

UDC 339.9
МРПТИ 06.51.02

DOI: <https://doi.org/10.37788/2023-1/88-98>

S.A. Buka

Baltic International Academy, Latvia
(e-mail: stanislavs.buka@bsa.edu.lv)

New tendencies in the digital transformation of the world economy

Abstract

Main problem: processes of economic modernization in practical solution should reveal common understanding between institutional, legislative and industrial relations, essence of organizational transformations, formulation of basic provisions for instrumental support of independent transition of technological processes to new round of socio-economic relations. Processes should be based on new characteristics of standardization, methodology of system functioning, technical conditions, norms, rules, instructions and regulations, which provides for institutional changes.

Purpose: to explore new trends in digital transformation of the world economy, as well as to show that tasks and settings of vector of technological processes of digital economy go far beyond known principles of economic development, joining the mainstream of global trends.

Methods: theoretical and methodological basis was concepts, hypotheses and theories presented in works of domestic and foreign researchers. The methodology is based on systematic approach, in which methods of comparative, factorial, subject-object, structural-functional, statistical, correlation analysis and extrapolation were applied.

Results and their significance: analytical review of theoretical approaches of foreign economists on this problem was carried out, which allowed author to identify theoretical, methodological and applied foundations for determining directions within framework of state strategy for planning socio-economic development. Scientific discussion on conditions for changing model of economic development, modernization of economy with transition to first and second generation platforms, hereinafter referred to as ecosystems, is evaluated. The fundamental differences between theoretical argumentation of proponents of promoted digital technologies and their opponents are determined. Positions of argumentation of impact on change of driving factors are analyzed in order to adjust methods of state policy and choice of vector of technological processes. The question of correlation of macroeconomic theory in evolutionary sense, which goes beyond known principles of economic thought of digital transformation, is considered.

Keywords: technological process, rationality, irrationality, "golden ratio", digital economy, correlation coefficient.

Introduction

The world economy is rapidly introducing advanced technologies, applying continuous transformation in real time based on updates. This is determined by innovative processes that form their balance, creating prerequisites for the transition of the system to a new level in the long-term period.

New trends in economic theory reveal strategic directions of digital transformation of the economy, modernization of technological processes with the transition to first- and second-generation platforms, also referred to as ecosystems. Modern architectural capacities are not compatible with the introduction of breakthrough technologies, such as neural networks, blockchain technologies, artificial intelligence.

In order to identify the priority areas of the production sphere, the development and testing of the provisions are based on a theory that, in an applied sense, has a modern beginning of "creative destruction".

The model of transformational economy changes the paradigm and essential characteristics of economic theory [1]. It is the new technological paradigm of economic thought that turns human capital into a dominant economic development capable of ensuring an independent transition of technological processes.

Together with the institutions that form socio-economic relations in the transformational economy with the transition to platforms that have irreversible processes, conditions of “creative destruction” will be created that will determine the beginning of offensive progress [2; 217].

Materials and methods

The technological paradigm allows applying new conceptual solutions and forming theoretical and methodological approaches, which is the beginning of a new model of economic development, or a transition to the category of digital economic theory. The subject area of the transformation of the economy with the transition to platforms is the beginning of determining the functioning of the legislative and judicial authorities, determining the timing when the executive branch will be able to move into a programmable context through “smart contracts”. In our opinion, first of all, it is necessary to develop and approve a methodology for changing the institutional framework, according to which government institutions should form the institutional infrastructure [3].

Consider the components of digital transformation (table 1).

Table 1 – Digital transformation and its components

Digital transformation		
People	Processes	Products
Co-creation. Crowdfunding. Crowdsourcing. Privacy. Forums and blogs. Social networks and platforms	Cloud tools and applications. Mobile Internet. Sensors. Big and open data. Artificial intelligence. Robots	Open source products. Payment as consumed. Geolocation-based technologies. Wearable devices. Augmented reality. 3D printers
Note – Compiled by the author according to sources [1, 4]		

The methodology of this study is aimed at substantiating the choice of the management mode of production technologies, institutional human resources in the context of the transition to platforms. The analysis should take into account the relevant factors of economic transformation in the applied sense of the provisions of the modern neo-Schumpeterian theory. Depending on the main transformation processes of the economy, a new structure of the economy of “creative destruction” and “combinatorial buildup” is being formed, forming a new economic reality of economic development with its growth rates [2].

In their study, Y.P. Silin and E.G. Animitsa argue that the national technological initiative may be a harbinger of a new industrialization, but, in the author’s opinion, an alternative to this phenomenon lies in technological modernization [5].

A consistent study of the combination of different approaches in management makes it possible to see new management opportunities with the use/ implementation of technological solutions.

Research in this direction is carried out by institutes of the Russian Academy of Sciences, leading universities in Russia, and foreign scientific schools. A representative of one of these schools is J. Schumpeter with his theory of “creative destruction”, firmly embedded in the intellectual framework of economic theory, subordinated to the principle of “combinatorial buildup”. His theory implies the combination of any conceivable forms, types of things and forces to obtain something new [2].

