

Review Paper

Public Management and Legal Support of Economic Modernization of Society

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ABSTRACT

The article considers the key features of economic modernization of society in the Industry 4.0 era, as well as legal support of this modernization and appropriate implications for public management. Theoretical aspects of modernization and regional peculiarities are covered. It is shown that the vectors of public management and legal support of economic modernization of society should be multifactorial and have sufficient flexibility for quick direction modifications if necessary. The emergence of convergence of governmental and non-governmental "legal systems", derived from digital platforms is noted, and it is suggested that for enabling effective and economic security-based legal support of society' economic modernization, the law must today "learn", developing within the digital environment and digital society.

HIGHLIGHTS

- ① The article is devoted to the investigation of the models of economic modernization of societies in different regions of the world in the era of Industry 4.0, and revealing conditions for the formation of effective legal support and public administration frameworks for this modernization.
- ② The obtained results demonstrated extreme complexity of socio-economic modernization environment today and the necessity of multifactoriality of vectors of public management and legal support of economic modernization of society
- ③ The practical significance of the research lies in outlining implications and challenges of economic modernization of society in the Industry 4.0 era regarding shaping vectors of public administration and legal support of economy' and society' modifications and further development.

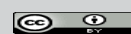
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One of the problems that do not lose its research relevance and value in various branches of scientific knowledge is the processes and trends in the economic development of society, the problems of ensuring the proper state of the economy, increasing the efficiency of state influence on it, and improving the mechanism of its social regulation. The above issues are also priorities for legal science, since the

well-being of the entire population of any country and each person individually ultimately depends on their study and solution.

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The state, public administration can play the role of a catalyst for innovation processes, supporting research and innovation in the new organizational network paradigm, the role of an arbitrator of diverging interests and perspectives, the role of an organizer of a dialogue between participants in future developments and an initiator of new programs and tasks.

The economic modernization of society and the corresponding regulatory policy of public authorities represent the systematic development and application of nationwide means and institutions in order to form methods for the use by the state of its regulatory powers. This includes integrating competition policy and open market initiatives into regulatory policy and changing the culture of regulatory bodies so that they are systematically flexible and result-oriented. In turn, all regulatory policies are based on a mixture of economic, legal, and public principles.

Some examples may illustrate the diversity of political approaches to situations where specific political difficulties are encountered. In Japan and Korea, where there was widespread support for the view that the main regulatory problem was over-regulation and state intervention in the economy, the main focus was made on reducing the economic role of the state through deregulation. In the United States, where there were relatively few barriers to entry in most sectors of the economy, but with a costly federal regulatory framework for social policy, the focus was made on improving the quality of regulation through a rigorous application of cost-benefit principles. In the Netherlands, which has reoriented the corporatist state towards a more market-based relationship, the regulatory focus has been on government consultation and administrative burden reduction. In Mexico, where the process of integrating regulatory structures into NAFTA (North American Free Trade Agreement) has taken place, priority has been given to eliminating inconsistent and duplicative regulation and increasing the credibility of the law and the ability to enforce the law.

Regulatory reform policy serves several important purposes in applying, sustaining, and deepening regulatory reforms. It reflects the government's commitment to reform its entire regulatory environment (Klymenko *et al.* 2016). This enhances

the effectiveness of coordination and cooperation measures among related structural reforms such as competition policy, corporate governance and sectoral reforms.

Nevertheless, the solution to the problem of modernizing the economy is impossible without the use of legal instruments. At the same time, it is fair to note that the ratio of law and economics is changing. New approaches to realizing the regulatory potential of law have emerged (Alpidovskaya *et al.* 2021). First, the boundaries of legal regulation have changed: the scope of self-regulation has expanded; law provides for a greater variability of behavior, a variety of organizational and legal forms of economic entities. Secondly, the system of methods of legal regulation continues to be enriched, in particular, various methods of legal stimulation are being used increasingly more. Thirdly, the transition to a purposeful law-making strategy is becoming more noticeable, characterized by the adoption of policy documents for the short, medium, and long term prospect.

Ensuring the implementation of the goals set in the economy is achievable under the following conditions: high-quality legislation, full-fledged law enforcement, and a high level of legal awareness. Under these conditions, the role of competent public administration is increasingly growing and becoming more complex.

However, at the same time, the flexibility of legal regulation makes it possible to adapt legal regulators to solve various social problems in the framework of the economic modernization of society. Current national projects across counties of the world can be conditionally divided into three groups – “human capital”, “comfortable living environment”, and “economic growth” (Inglehart, 2020). Within each group, there are types of programs, each of which serves as the basis for national (or, in the case of a federal state structure, federal projects). Questions arise: how to correlate industry legislation with them? Is it necessary to single out “basic” laws for the main purposes, how to combine different branches of legislation, how will the “head” body within the framework of projects apply the legal norms of different branches?

The task is to form a coherent, unified legal policy, including in the sphere of interaction between the

state and business, which does not exclude the development of separate concepts, legal policies in relation to certain branches of law and sectors (spheres) of the economy (Novak et al., 2022). However, with the sectoral principle of formation and implementation of legal policy, there is no coverage of the entire spectrum of relations in a particular segment of the economy or society. At the same time, legal policy should be aimed at solving specific social and economic problems and be comprehensive. In this regard, there is a problem of improving the legal foundations of the new digitalized market economy and the economic modernization of society.

