scale, for example, while fighting against the spreading of the COVID-19 pandemics;

- nowadays the general public has got the free access to the whole range of digital medical services;

- in our country in certain healthcare areas have been created and are successfully functioning digital platforms, which on the basis of methods of the processing of huge masses of information are being generating, consolidating and spreading the actual data in different regions and clinics;

- some digital platforms are in high demand abroad, as it consolidate most advanced developments in most problematic fields of medicine, performed by Russian scientists at the premium level.

As an example we can give the actively functioning bio information digital platform, developed by Onco Genotest LLC for the comprehensive individualized approach to the treatment of oncologic patients. Its main purpose is the joint processing and interpretation of the clinical data, as well as of results of molecular & genetic analyses for the selection of the individual therapy. This

platform is a universal instrument for the obtaining of more precise diagnoses of patients for oncologists [9, 10].

Problems and shortages are still here, but nowadays it is easy to see and there are clear ways for its solution. First of all should be highlighted the need for the transformation of the architecture of the Consolidate state information system in the field of healthcare in order to expand the spectrum of use by all layers of the population of digital services for the provision of medical services.

3.3. Digital education – general level – average.

The education area in our country is still digitalized slowly, with an eye on the development of the legal framework and of the scientific & methodic bases and of the generation of educational standards, provided peculiarities of the digital economics. At the same time it should be noticed, that modern educational information & digital technologies have already penetrated in many educational establishments of all levels, starting from the elementary school and ending by the higher professional education. This is actively promoted by the infrastructure, necessary for the full-scale implementation of the digital education. The spectacular example in the development of this trend has been obtained quite recently, during the fighting against COVID-19 pandemics, when almost the whole education has passed to the remote digital access mode and has supported it rather successfully for more than two months. The basic problem of the accelerated digitalization of this trend is that pedagogues and administrators are not being prepared quickly enough for the new digital mode in the educational mode, as well as for the creation of digital educational resources of programs.

3.4. Digital culture – general level – average.

In the field of the development of the digital culture in our country at the state level were undertaken several constitutional documents, stimulating the digitalization of the cultural heritage. Many cultural establishments actively implement digitalization programs, were developed basic registries and formats

for the expansion of its interaction with the society by the digitalization. But this trend has also got a range of unsolved problems, referred to the limited availability of certain digitalized works for users of the Internet and of social networks. The creation of digital platforms in different cultural areas is still not developed enough. The conflict between right holders and IT-industry structures, using their works, has not been solved at the legislative level.

Notwithstanding most serious transformations in the field of the business digitalization, its general level is still evaluated as the average one, as:

- the program of the achievement of strategic goals of the digital transformation of the business has not been developed;

- both the state and tax regulation considerably restrict the creation of favorable conditions for the digitalization of the private business;

- there is no substantiated approach to the development of the human capital in this area;

- there are serious problems with general standards of the data integration and with the support of the timeliness of data bases in different branches of economics.

The development of the business digitalization is considerably slowed down by the absence of the national scientific stock, digital programs for the preparation of qualified experts and sanction restrictions of the interaction with the world scientific society.

As a positive factor can be highlighted the active automation of many spheres of production and managerial activities almost at all enterprises of different economic branches. Here we can give the example of Econiva agrarian holding, which since July 2020 has started the implementation of the system for the autonomous management of the agricultural technique, developed by Cognitive Pilot. Cognitive Agro Pilot automated complex represents the automatic driving, installation and adjustment system, which technical and

engineering maintenance will be performed by Cognitive Pilot experts. Works will be held in 35 regions of the RF, more than in 10 climatic areas [11].

Besides that the electronic commerce market is being actively growing, where as a growth driver is acting the internet trading development. Partially it was contributed by the transfer of many trading operations to the remote digital access mode through Internet shops and the home delivery system, which has been used rather successfully in the period of fighting against COVID-19 pandemics.

Major changes have taken place in the digitalization of all layers of the population, which step by step gets used to the use of products and services of the digital economics. The general level of this trend development can be evaluated as the average one, as:

- in large cities and socially important branches the population joins the digital economics, mainly due to the intensive development of the infrastructure and of various informational applications;
- gender differences almost do not show on the use of the Internet;
- the confidence to the digital government is growing step by step;
- the number of holders of plastic cards is on the rise;
- more and more people of the country choose online purchases.