O.S. Sukharev, from the point of view of theory, examines the economic growth of a rapidly changing economy: “The digital economy has already entered many years ago, it was simply not accepted to talk about it” [6].

A.I. Tatarkin, considering industrial policy as the basis for the systemic modernization of the Russian economy, defines innovative entrepreneurship as an independent economic phenomenon that occupies its own positions in specific areas of the economy [7].

A.N. Asaul explores the phenomenon of economic modernization based on technological innovations. Innovative processes in Russia are considered as sources of growth. Particular importance is given to the commercialization of intellectual property objects [8; 134].

D. Kosten believes that the integration and use of blockchain technologies with such areas as Big Data, the Internet of Things, 3D printing and artificial intelligence algorithms will completely

change the socio-economic texture of society in the next 5-10 years. Without the transition to new business models and management methods, modern production facilities will become obsolete and risk becoming unclaimed infrastructure elements [9].

K.B. Kostin believes that from the point of view of segmentation, the only correct solution to the problem will be the use of blockchain scaling. The author explores the transformation and modernization of the economy as a process that reflects the economic space with its influence on the economic field, where technological development is formed under the influence of demand factors in the economic system [10].

D.D. Burkaltseva argues that the use of the industrial Internet of Things implies the creation of a comprehensive solution that combines information processes with production processes, and this direction of development of the digital economy is a fairly new task. The author believes that the evolutionary processes of changing the model of economic development in digital technologies through the mechanism of innovative breakthrough will radically change economic, financial, production and management processes [3].

According to A. Abramov, the digital economy is already present in Russia, although this indicator significantly affects high-performance jobs. The digital economy carries risks while giving advantages [11; 102].

B. Heifetz believes that the digital economy has forced its way into our lives. With the fourth industrial revolution, it will take a dominant position in the next 5-10 years [12]. Robotics, drones, driverless cars, 3D printers – all this is a digital economy. In Russia, the cost of IT-technology software in 2015 amounted to \$ 7 billion; in India in 2005 – \$ 5 billion, in 2015 – \$ 115 billion. One very big disadvantage is that it is difficult to identify and assess the risks.

The proposed research hypothesis is based on the origin of the theory of the meanings of rationality and irrationality, without violating the theory of the "golden ratio".

This hypothesis should be taken into account when developing the concept of the institutional foundations of the control function of the state in the transformation of the economy, modernization of technological processes using VS-man technology.

The definition of the essence of organizational transformations, the development of new approaches in socio-economic relations is necessary to form the characteristics of the functioning of the system based on the development of the technological paradigm of combined technologies, which will allow the system to create a new quality. Combined technologies in the economy will ensure the modernization and transformation of socio-economic relations based on a technological and innovative approach.

Based on the above, we can draw conclusions:

- the use of innovative, progressive and transformational approaches will change the structure of the economy, ensuring economic growth;
- the change of the economic development model is combined with the process of technological innovation.

Since new technologies are breakthrough in all layers of the organization of society, their formation should be supported by legislation through the mechanism of institutional and socio-economic relations. In the author's opinion, this will lead to a change in the model of economic development, to the formation of a new technological paradigm, economic thought in search of the truth of the "beginning".

Results

The justification of the singular beginning of the gradual evolution of the world reveals irrationality as a truth accessible only to theoretical knowledge. In the book "The tenth" (1548-1620), Simon Stephen proclaimed a complete equilibrium of rational and irrational numbers [13; 36]. Exploring the processes of evolutionary development, we, first of all, consider rationality and irrationality, natural intelligence as a system of scientific principles, ideas that generalize practical experience with their laws.

Let's consider digital transformation and its ability to influence the development of society, the level of human thinking, quantitative and qualitative parameters. The evolution of the nature of technology has a constantly progressive offensive character, and only a person is able to determine the boundaries and functions of this offensive in the proportions of the "golden ratio". It is natural for a person to consider the entire spectrum of an object (object, process and phenomenon) of optimal and

stable equilibrium in a complex and voluminous way, since the ratio of its internal and external fields is equal to the irrational criterion – the “golden ratio”.

Based on this hypothesis, we observe a combination of a set of events enclosed in an object in which there is an object, a process and a phenomenon. To explore and understand an object, it is necessary to look into the depth of its transformations. Our task, if possible, is to find the truth that lies in changing the model of economic development of the transformation of the economy with the transition to platforms. If we justify all three components of the object and their initial positions (subject, process and phenomenon), we will see the qualitative depths of the network system. The development of any quality is accompanied by quantity, measure. Looking into the depth, we calculate our measure on which the basis is formed. Applying economic inversion (a violation of the usual course of things of the reverse order), we extract the root from a three-dimensional object, turning the time of its development backwards. We call this method 3D. Only 3D can point us to the beginning, to the original event (to the original object). Root extraction is an operation (process), the inverse of exponentiation, i.e. the inverse of multiplication (development process), formula (1):