LITERATURE REVIEW

Previously, modernization theory was usually used to explain the processes that took place in developing countries. Now it is also used to comprehend events in developed countries. Modernization theory arose in the USA (S. Huntington, D. Apter, and others) in the middle of the 20th century as an alternative to the communist doctrine for a large number of independent states in Asia, Africa, and Latin America that emerged as a result of the collapse of European colonial empires. It was created as an optimistic paradigm of historical development as opposed to the pessimistic concept of "decline" (O. Spengler, A. Toynbee, K. Jaspers, P. Sorokin, etc.) and was interpreted as a complex process of building an industrial society (W. Rostow, W. Moore, S. Eisenstadt, K. Galbraith). Until the end of the 20th century, modernization was understood as the efforts of developing countries (and since 1990, transitional (transitive) countries) aimed at catching up with developed countries that compete with them within the global society (Arivazhagan *et al.* 2023; Scott, 2000). The modernization theory described attempts of the modern world' moving from the periphery to the center and represented the socio-historical process of catching up development (countries must accelerate the path of industrial or post-industrial development) (Bigliardi *et al.* 2020; Edwards *et al.* 2016). Such modernization was sometimes called 'accelerated westernization', although researchers emphasized the impossibility of mechanically reproducing the experience of developed countries. In all theories of modernization, a common view

was that of a modern man, who accepts Western values (democracy) and chooses a rational model of homo economicus behavior (achieves success (income) and recognizes the right of others to act in a similar way). The success of the "new industrialized countries" caused a new paradigm – "modernization without Westernization" (S. Huntington, R. Inglehart, S. Eisenstadt, E. Giddens, W. Zapf). The problems of a number of transitional countries on the market path of development aroused new interest in modernization without westernization – corresponding theories were put forward: "neo-modernization" (E. Tirikyan), "post-modernization" (J. Alexander), "ecological modernization" (E. Giddens, W. Beck), "modernization as a transition to a knowledge society" (S. Black).

At the initial stage, in transition countries, the paradigm of modernization in connection with the formation of market institutions and market behavior of individuals was rarely used, the terms "reforms" and "transitional (transitive) economy" were applied more often (Byrkovych *et al.* 2023). However, it quickly became clear that market institutions alone did not ensure successful economic development, and gradually the term "transitional economy" was replaced by the terms "modernization", "structural adjustment", and "competitiveness". At the same time, modernization began to be understood not as an imitation of the West (Westernization as a Washington project), but as a national project (Frieden, 2020). The global financial crisis and the phenomenal success of the Chinese development model gave rise to research both on national models of modernization (controlled change of technological patterns, liberal conservative modernization, overtaking modernization, advanced modernization model), and on the modernization of capitalism as a whole (the theory of the "new capitalist order" by J. Stiglitz and conservative strategies of the changing world by M. Thatcher).

Ultimately, the studies converged on one point it is necessary to build a new economic order both in the global economy (this is being done by the G20 group and sociologists who proclaimed the slogan of a creative sustainable society) and in the national (including those that have recently been the benchmark: the United States (statement of B Obama on the need to modernize the US economy), the EU

(the creation of a financial stabilization fund)). Let us emphasize that in Modernization II sociological theories were replaced by economic ones. The accumulated global economic disproportions demanded an immediate improvement in both the world and national economies (this was the essence of Modernization II). Some experts and organizations (the Institute for the Post-Crisis World, I. Wallerstein, the collective forecasts of the CIA) generally believe that the world system has reached an impasse and may not avoid a global catastrophe. Others believe that Modernization II is slowly but surely leading out of the post-crisis recession and building the knowledge economy of the 21st century.

Modernization II is, in essence, the problems of building a new economy for the 21st century. This is understood in the literature as an economy in which the following six modern processes are balanced: globalization, informatization (information society), intellectualization (knowledge economy), networking (network economy), post-industrialization (the service sector provides more than 50% of GDP), self-maintenance (sustainable development) (Bogoviz *et al.* 2019; Khan *et al.* 2021).

In order for knowledge to be used in the economy, it must be turned into innovation. The knowledge economy is an economy that ensures the continuous process of knowledge production and its transformation into new technologies, goods, and services (Panasiuk *et al.* 2021). The resulting socio-economic system turns out to be the most dynamic of all known in history, which increases the separation of innovative countries from the rest of the world and makes it transition to the category of innovative ones extremely difficult.

The essence of modernization II is the transition from the current state of the country to the one it should be in today's dynamic world (Khomiuk *et al.* 2020). To do this, it is needed to correctly predict the dynamics of the most important processes taking place in the world economy, their impact on the national economy and be able to create new competitive advantages in a word, meet modern requirements (the meaning of the word 'modernization').

In this context, it depends on public administration what position the country will occupy in the

global economy and whether it will be able to take advantage of the opportunities of international cooperation and specialization to strengthen economic potential.

MATERIALS AND METHODS

The analysis carried out is based on the concepts of modernization, globalization, formation and functioning of the capitalist world-system. Theoretical concepts of world-system analysis have become especially significant for the study. The methodological basis of the research is a historical and systematic approach to the analysis of the object of study, the modernization processes, including in the country specifics and in the context of Industry 4.0. Both general scientific methods of research (logical analysis and synthesis, induction and deduction) and private methods of analysis are used structural-functional, historical, causal, structural, factorial, and comparative. The combined use of these methods made it possible to provide an integrated approach to the study of the problem under investigation.