With that this trend has got enough problems, which, if not solved, will hold the development of the digitalization of our country. To such problems are referred: the considerable arrearage of countrymen as to the access to digital technologies; as to its access to the Internet and to its use Russia is also behind world leaders, though values of the Internet use exceed almost all European countries.

While consolidating the short analysis of the digitalization of the Russian economics, the level of potential social & economic economic effects can be evaluated as the average one. Our country has got a considerable potential for the economic growth and the increase of the quality of services at the

digitalization level. But its implementation is going slowly due to the restricted set of digital services and its use by different layers of the population. Besides that volumes of investments in digital technologies are still not sufficient, there are lacks in the standard provision, there are no favorable conditions for the business climate development.

Conclusion

For the purpose of the effective implementation of the Target program «Digital Economics of the Russian Federation» we will have to cure existing inequalities in the development of regions and municipalities. This problem can be solved by the provision less developed regions with wider opportunities to use digital technologies in different fields of it social & economic activities. Besides that it is necessary to stimulate the demand for innovations from the part of large scale state corporations, to provide the preparation of qualified experts with different digital skills, to form innovative clusters in regions, to develop adequate mechanisms for the financing of digital transformations.

In order to develop the interest of the internal market in results of the digital transformation of economics at large scale industrial enterprises and in state corporations it is necessary to provide the increase of the demand for the development and implementation of digital technologies. Should be developed certain measures for the improvement of the business climate, to provide the stimulation of innovations at the level of regions. Measures, enhancing the confidence of all population stratums for products and technologies of the digital economics and its use in the daily life will be of great importance. It is necessary to accelerate the development of the digital infrastructure in remote and agricultural districts and provide its population with all conditions for the use of all preferences of digital products, services and technologies.

As to used evaluative dimensions the comprehensive DECA method can be scaled rather simply not only for the whole Russian economics, but also for economics of federal entities, as well as for separate branches and regions.

For Russia it will be possibly to carry out the technology breakthrough, to join the group of countries, leading in the development of the digital economics, and to obtain in future stable economic and social dividends only with the permanent orientation of the country establishment to the digital transformation in key branches of economics and to the achievement of tangible results in these trends.

Список литературы

1. Аналитический обзор изменений в цифровой экономике Российской Федерации в 2018-2019 годах. URL - https://digest.dataeconomy.ru/annual-report-2019_tech (дата обращения 10.09.2020).

2. Целевая программа «Цифровая экономика Российской Федерации». Утверждена Постановлением Правительства РФ от 28.07.2017 №1632-р.

3. Доклад о развитии цифровой экономики в России. Конкуренция в цифровую эпоху: стратегические вызовы для России. 29.05.2019. URL - https://roscongress.org/materials/doklad-o-razvitii-tsifrovoy-ekonomiki-v-rossii-konkurentsiya-v-tsifrovuyu-epokhu-strategicheskie-vyz/ (дата обращения 02.09.2020).

4. Digital Economy Country Assessment (DECA). The World Bank in collaboration with IIS, 2017.

5. Хохлов Ю.Е. Анализ текущего состояния развития цифровой экономики в России. Институт развития информационного общества. Аналитический доклад 28.10. 2019. URL - http://DECA.iis.ru (дата обращения 02.09.2020).

6. Хрусталев Е.Ю., Славянов А.С. Особенности применения зарубежного опыта защиты интеллектуальной собственности при формировании национальной инновационной стратегии // Экономический анализ: теория и практика, 2017, Том 16, № 4, С. 665-676. DOI: 10.24891/ea.16.4.665.

7. Волкова А.Д., Костина Т.А., Ларин С.Н., Ноакк Н.В., Ларина Т.С. Эмпирическое исследование социальных представлений и уровня доверия пользователей к продуктам цифровой экономики на групповом уровне // Международный евразийский журнал, 2019, №5(62). Часть 6. С.53-59. DOI:10.31618/ESU.2413-9335.2019.6.62.132.