$$\sqrt[n]{a} = a^{\frac{1}{n}} = a^{n^{-1}} = x_n \quad (1)$$

In search of the beginning of the measure, we substitute real legitimate values into the formula, formula (2):

$$\begin{aligned} \sqrt[\infty]{\infty_A} &= \sqrt[0]{0_A} = \infty_{A^\infty} = \infty_{A^0} = 0_{A^0} = 1 = \sqrt[C_M]{} = \sqrt[X_M]{} \times \sqrt[Y_M]{} \times \sqrt[Z_M]{} = 1 \cdot 1 \cdot 1 = \\ &= 1^3 \pm (0, 0, \dots, 0(a^{+1} + (-a^{-1}) = 1))^3 = (1 \pm 10^{-\infty})^3 = 1^3 \end{aligned} \quad (2)$$

where,

a – complex number (polar), a value in the range from zero to infinity;

C_M – changing the model of economic development, modernization of the economy (capacity of the economy);

X_M, Y_M, Z_M – many linear orthogonal dimensions of economic sectors and its objects;

∞_A under the mathematical root – the real sector of the economy is the polynomials of its objects with internal fields before the comma and external fields after the comma;

1^3 – the initial economic environment that encompasses everything and contains potential resources that never disappear;

∞ as a sign of the degree of the root, it means the infinite extraction of the root, or the raising of the root expression to the zero degree when:

$$\infty^{\frac{1}{\infty}} = \infty^0 = 1$$

A – the actual zero of irrationality, the minimum beginning that can only be imagined (if the inner field is 1, then the outer field is 0);

$+a^{+1}$ – a complex part of the economy or a complex object in which a potential or real internal (imaginary) field (with a plus sign) and an external (real) field (with a minus sign) are in the “golden ratio”, which will characterize the beginning of the modernization economy as an integral unit.

The equation takes us into the realm of irrational and complex volumetric numbers reflecting the internal (imaginary) field of the object (the new model of the economy) and the external rational (real at this time of the economy) field of the object. The total field of the economy (object) in 3D = 31.

Indeed, we will extract the square root, for example, in three directions according to type (2) an infinitely large number of times from any value greater than one of the density of the field of the transformational economy (object) and its events. As a result, we will get a result that will, decreasing, tend to unity (and one – imaginary – side of the complex value), but will never become equal to unity, no matter how much we continue this operation [14; 89].

In the limit of its irrationality, the result is equal to the potential non-vanishing power of the economic development model (units).

And vice versa, we extract the root an infinitely large number of times from any less than one value of the density of the object (event).

As a result, we will get a result that will, increasing, tend to unity (and the other – the real – side of the complex value), but will never become equal to unity, no matter how much we continue this operation. In the limit of its irrationality, the result is also equal to the potential non-vanishing energy of one. The unpolarized completeness of the Unit will be called the "model of economic development based on the reproductive function", where the invisible part of these functions is enclosed in 3D.

The potentiality of a Unit means its ability to re-polarize, divide and multiply to the current state of micro-, macro-, mega-levels, preserving the original energy of the unit.

A unit is an ideal mathematical stem of the tree of evolution, in which an object (economy), an object, a process, and phenomena can be observed simultaneously.

Significant changes are being made in the understanding of prioritization in favor of digital transformations, where innovations and new technologies take first or second place. In third place are professional personnel, then the place is given to the management strategy.

New technologies come to the fore in the ratio shown in figure 1, which is based on the Internet survey of large companies in 2021.