RESULTS

Within the framework of Western theories of economic development (developments economics), modernization is characterized as the conditionality of the industrialization of developing countries by the transition to democratic forms of government. The political modernization of the country on the basis of democratic values was seen as a necessary condition for the integration of the country into the international community of industrial democracies. Currently, political modernization is defined as the formation, development, and dissemination of political institutions that are most capable of improving the positioning of the state in international economic and political relations (Manurung, 2020). Political and economic modernization are in a certain correspondence with each other, but their ratio is very individual and reflects the specific features of the countries implementing it. As a rule, there is a time lag between political and economic modernization, sometimes quite significant. In general, modernization processes cover all spheres of public life, as they are dictated by competition, which involves all agents of society that perform socially significant functions.

In terms of content, the category “modernization” is quite close to the category “economic development”, reflecting the totality of interrelated processes of capital accumulation (mobilization of resources), development of production and increase in labor productivity (Troschinsky *et al.* 2020). However, while economic development characterizes evolutionary trends, modernization is associated with a radical renewal of the economic, technical and technological, political, socio-cultural spheres of society, compensation for the negative effects of catching up development and an increase in the competitiveness of the national economy (Novak-Kalyayeva *et al.* 2018). As scientists note, “understanding the causes of the emergence and ways of expanding the main problems associated with the transformation of an industrial society into a post-industrial one is a necessary condition for the designing by any state, civilization, humanity as a whole of a reasonable strategy for its development, while an innovative strategy is the basis for the transformation of civilization in the 21st century” (Ng *et al.* 2022).

The first studies on the problems of modernization were based on materials from the countries of Southern and Eastern Europe (mid-20th century), which at that time were considered as states with modernization potential, which, in our opinion, reflects the degree of readiness of national economies for large-scale transformations, in a broad sense (Kulikov *et al.* 2022). In a narrow sense, this is the presence of disproportions in economic development, the emergence of special forms of interaction between economic agents that are in conflict with existing ones. Initially, modernization studies contained ‘recipes’ for rapid post-war recovery: the Marshall Plan in 1947-1951 (Hong, 2017). In the 1950s and 1960s, research was carried out in two directions: on the one hand, a theory of development was shaped from the point of view of changing the phases and stages of development of a particular society, on the other hand, the mechanisms and methods of spreading Western experience to countries and regions, not yet entered the phase of the industrial economy, were studied. Thus, since the middle of the 20th century, the formation of the “core” of the modernization paradigm has been taking place. In particular, the modernization paradigm represents the formation

of a special type of behavior of economic entities aimed at qualitative progressive changes in existing institutional forms, updating and improving the technological foundations of society.

In a knowledge economy with high mobility of other factors of production, namely the quality of human capital and the ability to use knowledge determine the prospects for the country’s economic growth and the divide between the developed countries that are leaving behind and the rest of the world. The first (important and more or less traditional) function of the state in the knowledge economy is to manage the development of human capital. According to G. Becker, human capital is equal to the amount of investment in education. However, the role of the state is not limited to determining public spending on education and stimulating private investment in education (Becker as cited in Chauhan *et al.* 2021). The state is developing a mechanism for the effective use of these investments. The second (important and also more or less traditional) function of the state in the knowledge economy is to stimulate the creation of knowledge. The state is actively involved in the production of knowledge, firstly, by funding R&D, or at least fundamental science, and secondly, by stimulating the real sector, it also finances R&D.

The third function of the state in the knowledge economy is to regulate the accumulation and dissemination of knowledge, most of which (fundamental knowledge) can be distributed as public goods so that everyone can use them. However, in the United States, the rights to the results of publicly funded intellectual activity, under the Bayh-Dole Act (1980), were transferred to developer universities. Even if a discovery is protected by a patent only for a limited period, access to its technical parameters is closed. The idea of an invention becomes known as soon as a new product (service) enters the market. Therefore, an important function of the state is to provide the infrastructure (Internet, journals, travel to conferences) for its scientists to access global knowledge networks, and their participation in partner scientific networks (Byrkovych *et al.* 2023; Greve, 2022).

On the other hand, the high mobility of knowledge requires the state to make significant efforts to protect intellectual capital using the concept of

rights. Improving the efficiency of knowledge generation and sharing is an important factor not only in the context of innovative work, but also in the process of learning, as well as the development of more relevant and effective policies and the delivery of public services by the public sector. The introduction of effective knowledge management structures serves as an incentive to expand the coverage and participation of the population in the knowledge economy, since along with an abundance of information, there is a lack of fruitful use and application of knowledge.

The fourth (most important) function of the state in the knowledge economy is to stimulate the use of knowledge, turning it into an economic resource, i.e., creating a competitive environment from venture funds and private small innovative business firms (the country's innovation system), stimulating the transfer of technologies.

The modernization of economic policy and the achievement of sustainable economic growth are possible with the introduction of regulatory and legal support of an innovative nature (providing a qualitative increase in the efficiency of management processes and creating institutional and legislative conditions for the introduction of innovations in economic policy), taking into account the current development potential of the country. Economic modernization, however, has quite pronounced country and regional specifics.

In the United States, the problem of economic security was first raised in the 1930s. Its relevance was due to the global economic crisis and the need to develop rapid response measures to the negative factors influencing the world economy on the national one. Therefore, by decision of President F. Roosevelt on June 29, 1934, a federal committee on economic security was formed. The current American doctrine in the field of ensuring economic security differs from the European one in its principles, goals, objectives, forms and methods of its implementation.

The legal act on the basis of which the economic security of the United States is based, is National Security Strategy of Engagement and Enlargement. In view of the fact that the United States has economic interests expressed in the legislation, any impact of the world economy, political action of

an individual state can be defined as "opposition" to US interests. This is the basis for the use of the relevant state authorities.