8. Цифровые платформы. Подходы к определению и типизации. Ростелеком [Электронный ресурс]. URL - https://files.data-economy.ru/digital_ platforms.pdf. (дата обращения 02.09.2020).

9. Официальный сайт компании ООО «Онко Генотест». URL - **Ошибка! Недопустимый объект гиперссылки.** (дата обращения 04.09.2020).

10. Костина Т.А., Ноакк Н.В., Ларин С.Н., Соколов Н.А., Пятницкий М.А. Цифровизация в здравоохранении на примере выбора лечения для онкобольных // Журнал «Modern Economy Success», 2020, №2. С. 151-159.

11. Агрохолдинг «Эконива» начинает оснащать 10 тыс. комбайнов автопилотом. URL - http://www.tadviser.ru/index.php/Проект:ЭкоНива_(Cognitive_Agro_Pilot_Система_автоматического_вождения) (дата обращения 04.09.2020).

References

1. Analiticheskij obzor izmenenij v cifrovoj jekonomike Rossijskoj Federacii v 2018-2019 godah. URL - https://digest.dataeconomy.ru/annual-report-2019_tech (data obrashhenija 10.09.2020).

2. Celevaja programma «Cifrovaja jekonomika Rossijskoj Federacii». Utverzhdena Postanovleniem Pravitel'stva RF ot 28.07.2017 №1632-r.

3. Doklad o razvitii cifrovoj jekonomiki v Rossii. Konkurencija v cifrovuju jepohu: strategicheskie vyzovy dlja Rossii. 29.05.2019. URL – https://roscongress.org/materials/doklad-o-razvitii-tsifrovoy-ekonomiki-v-rossii-konkurentsiya-v-tsifrovuyu-epokhu-strategicheskie-vyz/ (data obrashhenija 02.09.2020).

4. Digital Economy Country Assessment (DECA). The World Bank in collaboration with IIS, 2017.

5. Hohlov Ju.E. Analiz tekushhego sostojanija razvitija cifrovoj jekonomiki v Rossii. Institut razvitija informacionnogo obshhestva. Analiticheskij doklad 28.10. 2019. URL - http://DECA.iis.ru (data obrashhenija 02.09.2020).

6. Hrustalev E.Ju., Slavjanov A.S. Osobennosti primenenija zarubezhnogo opyta zashhity intellektual'noj sobstvennosti pri formirovanii nacional'noj innovacionnoj strategii // Jekonomicheskij analiz: teorija i praktika, 2017, Tom 16, № 4, P. 665-676. DOI: 10.24891/ea.16.4.665.

7. Volkova A.D., Kostina T.A., Larin S.N., Noakk N.V., Larina T.S. Jempiricheskoe issledovanie social'nyh predstavlenij i urovnja doverija pol'zovatelej k produktam cifrovoj jekonomiki na gruppovom urovne // Mezhdunarodnyj evrazijskij zhurnal, 2019, №5(62). Chast' 6. P. 53-59. DOI:10.31618/ESU.2413-9335.2019.6.62.132.

8. Cifrovye platformy. Podhody k opredeleniju i tipizacii. Rostelekom [Jelektronnyj resurs]. URL - https://files.data-economy.ru/digital_platforms.pdf (data obrashhenija 02.09. 2020).

9. Oficial'nyj sajt kompanii OOO «Onko Genotest». URL – **Ошибка! Недопустимый объект гиперссылки.** (data obrashhenija 04.09.2020).

10. Kostina T.A., Noakk N.V., Larin S.N., Sokolov N.A., Pjatnickij M.A. Cifrovizacija v zdravoohranenii na primere vybora lechenija dlja onkobol'nyh // Zhurnal «Modern Economy Success», 2020, №2. P. 151-159.

11. Agroholding «Jekoniva» nachinaet osnashhat' 10 tys. kombajnov avtopilotom. URL - http://www.tadviser.ru/index.php/Proekt:JekoNiva_(Cognitive_Agro_Pilot_Sistema_avtomaticheskogo_vozhdenija) (data obrashhenija 04.09.2020).