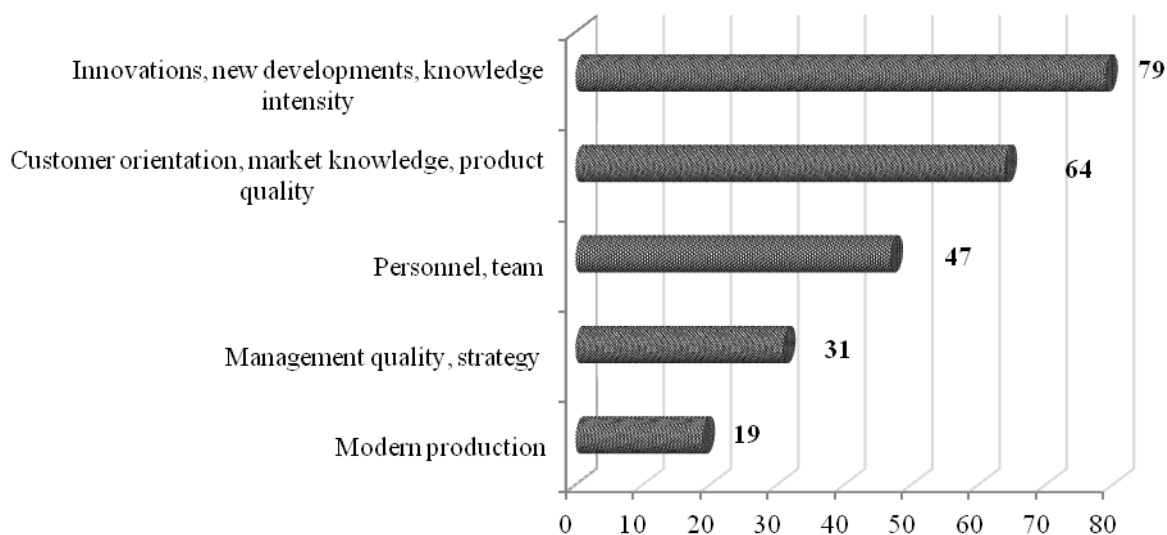


Figure 1 – The basis for the effective development of the company

It can be concluded that changing the model of economic development requires reflection of economic thought on the formation of a transformational economy. Adhering to the above, it can be determined that the technological paradigm of new economic thought, innovations of new thinking, innovations in the interaction of categories of economic theory is capable of developing digital technologies.

Thus, the purpose of the article – to analyze the positions and arguments of the impact of the driving factors of changing the model of economic development, transformation of the economy – has been achieved.

Discussion

Humanity lives in the era of globalization and integration of the world economy, changing the content of the main activities. Processes and phenomena are being transformed in management and economics.

A person transforms together with the system, acquires new qualities, which entails the transformation of social relations in groups, at home and at work.

These changes bring a kind of worldwide adaptation, as well as new threats. The digital economy is primarily aimed at the digital transformation of government institutions, the judicial and tax system, the legislative framework, and the service sector. The introduction of digital technologies into real life takes place not only within the framework of the technological progress of the economy. These technologies are used in almost all spheres of human activity – cultural, spiritual, educational, medical, service, IT and telecommunications.

Therefore, for now, everyone who is ready for change has time to prepare. In the longer term, the digital (electronic) economy can become the tool that will realize the centuries-old dream of freedom of people who are doomed to hard physical labor today. The widest opportunities for creativity, science (both fundamental and applied) and art will open up. Unexpectedly for many, the “Soviet” model of intellectual society will be in demand. However, in order for such an optimistic future to become possible, it is already necessary to realize, describe, approve and start implementing a new digital (electronic) economy project.

Purposeful and meaningful movement in this direction will help to avoid the dependence of the operational and technological activities of the domestic economy on foreign digital platforms, technologies and standards, as well as the active and uncontrolled circulation of virtual currencies (cryptocurrencies). We need a clear vision of the problems and a consistent policy of actions in order to use the emerging opportunities in time, preserving our digital, and therefore real sovereignty. The natural course of things already leads to the formulation of problems and the search for solutions in public administration. Studying the works of many Russian scientists, economists and monitoring scientific forums, we can conclude that the real digital transformation is based on the real sector of the economy, resources, infrastructure development, and, in our opinion, it is innovation and investment that will change the model of economic development. The modernization of the economy with the transition to ecosystem platforms is embedded in the digital transformation with the use of VS - man in the economy. According to experts, this process will become a source of GDP growth.

Consider the sources of GDP growth due to digitalization (table 2).

Table 2 – Sources of GDP growth due to digitalization

№	Sources of GDP growth	Characteristic
1	Optimization of production and logistics operations	<ul style="list-style-type: none"> • Real-time monitoring of production lines • Optimization of logistics routes and determination of the order of priority directions
2	Improving the efficiency of the labor market	<ul style="list-style-type: none"> • Efficient and fast job search and filling vacancies • Remote work capabilities • New professions and jobs
3	Improving equipment performance	<ul style="list-style-type: none"> • Reduction of equipment downtime and repair costs • Increased equipment utilization
4	Improving the efficiency of R&D and product development	<ul style="list-style-type: none"> • Rapid prototyping and quality control • Analysis of large amounts of data in the development and improvement of products
5	Reduction of resource consumption and production losses	<ul style="list-style-type: none"> • Reduction of electricity and fuel consumption • Reduction of production losses of raw materials
Note – Compiled by the author according to sources [10, 15]		

Consistent policy of action will allow timely use of emerging opportunities while preserving digital and real sovereignty. There are shifts both in the worldview and in the ethics of society. However, the end result of these changes is not predetermined. It depends on the preparedness of society and the state, as digitalization creates opportunities that can bring with them both new benefits and unexpected threats.

Let's analyze the types of information and analytical tools as a percentage in the whole country (using the example of the Republic of Latvia):

- standard office application tools (MS Excel or similar) – 79.9 %;
- tools based on industrial analytical platforms of foreign manufacturers – 18.5 %;
- tools based on industrial analytical platforms of domestic manufacturers – 14.9 %;
- original tools of own (custom) development – 20.7 %;
- generation of reports – 85.7 %;
- analytical monitoring – 79.6 %;
- planning – 67.3 %;
- forecasting – 62.9 %;
- simulation of situations – 11.5 %.