In US law, there is no separate legal act regulating the provision of national economic security. But the US National Security Strategy, being a conceptual document that defines the goals, objectives, and activities of American government agencies, pays special attention to the economic aspect of the problem.

The strategy consists of an introduction, a section devoted to ensuring the interests of the United States in the world, a section on complex regional problems, and conclusions. One of the key provisions of the Strategy, which determines the fundamental direction of the regulation of public relations, is the following norm: "We proceeded from the fact that the line between domestic and foreign policy is disappearing. We must revive the economy in order to support the armed forces, initiatives abroad and global influence. We should take an active part in international affairs to open up foreign markets and create jobs for Americans" (Ortt, Stolwijk, and Punter, 2020). This rule defines the national interests of the United States and indicates a number of ways to achieve them.

The US legislation pays sufficient attention to the mechanisms of state regulation of the economy. Such aspects of ensuring economic security as antimonopoly activities and protection of property are scientifically substantiated and normatively regulated. At the same time, the public sector of the economy is small compared to the private sector, there is relative freedom of movement of capital, there are no licensing systems, production quotas, and regulation of enterprises is carried out mainly by the normative method. Therefore, the US economy can be categorized as a mixed one, with a predominance of the liberal model, which leaves an imprint on the legal model for ensuring economic security.

The first US project created for the purpose of ensuring economic security was the National Security Memorandum of 1990. This document implies the preservation of the leading role of the United States in the technological fields and the economic position of the country on a global scale.

The United States was the first country to designate the key role of economic activity in matters of ensuring national security. This issue remains on the agenda today. The goals of ensuring the US economic security are interpreted as follows: support for the maximum competitiveness of US companies; reducing the value of public debt to other countries; increasing the importance of the US as a partner for other countries in international trade and other areas (Smits, 2017). In turn, the achievement of these goals is impossible without continuous economic modernization.

For less developed countries, economic modernization means overcoming their backwardness. In practice, this looks like an attempt to catch up with developed countries in terms of economic development. Hence, the existence of such a term as 'catching up development'. However, economic theory prefers to talk about modernization in order to emphasize that in the process of modernization, the country pursues not only an increase in GDP / GNI per capita, but also other indicators of the level of economic development. In addition, it is understood that economic modernization covers both backward and developed countries.

The first models of catch-up development arose long ago. In the second half of the 19th century, Germany and the United States, lagging behind Great Britain in terms of development, resorted to active protectionism to protect their young industry, raising import duties on finished products to 40%, and Japan began to actively use state regulation of the economy, state support for large national companies and an undervalued yen to encourage exports and deter imports (Inglehart, 2020). In the 20th century, the USSR, in order to accelerate industrialization, resorted to the expansion of the state sector to almost the entire economy, a sharp increase in government economic spending, and the state monopoly of foreign trade.

Since the middle of the 20th century, dozens of countries, mostly less developed, have already begun economic modernization. They used the experience of the mentioned countries, adapting it to their economic reality (Litvinova *et al.* 2020). Their modernization models were characterized by foreign trade protectionism and the promotion of import substitution, active state regulation of the entire economy, including large government spending and

the public sector, as well as support for national monopolies. The adhered to limited convertibility and even non-convertibility of the currency to prevent the export of national capital and, most importantly, for the administrative establishment of the exchange rate at an undervalued level.

This model of economic modernization (it can be called neo-Keynesian, although it also contained large elements of mercantilism) brought both successes and failures to less developed countries (Kopytko and Zaverukha, 2021). On the one hand, these countries were able to start industrializing their economies and increase their economic growth rates, on the other hand, many of the new industries protected by protectionism turned out to be poorly competitive, and strong state intervention gave rise to "government failures". From the point of view of institutional theory, the main failure was the insufficient growth of private property (it was "overwritten" by the state sector) and the freedom of economic agents (it was hindered by the closed economy, monopoly and state bureaucracy).

The incomplete economic modernization strengthened the modern sector, but did not eliminate the traditional one. The modern sector is represented by capitalist enterprises (domestic and foreign firms, farms), while the traditional sector is represented by pre-capitalist ones (handicrafts, communal and landowner farms). The coexistence in the economy of two large and different in nature sectors, each of which consists of smaller sectors (structures), is called multistructurality.

Due to its shortcomings and partly influenced by the Washington and post-Washington consensus, the neo-Keynesian model of economic modernization began to be replaced by the neo-liberal one. The level of protectionism began to decline, spurring competition from foreign competitors in previously closed and monopolized industries; the public sector began to be privatized, the currency became less and less free from restrictions on its convertibility. But this neo-liberal (more precisely, predominantly neo-liberal) model of economic modernization at the same time retained tangible elements of neo-Keynesianism and even mercantilism a higher level of import duties than in developed countries, significant restrictions on the functioning of foreign capital, incomplete currency convertibility.