The above leads us to the fact that the information and analytical tools used in the authorities require a transition to a new technological level, which is laid down in the change in the development of the economic system, has already been defined at the legislative level and consists in the transformation of the economy with the transition to ecosystems. In our opinion, for the successful implementation of digital transformations, which are based on technology that gives a huge competitive advantage, it is possible to achieve the necessary results with correctly formulated requirements for the system, technical solutions, experience and innovative breakthrough ideas in teams. Let's try to formulate seven components of the success of digital transformation:

- 1) ensuring project management, involving professionals and stakeholders;
- 2) development of project implementation stages;
- 3) demonstration, discussion in the team of achievements that lay the foundation for its success;
- 4) development of a flexible plan with a reserve of maneuverability and movement in several directions;
- 5) formation and launch of the production system;
- 6) motivating the team to learn and apply new technologies;
- 7) determination of qualities and consistency in management, organizational changes, preparation of the system for the user, involvement of stakeholders in the work and identification of innovators of the truth.

The system of digital transformations will only become successful when it is mastered by the staff. These seven components of success can be tools that allow you to train staff in the process of creating and implementing digital transformations.

The main reserve for GDP growth is the digital transformation of the economy, and this will happen as a result of an increase in human innovation resources. In 2017, digital transformation entered a crucial phase, and digital transformation has become one of the main factors of global economic growth. In China, by 2025, Internet technologies can provide up to 22 % of GDP growth.

In the United States, the expected increase in value created by digital technologies by 2025 may amount to \$ 1.6–2.2 trillion.

Forecasts are based not only on the automation of existing processes, but also on the introduction of fundamentally new business models and technologies: digital ecosystem platforms, in-depth big data analytics, 3D printing, robotics, the Internet of Things. According to the McKinsey Global Institute, the Internet of Things alone will bring \$4 to \$11 trillion annually to the global economy by 2025 [16].

It should be noted that digital transformations in the economy will be implemented using roboadvisers, cyborgs, robots (hereinafter VS). In the USA, the artificial intelligence of roboadvisers is used in asset management (figure 2).

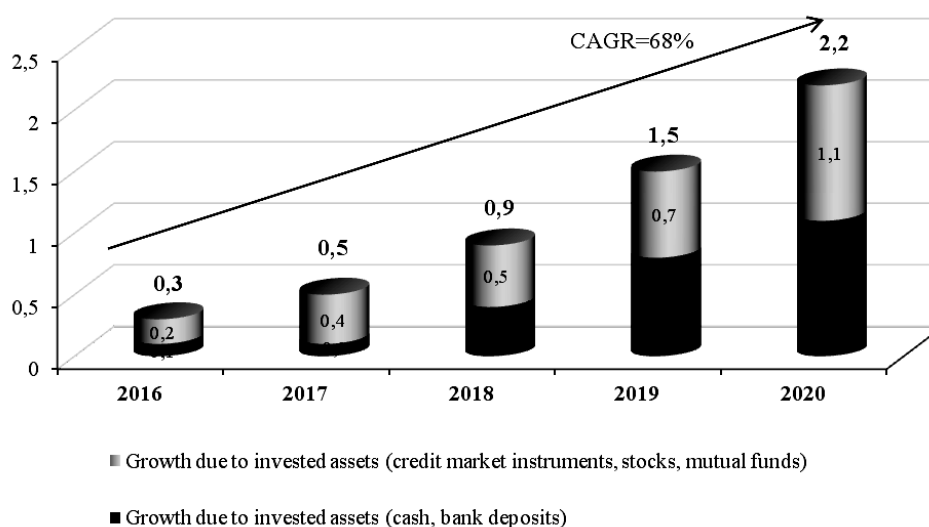


Figure 2 – Forecast of assets managed by roboadvisers in the USA, trillion dollars [16]

The use of robots in industrial production began by historical standards not so long ago – a little more than half a century ago. In these conditions, there is little production that can be imagined without automatic lines, steel manipulators and sharp-eyed glass pupils of robots. These iron “VS guys” are firmly embedded in most production processes.

Microservices architecture can play a crucial role in digital transformation, especially in organizations upgrading legacy applications and code bases. Microservices make both legacy and new applications lighter, more scalable, and easier to manage. Digital transformation means a complete restructuring of the organization in order to use new technology. Microservices help in this by expanding their capabilities. When determining the vector of technological processes and the correlation of macroeconomic theory in the evolutionary sense, economic development goes beyond the known principles, therefore a fundamental study of this phenomenon is required. To develop practical solutions, it is necessary to form a common understanding between institutional, legislative and industrial relations, applying theoretical and methodological foundations for the formation of an effective economic system.

Conclusion

The analysis of technological progress indicates that the introduction of new technologies will shift the paradigm of today's perception of the world in all layers of the organization of society – from philosophical to industrial. The accumulated amount of knowledge already reflects the following phenomena.

Technical automation of the concept of “trust” is primarily the automation of the executive power of the state. Deeper automation of this concept allows you to separate the control function and the control function. At the same time, the control function is fully automated, and the control function (including the legislative part) is amenable to technical modeling.

Contract and money are one. The system and society built on this principle allow the use of contractual relations as programmable money. The concept of programmable money opens up the potential of the greatest social network of all time. The key phrase becomes “social network”, which is based on socio-economic communication.

Thus, humanity is on the threshold of another ascending “technical network” – the Internet of Things, which is also based on socio-economic communication, expressed in communication schemes. The platform economy-ecosystem represents the next techno-economic round. At this stage, there are enormous savings through the reduction of transaction costs at all levels. The mechanisms of industrial relations are radically changing, switching to the mechanisms and laws of the economy of platforms that have all levels of production and all forms of enterprises united by one main goal and objectives.

An ecosystem is a new form of economic and social organization. “B-to-B” and “B-to-C” models are generalized into “E-to-E-model” (everyone to everyone). The ecosystem is moving away from the economic model of surplus value and moving to a new cost model for managing roboadvisers with production participation. At this level, the automation of the concept of “trust” is manifested in the phenomenon of inversion of management.

THE LIST OF SOURCES

- 1 Борщ Л.М. Эволюционные процессы социально-экономического развития в цифровых технологиях // Научный вестник: финансы, банки, инвестиции. – 2017. – № 4(41). – С. 98–107.
- 2 Шумпетер Й. Теория экономического развития. Капитализм, социализм и демократия. – М.: ЭКСМО, 2007. – 863 с.
- 3 Буркальцева Д.Д. Концептуальная модель рационального взаимодействия субъектов хозяйствования с учетом влияния институциональных факторов в современных условиях // Гуманитарные, социально-экономические и общественные науки. – 2017. – № 3. – С. 179–187.
- 4 Сухарев О.С., Попов Е.В. Движение к цифровой экономике: влияние технологических факторов // Экономика. Налоги. Право. – 2018. – Т. 11, № 1. – С. 26–35.
- 5 Силин Я.П., Анимица Е.Г. Российская модель новой индустриализации: к постановке проблемы // Известия Уральского государственного экономического университета. – 2017. – № 5(73). – С. 44–53.

- 6 Сухарев О.С. Технологическое развитие экономики: «созидательное разрушение» и комбинаторный эффект // Экономические стратегии. – 2018. – Т. 20, № 1(151). – С. 68–81.
- 7 Татаркин А.И. Политическая экономия как научная основа экономической политики: экскурс по работам академика Л. И. Абалкина // Журнал экономической теории. – 2015. – № 3. – С. 7–27.
- 8 Асаул А.Н. Управление организационными нововведениями: учебник и практикум для бакалавриата и магистратуры / А.Н. Асаул, М.А. Асаул, И.Г. Мещеряков, И.Р. Шегельман. – Москва: Юрайт, 2017. – 287 с.
- 9 Костень Д. Биткоин как новая форма товарно-денежных отношений. Блокчейн как новая форма инфраструктуры. Платформа как первая форма управления / Проблемы формирования правового социального государства в современной России: материалы XII Всероссийской научно-практической конференции (27 октября 2016 года). – Новосибирск: Новосибирский государственный аграрный университет, 2016. – С. 46–52.
- 10 Костин К.Б. Роль цифровых технологий в продвижении товаров и услуг на глобальных рынках // Российское предпринимательство. – 2017. – Т. 18, № 17. – С. 2451–2460.
- 11 Абрамов А. Российский финансовый рынок: факторы развития и барьеры роста / А. Абрамов, А. Д. Радыгин. – Москва: Изд-во Ин-та Гайдара, 2017. – 203 с.
- 12 Хейфец Б.А. Новые экономические мегапартнерства и глобальная экономика // Международная жизнь. – 2016. – № 3. – С. 127–146.
- 13 Базилевич В.Д., Ильин В.В. Философия экономики. История. – Москва: Рыбари, 2011. – 816 с.
- 14 Бондаренко Ю.Г. Учение ПИ, или «Золотое отношение» природного интеллекта: Куда=Как²/Откуда. Вологда: Вологодская ГМХА, 2017. – 216 с.
- 15 Piketty T. Capital in the Twenty-First Century. – London: The Belknap Press of Harvard University Press, 2014. – 452 с.
- 16 Manyika J. The Internet of Things: Mapping the Value Beyond the Hype / J. Manyika, M. Chui, P. Bisson. – McKinsey Global Institute. McKinsey & Company, 2015 [Electronic resource]. – Available at // <https://apo.org.au/node/55490>.