The most successful of the modernization models was the Japanese one (in the period from the 1860s to the 1960s, Japan turned into a developed country) and the models of new industrialized Asian economies that copied it (during the modernization of the 1950s-1990s, they also became developed countries). This model owes its success to a successful combination of different theoretical approaches from the very beginning – the state actively regulated the economy, but not at the expense of large government spending and a large public sector, which contributed to the growth of private property, low taxes and significant freedom of economic agents (Ortiz, 2020; Maresova *et al.* 2018). Another reason for the success of the model is the all-round encouragement of exports, especially at the expense of an undervalued exchange rate, which led to a constant increase in the international competitiveness of the national economy. Finally, all this was accompanied by a great attention to the production and dissemination of knowledge. It should be noted that the East Asian model, in solving the problem of accumulation, relied on national capital, which it mobilized from the funds of the population, and not on foreign capital (with the exception of such small economies as Singapore and Hong Kong), and instead of importing capital, it most actively imported knowledge. Within the dichotomy neoliberal or neo-Keynesian this is predominantly a neo-liberal model of modernization, but again with strong elements of neo-Keynesianism.

The success of the described model led to the fact that other less developed countries, primarily new industrial ones, adopted it with their own modifications. This model allows China, India, Brazil, Turkey, Iran, Indonesia to become the new world economic centers.

Economic modernization is also taking place in developed countries. For them, it means, first of all, the solution of problems that are characteristic of the post-industrial stage of development these are the problems of human capital, innovation, financial stability, and international competitiveness.

In developed countries, the problem of human capital has its own aspects. First of all, this is the aging of the population, as a result of which the number of pensioners here is growing and government spending on them is growing accordingly, while

attempts to raise the retirement age are met with resistance from the population. The relative accessibility of post-secondary education also turns into a problem almost everyone who wants to get it has such an opportunity, but not everyone can do it according to their mental abilities and social background/circumstances, and as a result, the stratification between the educated and the less educated increases, with the former usually having high incomes, and the latter much less, as a result of which wealth stratification increasingly depends on the level of education received (more precisely, on the abilities that education develops).

The problem of innovation comes to the fore in developed countries not so much because of the difficulties in implementing innovations in them, but because at the current stage of development of these countries namely innovation is the main engine of their economic growth and, therefore, they are given special attention. Moreover, less developed countries, especially large ones, in anticipation of their future transition to a higher stage of development, are also paying increasingly more attention to innovation, although for them it is still mainly the import of knowledge, and not its production on the basis of their own R&D. Therefore, although developed countries are in the lead in the Global Innovation Index (the first five places are occupied by Switzerland, Sweden, Singapore, Finland, and Great Britain), some less developed countries are quite close to them (Malaysia occupies 32nd place, China 34th place, Chile 39th place) (Inglehart, 2020).

Classical examples of the wide and effective use of tools for restructuring the existing socio-economic system are the reforms in West Germany carried out by the Western occupation authorities and the Adenauer-Erhard government, the radical transformation of the economic and political system in Japan, Spain, Greece, the actual creation of the main elements of a regulated market economy by foreign and national government agencies in South Korea, Taiwan, Malaysia, some states of the Middle East and Latin America.

DISCUSSION

The economic modernization of market entities as a radical renewal of their material and organizational and economic structures on a modern basis involves

the restoration of the technical basis through the introduction of high technologies that determine structural shifts in the economy. The effective functioning of the market is possible only if an adequate market infrastructure, a competitive environment, appropriate institutional forms, and legislative support for economic modernization are created. First of all, it is about the formation of tax, financial, banking systems, administrative and legal structures adapted to the conditions of economic modernization at all levels of state and economic power.

Economic modernization also requires an appropriate quality of human capital, both in relation to the professional and qualification level of the population, and the improvement of its economic consciousness, which testify to the ability of 'homo informaticus' to master the modernization processes (Rozskazov *et al.* 2021). When drawing up a new strategy for economic development, it is necessary to remember that modernization is carried out in a particular country and involves fully taking into account national, historical traditions, the mentality of the population, its culture, identity and uniqueness, which should organically fit into modernization processes, increasing their internal potential.

Market relations are characterized by colossal creative power, they contain the principle of self-regulation. However, as the historical experience of individual countries and regions, as well as global world experience, show, these relations, if they are not controlled by the state will through legislation, are subject to self-deformations, known as "abuse in the market". These deformations have a negative impact not only on the economy, but also on the social sphere. Entire branches of law, for example, antitrust law, consumer protection law, are called upon to resist abuses in the market. National legislation creates special institutions of law, in particular, the institution of protecting the rights of the "weak side of the legal relationship", or the inadmissibility of abuse of law, and many others.

The economy of the state develops only if it is included in the world economy. In the 1970s, China, while significantly maintaining its political and ideological model, began to implement economic reforms, as well as the reform of the legal system, which led to an unprecedented influx of foreign

investment and economic growth of the country. This historical example clearly illustrates that the factors of economic development are not directly dependent on the compliance of the legal system of the state with certain models of law in states with a traditional market economy. Due to historical circumstances, within certain time frames, the legal system can retain fundamental features. However, further development of the country is possible only in the context of full-scale economic ties.

In addition, the modern world economy is built on the basis of international law. The main center that forms the rules of international trade is the World Trade Organization (WTO). The desire of states to participate in this organization serves as an incentive for the modernization of national legislation, bringing it into line with WTO standards.

At the same time, it would be wrong to assume that the development of international economic law is the way to establish a single, universal legal regulation in the economic sphere. States, reaching certain agreements that become the norms of international law, retain the features of national regulation of the economy. The importance of national regulation of economic relations remains in modern conditions, even in such a deeply integrated structure as the European Union. Accounting or attempts to take into account the experience of foreign legislation are typical for the law-making activities of many states. However, national legal traditions, and indeed the established national system of law as a whole, clearly indicate the limited possibilities for direct borrowing of foreign law institutions. It is necessary to emphasize the importance of a balanced approach in reforming national legislation in order to optimize the legal regulation of the economy. General references to "global experience" do not work well in relation to the legal sphere (Gutsu, Mkrtchyan, and Strielkina, 2021). The existing practice of the reception of foreign law shows that even with the textual reproduction of foreign legislation, its application in the recipient country differs significantly from the original.

Separately, let us emphasize that the cause of the conflict between the East and West of Europe is their position in relations with the United States. The foreign policy of the countries of the CEE region has a pronounced pro-American character. Often, their pro-American orientation in the international

arena runs counter to the general position of the EU on certain issues (European Economic and Social Committee, 2017). In addition, Euroskepticism towards the countries of Western Europe is expressed in their use of the Eastern European states as their Western European periphery. The accession of the CEE countries to the European Union was initially associated with the plans of Western Europe to peripheralize the Eastern European sector, that is, to use the former socialist economies of the CEE countries in own interests. Thus, the price of Europeanization for the CEE countries is the peripheralization of the economy of Eastern Europe and its transformation into an appendage of Western Europe (Ladonko *et al.* 2022).

Industry 4.0, which is the reality of today, is characterized by features of customization, interoperability, visualization, real-time availability, decentralization, and modularity. Currently, there is a development of industry, which is associated with the trends of the new economic era. This can be observed from a stage of product design to its delivery and service.

The following features of the development of Industry 4.0 can be distinguished in European countries (Hampton, 2015; Manurung, 2020):

1. European countries were the first to enter the "Industry 4.0 race". They concentrate the best practices of countries that are developing a strategy for the development of Industry 4.0;
2. European countries expect that the approach being developed will increase productivity and reduce costs;
3. Difficulties that will likely arise include: rising costs for retraining employees, the need for a large amount of investment, an increase in the level of social inequality and migration from developing countries to developed ones.

For U.S. businesses, the focus on Industry 4.0 means redesigning manufacturing processes and delivering higher quality products at lower cost. In the United States, the Industrial Internet Consortium was created. The idea of the Industrial Internet Consortium is to bring together enterprises and technologies necessary to accelerate the growth of industry, the dissemination and application of best practices. The main goals of the Consortium are the

following: stimulation of innovations; definition and development of structure; promotion of open forums for the transfer of knowledge, exchange of experience, practice; building confidence in new innovative security approaches (Pinzone *et al.* 2020). Platforms of Industry 4.0 and "Internet Consortium" cooperate with each other. Cooperation is organized on an ongoing basis.

The US industrial development strategy is more focused on increasing the level of productivity while reducing the level of production costs; within the main positive results expected by the United States from the implementation of the policy developed by them, the following can be mentioned: an increase in profits from the activities of companies, an increase in investment in digital technologies and a decrease in their cost; similarly to the countries of the European Union, the United States is forced to increase investments in raising the level of digital culture of the population (Maresova *et al.* 2018; Novikova *et al.* 2021).

Most Asian countries engaged in Industry 4.0 are characterized by compactness, lack of a wide variety of natural resources. The key achievements of these countries at the moment include: one of the most developed and well-formalized concept of "logistics 4.0" in the world; the most advanced and innovative technologies in the field of Internet platforms (Chauhan *et al.* 2021).

China, following the example of Germany, back in 2015 developed a plan for ten years ahead and called it "Made in China 2025". The main goal of this plan is to rebuild China from an industrial giant based on cheap labor to a global manufacturer of goods based on the latest innovative technologies. The plan also aims to increase competitiveness and stimulate innovation.

Despite the existing differences in the perception of Industry 4.0, in forecasts for the expected effect of its onset, it is worth noting that this concept implies a number of similar provisions in the development of the economy and society. As for differences, the prerequisites for their formation can be associated primarily with the following factors: socio-economic structure, state support, level of development, education and science (Khan *et al.* 2021). All the above trends in all regions of the world imply the economic modernization of society, which, in order

to maintain social stability and systemic balance, must have a clearly defined legal support.

In the process of economic modernization of society, it is impossible not to take into account global trends. The report of the US National Intelligence Council "Global Trends 2030: Alternative Worlds" outlines the key aspects of the expected megatrends and challenges in the very near future, which, in a highly globalized world, directly or indirectly affect most countries. The world of 2030 will be radically different from today. The authors of the report believe that by 2030 no country, be it the US, China, or any other, will be able to act as a hegemon. The expansion of the rights and freedoms of citizens, the distribution of power between the state and informal structures will largely stop the historical growth of the West, which began in 1750, and return Asia's weight in the world economy. A new era of "democratization" will come at the international and domestic levels. The report argues that in addition to expanding the rights and freedoms of citizens and the redistribution of state power, two other megatrends will shape the world order in 2030: demographic problems, especially a sharp increase in the elderly, and a growing need for food and water, which can lead to resource scarcity. These trends, which already exist to some extent today, will take a sharp turn in the next 15-20 years (National Intelligence Council, 2012).

Thus, of course, the vectors of public management and legal support of economic modernization of society must be multifactorial and have sufficient flexibility for rapid direction modifications if necessary. As an example of the complexity of such a task, we present an ideal model the case of the presence of only three factors (in reality, the number of factors is incomparably greater).