REFERENCES

- 1 Borsch, L.M. (2017). Jevoljucionnye processy social'no-jekonomicheskogo razvitija v cifrovyyh tehnologijah [Evolutionary processes of socio-economic development in digital technologies]. Nauchnyj vestnik: finansy, banki, investicii - Scientific Bulletin: finance, banks, investments, 4(41), 98-107 [in Russian].
- 2 Schumpeter, J. (2007). Teorija jekonomicheskogo razvitija. Kapitalizm, socializm i demokratija [Theory of economic development. Capitalism, socialism and democracy]. Moscow: EKSMO, 2007 [in Russian].
- 3 Burkaltseva, D.D. (2017). Konceptual'naja model' racional'nogo vzaimodejstvija sub#ektov hozjajstvovaniya s uchetom vlijaniya institucional'nyh faktorov v sovremennyh uslovijah [Conceptual model of rational interaction of economic entities taking into account the influence of institutional factors in modern conditions]. Gumanitarnye, social'no-jekonomicheskie i obshhestvennye nauki – Humanities, socio-economic and social sciences, 3, 179-187 [in Russian].
- 4 Sukharev, O.S., Popov, E.V. (2018). Dvizhenie k cifrovoj jekonomike: vlijanie tehnologicheskikh faktorov [Movement to the digital economy: the influence of technological factors]. Jekonomika. Nalogi. Pravo – Economy. Taxes. Right, 1, 26-35 [in Russian].
- 5 Silin, Ya. P., Animitsa, E.G. (2017). Rossijskaja model' novoj industrializacii: k postanovke problemy [The Russian model of new industrialization: to the formulation of the problem]. Izvestija Ural'skogo gosudarstvennogo jekonomicheskogo universiteta – Izvestiya Ural State University of Economics, 5(73), 44-53 [in Russian].
- 6 Sukharev, O.S. (2018). Tehnologicheskoe razvitie jekonomiki: «sozidatel'noe razrushenie» i kombinatornyj jeffekt [Technological development of the economy: “creative destruction@ and combinatorial effect]. Jekonomicheskie strategii – Economic strategies, 1(151), 68-81 [in Russian].
- 7 Tatarin, A.I. (2015). Politicheskaja jekonomija kak nauchnaja osnova jekonomicheskoy politiki: jekskurs po rabotam akademika L. I. Abalkina [Political economy as the scientific basis of economic

- policy: an excursion on the works of academician L. I. Abalkin]. Zhurnal jekonomicheskoy teorii - Journal of Economic Theory, 3, 7-27 [in Russian].
- 8 Asaul, A.N., Asaul, M.A., Meshcheryakov, I.G., Shegelman, I.R. (2017). Upravlenie organizacionnymi novovvedenijami: uchebnik i praktikum dlja bakalavriata i magistratury [Management of organizational innovations: textbook and workshop for bachelor's and master's degree]. Moscow: Yurayt, 2017 [in Russian].
- 9 Kosten, D. (2016). Bitkoin kak novaja forma tovarno-denezhnyh otnoshenij. Blokchejn kak novaja forma infrastruktury. Platforma kak pervaja forma upravlenija [Bitcoin as a new form of commodity-money relations. Blockchain as a new form of infrastructure. Platform as the first form of governance]. Proceedings from The Problems of formation of a legal social state in modern Russia '16: XII Vserossijskoj nauchno-prakticheskoy konferencii (27 oktjabrja 2016 goda) - XII All-Russian Scientific and Practical Conference. (pp. 46-52). Novosibirsk: Novosibirsk State Agrarian University, 2016 [in Russian].
- 10 Kostin, K.B. (2017). Rol' cifrovyyh tehnologij v prodvizhenii tovarov i uslug na global'nyh rynkah [The role of digital technologies in the promotion of goods and services on global markets]. Rossijskoe predprinimatel'stvo - Russian Entrepreneurship, 17, 2451-2460 [in Russian].
- 11 Abramov, A., Radygin D. (2017). Rossijskij finansovyj rynek: faktory razvitiya i bar'ery rosta [The Russian financial market: factors of development and barriers to growth]. Moscow: Publishing House of Gaidar Institute, 2017 [in Russian].
- 12 Heifets, B.A. (2016). Novye jekonomicheskie megapartnerstva i global'naja jekonomika [New economic megapartnerships and the global economy]. Mezhdunarodnaja zhizn' - International life, 3, 127-146 [in Russian].
- 13 Bazilevich, V.D., Ilyin, V.V. (2011). Filosofija jekonomiki. Istorija [Philosophy of Economics]. Moscow: Rybary, 2011 [in Russian].
- 14 Bondarenko, Yu. G. (2017). Uchenie PI, ili «Zolotoe otnoshenie» prirodnogo intellekta: Kuda=Kak²/Otkuda [The doctrine of PI, or the “Golden ratio” of natural intelligence: Where = How²/Where from]. Vologda: Vologda State Agricultural Academy, 2017 [in Russian].
- 15 Piketty, T. (2014). Capital in the twenty-first century. London: The Belknap Press of Harvard University Press, 2014.
- 16 Manika, J., Chui M., Bisson P. (2015). Internet of Things: Displaying Value beyond Hype. McKinsey Global Institute. McKinsey & Company, 2015. Retrieved from: <https://apo.org.au/node/55490>.