Let a random variable X be affected by factors A , B , C having a , b and c levels, respectively. Let us denote by y_{ijkt} the result of the t^{th} measurement carried out at level i of factor A , level j of factor B , and level k of factor C . The model will have the following form:

$$y_{ijkt} = \mu + \alpha_i + \beta_j + \gamma_k + (\alpha\beta)_{ij} + (\alpha\gamma)_{ik} + (\beta\gamma)_{jk} + (\alpha\beta\gamma)_{ijk} + \varepsilon_{ijkt}$$

where: μ global mean value of feature y ;

μ_{ijk} average value of observations at the intersection of levels i , j , and k of factors A , B , and C , respectively;

$\alpha_i = \mu_i - \mu$ effect of level i of factor A , where $\mu_{i..}$ mean value of feature y at the i^{th} level of factor A ;

β_j and γ_k effects of level j of factor B and level k of factor C , respectively;

$(\alpha\beta)_{ij} = \mu_{ij.} - (\mu + \alpha_i + \beta_j)$ interaction effect for the combination of level i of factor A and level j of factor B , where $\mu_{ij.}$ the average value of the feature y at the intersection of the i -th level of factor A and the j -th level of factor B .

$(\beta\gamma)_{jk}$ and $(\alpha\gamma)_{ik}$ are determined accordingly;

$(\alpha\beta\gamma)_{ijk} = \mu_{ijk} - (\mu + (\alpha\beta)_{ij} + (\beta\gamma)_{jk} + (\alpha\gamma)_{ik} + \alpha_i + \beta_j + \gamma_k)$ interaction effect for a combination of level i of factor A , level j of factor B , and level k of factor C ;

ε_{ijkt} random error of the t^{th} measurement at the intersection of levels i , j , and k of factors A , B , and C , respectively.

Null hypotheses can be written as follows:

$$H0_A : \alpha_i = 0, \forall i$$

$$H0_B : \beta_j = 0, \forall j$$

$$H0_C : \gamma_k = 0, \forall k$$

Each of the formulated hypotheses is equivalent to the hypothesis about the equality of the average levels of the factor, which, again, is possible only in the ideal model and not in real world.

Since the dependent variable is affected by more than one factor, null hypotheses are added about the presence of the effect of the interaction of factors:

$$H0_{AB} : (\alpha\beta)_{ij} = 0, \forall i, j$$

$$H0_{BC} : (\beta\gamma)_{jk} = 0, \forall j, k$$

$$H0_{AC} : (\alpha\gamma)_{ik} = 0, \forall i, k$$

$$H0_{ABC} : (\alpha\beta\gamma)_{ijk} = 0, \forall i, j, k$$

Digital evolution, according to F. Bassan, is based in principle on control of data and the ability to manage them (Bassan, 2021). Thus, data protection becomes a parameter for the effectiveness of regulation, including legal regulation. For example, in the EU, regulation is developing according to the "ladder" principle, the "steps" of which are built according to the principle of proportionality, including regulation on digital platforms. In the EU system, digital platforms are not just integrated into governance systems, but are also used to develop and protect it, "turning risks into opportunities" (Bogoviz *et al.* 2019). In the United

States, on the contrary, legal regulation develops from an assessment of how successfully state-legal structures are able to function in the conditions of technological progress: while 20 years ago the notion that globalization is incompatible with democracy was established in US political thought, today it is generally accepted that the problem is not in the globalization of markets, as before, but in developing digital platforms. However, the question remains the same the compatibility of phenomena (globalization, digitalization) with the structure and institutions of democracy (which differ depending on legal and cultural traditions).

In this regard, Bassan criticizes the tendency to manage new phenomena with tools that do not have the typical limitations of legal tools (e.g., territoriality and legal force). According to the researcher, law and technology are not “parallel worlds” today, but are combined and hybridized.

In addition, the emerging “ecosystems” of modern digital platforms lead to effects that are still waiting for state attention. Meanwhile, according to Bassan, the unity of the “ecosystem” of digital platforms at the legal level leads to the fact that they themselves form a certain “(law)order” (Bassan, 2021, p. 82). Bassan believes that if we allow the transition of the digital platform from the concept of “ecosystem”, which determines its operation in the market, to the doctrine of “order”, focused on the institutions and powers of the platform (similar to the “legal order”), it becomes possible to come to a unified approach, including in the development of legal regulation, and to determine whether digital platforms can be qualified as “private legal systems”. At the same time, it is supposed to start with the recognition of their “subjectivity” in the state-legal (and international-legal) sphere, by analogy with transnational companies.

Unlike multinational companies, digital platforms have additional elements and functions that allow them to be considered and classified as distinctive “legal systems”. Digital platforms today provide exercising of the following:

1. Regulatory powers if they adopt the behavioral policies of their user community;
2. Executive powers when these platforms take action to enforce their rules;

3. Jurisdictional powers in cases of establishing independent dispute resolution systems *de facto*, arbitration systems. If, finally, we add to these elements an autonomous payment system and, possibly, autonomous “currencies” in the near future (in this case, it does not matter whether a particular “cryptocurrency” will be tied to one or another state financial system and currency, or to a basket of currencies), the digital platform system is practically becoming full-fledged and increasingly more autonomous, i.e., “sovereign legal system” (Bassan, 2021, p. 105).

Over the past period, companies in the digital industry, according to L. Floridi, have demonstrated their clear inability to solve the problems that arise in society due to digitalization. “When the digital industry finally responded to the ethical issues surrounding artificial intelligence by creating hundreds of ‘codes’, ‘guidelines’, ‘manifestoes’ and ‘statements’, the much-fought ‘self-regulation’ came out in all its awkward emptiness, so subsequent “acts,” such as the creation of the Facebook Supervisory Board in 2020, seem to be a complete anachronism, a belated reaction to the end of an era in which self-regulation could not significantly change the situation” (Floridi, 2021).

We must pay tribute to the development of legislation, which will soon fully cover the digital industry. In particular, in the EU, following the General Data Protection Regulation (GDPR), after 2016, the following were adopted: the Digital Markets Act, the Digital Services Act, the Artificial Intelligence Act (AI Act), etc. Legislative measures to regulate the digital environment and industry demonstrate their social effectiveness, they are used as a model in many countries around the world. The conclusion of Floridi is the following: the idea of “self-regulation” in the digital environment and industry was great one but completely missed historic opportunity to date; it is time to recognize that self-regulation has not worked and should be replaced by law, and the sooner the better (Floridi, 2021).

In this regard, one can agree with the idea that the law should “learn” today, developing within the digital environment and digital society.

Christoph Graber, head of the Department of Legal Sociology at the University of Zurich, believes that a number of recent court decisions have shown that regulation is often under pressure to adapt to new digital technologies. This is explained by the fact that “legal practice is blind to the actual features of the relationship between law and technology, the efforts of the courts to restore the normative expectations of Internet users in the context of socio-technical changes caused by computer networks do not have an adequate theoretical classification” (Graber, 2021, p. 12).

Using the example of a number of court decisions, in particular, the decision of the Court of Justice of the European Union (CJEU) *Fashion ID vs Verbraucherzentrale NRW* (CJEU, C-40/17, July 29, 2019), called “Facebook Like button”, Graber illustrates the possibilities of the “learning process” for legal regulation in the digital society. From his point of view, a certain social problem that arises in civil society gradually flows into the legal system, where public expectations for its solution are stabilized, generalized, and finally institutionalized in legal norms. According to this author, above-mentioned decision of the EU Court of Justice is an example of the application by the court of existing general and abstract rules (namely from EU data protection law) to new technology so that as a result, public expectations are realized in specific circumstances and contexts, including on perspective.

It has also been observed that the process of implementing automated decision-making (ADM) is being activated today in many countries of the world, and increasingly – with using machine learning in public administration. Thus, the benefits of automation in terms of efficiency, cost savings, and accuracy are widely recognized. However, other factors of effective public administration, such as the rule of law, a formal decision-making procedure in public law, the protection of human rights, etc., often fade into the background. As a consequence of this approach, negative trends began to appear in the practice of automating the public management sector of government, affecting the most vulnerable sections of society those who, for example, turn to the state social security system or the immigration system, etc. (Cobbe *et al.* 2020, p. 48).

To solve these problems, according to various researchers, more attention should be paid to current and developing legal standards, human rights and fundamental principles of public administration, starting from the early stages of design, development, and subsequent implementation of ADM. The success of the implementation of ADM is associated with due consideration of the features of the decision-making system in public administration. For example, organizational and information processes in the public sector can be complex and informal. These features of the public administration system, in principle, significantly complicate supervision, which, in addition, when developing ADM, potentially reduces the likelihood of identifying and correcting problems at an early stage.

It is important to note that in the process of implementing the legal support of society' economic modernization, business entities should not see a risk factor in the state itself. When regulating the economy, the state should not only not create new problems for economic entities by this regulation, but also anticipate possible problems and determine measures that minimize the negative consequences of some, necessary to ensure rational management in the objective sense, but unfavorable from the point of view of rational management in the subjective sense, forms of state regulation of the economy.

CONCLUSION

The key characteristics of the digital economy distinguish it from the post-industrial model of recent decades, and accordingly, a new regulatory model is needed to accompany economic changes. The digital economy is more globalized in comparison with more traditional models due to its nature, so the universality of the legal regulation of activities in this area and the harmonization of approaches at the national and international levels are important. At the same time, there is currently uncertainty about the rules applicable to the digital economy, which is exacerbated by the fragmentation of regulation due to conflicting approaches implemented in different countries. In modern conditions, the problems of increasing the role of law in ensuring stability and sustainable economic growth are becoming relevant. To improve legal regulation in the economic sphere,

it is necessary to systematically develop and use the norms of various branches of legislation; there is the necessity of the high quality of laws, and a reasonable combination of state regulation measures and economic self-regulation.

The introduction of legal forecasting and risk diagnostics makes it possible to realize the possibilities of reliable planning of the legal development of the economic sphere. Successful economic activity is influenced by the coordinated use of private and public law regulators in business activities, on the one hand, and dynamic management regulation through new information technologies, on the other. Thus, a correlation is achieved between legal regulation and economic activity, which contributes to economic development and high end results.

As time shows, the economic sphere is the most important in society and requires the use of various methods of influence. Among them, there is the mechanism of legal regulation, which means the formation of a high legal awareness of participants in economic activity, their statuses and modes of interaction, as well as the use of incentives and responsibility. It should be emphasized that the traditional idea of law as a “hard fixer” of events and actions does not reflect the spirit of the times. Law is called upon to actively promote the establishment of new entities, economic and legal conditions and regimes, the strengthening of the rule of law in economic relations and the economic modernization of society. One of the limitations of the attempts to avoid creating an administrative burden by improving control over proposed lawmaking is that estimates of the potential burden of new or amended existing regulations sometimes differ from the actual burden that has occurred as a result of the application of the regulation. To reflect this issue, it is increasingly seen that impact analysis is a necessary element for reviewing regulations after they have been applied to ensure that the desired impacts are being achieved. This allows the application of regulations to be monitored against initial assumptions and is a powerful addition to the analysis of assumptions.

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