С.А. Бука

Балтық Халықаралық Академиясы, Латвия

Әлемдік экономиканы цифрлық трансформациялаудың жаңа тенденциялары

Мағыналар теориясының пайда болуы және экономикалық даму моделінің өзгеруі әлеуметтік өндірісті, әлеуметтік-экономикалық қатынастарды ұйымдастырудың жаңа архитектуралық формаларының әдіснамалық негізін құрайды. Санаттарды, процестер мен құбылыстарды құру және өзара әрекеттесу эконожүйелерді құру арқылы экономиканы өзгертеді. Практикалық шешімдегі экономиканы жаңғырту процестері институционалдық, заңнамалық және өндірістік қатынастар арасындағы жалпы өзара түсіністікті, ұйымдық қайта құрулардың мәнін, технологиялық үрдістердің әлеуметтік-экономикалық байланыстардың жаңа кезеңіне тәуелсіз көшуін аспаптық қамтамасыз ету жөніндегі базалық ережелерді тұжырымдауды ашуы тиіс. Үрдістер стандарттаудың жаңа сипаттамаларына, жүйенің жұмыс істеу әдіснамасына, техникалық шарттарға, нормаларға, ережелерге, нұсқаулықтар мен ережелерге негізделуі керек, бұл институционалдық өзгерістер енгізуді көздейді.

Мақсаты – әлемдік экономиканың цифрлық трансформациясының жаңа тенденцияларын зерттеу, сондай-ақ цифрлық экономиканың технологиялық процестері векторының міндеттері мен көзқарастары жалпы әлемдік тенденциялар арнасына еніп, экономикалық дамудың

Теориялық және әдіснамалық негіз отандық және шетелдік зерттеушілердің еңбектерінде ұсынылған тұжырымдамалар, гипотезалар мен теориялар болды. Әдістеме салыстырмалы, факторлық, субъект-объект, құрылымдық-функционалдық, статистикалық, корреляциялық талдау және экстраполяция әдістері қолданылған жүйелік тәсілге негізделген.

Осы мәселе бойынша шетелдік экономистердің теориялық тәсілдеріне аналитикалық шолу жасалды, бұл авторға әлеуметтік-экономикалық дамуды жоспарлаудың Мемлекеттік стратегиясы шеңберіндегі бағыттарды анықтаудың теориялық, әдіснамалық және қолданбалы негіздерін анықтауға мүмкіндік берді. Экономикалық даму моделінің өзгеру жағдайларына, экономиканы жаңғыртуға, болашақта экожүйелер деп аталатын бірінші және екінші буын платформаларына көшуге қатысты ғылыми пікірталас бағаланады. Алға қойылған цифрлық технологияларды жақтаушылар мен олардың қарсыластарының теориялық дәлелдерінің түбегейлі айырмашылықтары анықталды. Мемлекеттік саясат әдістерін түзету және технологиялық үрдістердің векторын таңдау мақсатында қозғаушы факторлардың өзгеруіне әсер етуді дәлелдеу ұстанымдары талданады. Макроэкономикалық теорияның цифрлық трансформацияның белгілі экономикалық ой принциптерінен тыс эволюциялық мағынада корреляциясы қарастырылды.

Түйінді сөздер: технологиялық үрдіс, ұтымдылық, иррационалдылық, «алтын қатынас», цифрлық экономика, корреляция коэффициенті.

С.А. Бука

Балтийская Международная Академия, Латвия

Новые тенденции цифровой трансформации мировой экономики

Процессы модернизации экономики в практическом решении должны раскрывать общее взаимопонимание между институциональными, законодательными и производственными отношениями, сущность организационных преобразований, формулировку базовых положений по инструментальному обеспечению независимого перехода технологических процессов на новый виток социально-экономических связей. В основу процессов должны быть положены новые характеристики стандартизации, методологии функционирования системы, технических условий, норм, правил, инструкций и положений, что предусматривает внесение институциональных изменений.

Цель статьи – исследовать новые тенденции цифровой трансформации мировой экономики, а также показать, что задачи и установки вектора технологических процессов цифровой экономики выходят далеко за пределы известных принципов экономического развития, вливаясь в русло общемировых тенденций.

Теоретической и методологической основой исследования послужили концепции, гипотезы и теории, представленные в работах отечественных и зарубежных учёных и экспертов. Методология основана на системном подходе, в рамках которого были применены методы сравнительного, факторного, субъектно-объектного, структурно-функционального, статистического, корреляционного анализа и экстраполяции. В ходе исследования проведен аналитический обзор теоретических подходов зарубежных экономистов по данной проблеме, который позволил автору выявить теоретико-методологические и прикладные основы для определения направлений в рамках государственной стратегии планирования социально-экономического развития. Оценивается научная дискуссия относительно условий смены модели экономического развития, модернизации экономики с переходом на платформы первого и второго поколения, именуемые в дальнейшем экосистемами. Определены принципиальные отличия теоретической аргументации сторонников продвигаемых цифровых технологий и их оппонентов. Проанализированы позиции аргументации воздействия на изменение движущих факторов с целью корректировки методов государственной политики и выбора вектора технологических процессов. Рассмотрен вопрос о корреляции макроэкономической теории в эволюционном смысле, выходящей за пределы известных принципов экономической мысли цифровой трансформации.

Ключевые слова: технологический процесс, рациональность, иррациональность, «золотое отношение», цифровая экономика, коэффициент корреляции.

Date of receipt of the manuscript to the editor: 2023/02/28