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RUSSIA IN GLOBAL ECONOMY: PROBLEMS OF THE NEW TECHNOLOGICAL MODE

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Abstract

The article substantiates the need for the transition to new models of economic management, characteristic of a neo-industrial society. Since 2010, the world begins to move to the sixth technological mode, which is characterized by the following features: intellectualization, informatization, the growing role of science, the development of space technologies, the use of renewable energy sources, the formation of a consumer society of knowledge instead of a consumer society of goods. According to all indicators of the sixth technological structure in Russia, there is a significant lag. Today, Russia is at the beginning of the development of the fifth technological order. The fifth technological structure is characterized by universal computerization, the development of biotechnologies, and genetic engineering. The article concludes that the main object of management should be a person, and therefore should go from the concept of personnel management to the concept of human resource management. One of the conditions for the transition to a new economy, to an innovative socially oriented scenario of its development should be the formation of an efficiently functioning labor market. And if today the economy is not oriented toward a faster transition to a new technological structure, then it will be impossible to ensure a steady pace of socio-economic growth and the lag in development can become insurmountable. And although the world is only moving to the sixth technological mode, scientists are beginning to think about the seventh technological mode, in which the human mind will become the main productive force.

Keywords: Technological order, neo-industrial economy, human resource.

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1. Introduction

At present, obviously, there is no other problem of social development that has attracted as much attention of scientists as the problem of globalization. Globalization is closely linked to the formation of the information society, characterized by the so called “new” economy. The future of any country mostly depends on rapid and effective transition to a post-industrial development model. As for Russian economy, this process meets serious difficulties, because it is still based on raw material export-oriented pattern which is commonly acknowledged ineffective. This model threatens competitiveness of the country and blocks the progressive development of science and technology. Practical activities to form a "new" economy should be based on deep and solid theoretical foundation. Therefore, various aspects of these transformations are now into the focus of scientific research of various branches of science.

2. Problem Statement

Practice shows that the more technological parameters appear in the country's economy, the more the struggle for limited resources flares up. This is fraught with increasing pressure on the state. In this situation, it is forced to assume the function of reallocating resources from productions, characteristic of the previous technological way to the production of new nascent modes. Such activity requires a serious reform of all components of the economic policy of the state: tax, fiscal, monetary, investment, social, foreign economic and others. In the economy of modern Russia, five technological modes, located at different stages of development, coexist simultaneously. The second and the third modes, like the oldest, are certainly in decline. Until 2015–2020, according to experts, the fourth technological system will dominate (its share in industrial production is 95.9 %) (Salikhova, 2012). It preserves the potential to develop and improve in the energy and electrical, chemical and oil engineering industries, in machine-building and instrument building. At the same time, the most effective directions, characteristic of the fifth and sixth technological systems, are gradually being introduced. And if the "battle" for the fourth way Russia basically won (more than 50 % of the existing technologies belong to the fourth level, and almost 30 % – to the third), the fifth stage is, unfortunately, completely missed, the necessary conditions for the runup are not created. We are talking about universal computerization, the creation of new chemical technologies, new materials, etc., and other highly technological spheres where the domestic achievements are more than modest. For example, the share of fifth-stage technologies in our country does not exceed 10 % (Konina, 2014) and it is usually directly related to the military industry. According to the Institute of Natural Monopoly Problems, 40 % of Russia's GDP is generated by the export of raw materials. High-tech industries with high added value contribute less than 10 % to GDP and 2–3 % to exports. In the USA they achieve 33 %, in China respectively 32.8 % (Yakushev, 2018). Russia's share in world exports of knowledge-intensive products does not exceed 0.3 % (Where do they work better than in Russia?..., 2019). As a result, Russia has a fairly low productivity rate compared to developed countries. Thus, the average productivity is more than 3 times lower than the corresponding parameter in U.S., and twice lower compared to the EU (Ranking countries in the world by the level of gross domestic product, 2019). According to the OECD, the usefulness rate of the average worker in the G7 countries is 2.5 times higher than that of a Russian worker, in Ireland and Norway productivity is four times higher than that of

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Russia The ranking countries in the world by the level of gross domestic product, 2020; Unproductive performance, 2019). But it is evident, the higher is the productivity, the stronger the economic potential of the country is, the richer society and the more opportunities are available to improve people's well-being.

Employment figures also leave much to be desired. Although the overall situation can be considered as a good (actual unemployment does not exceed the natural level, it is 4.8 %), but the state of youth unemployment is alarming. In Russia, people under the age of 25 make up 22.4 % of the total number of unemployed (Russia in numbers, 2019). On average, one in five Russians aged 15–24 is unemployed. Therefore, the well-being with Russian employment can be assessed as imaginary. It is known that it is not effective. For Russia, the real danger is the degradation of the structure of jobs and human potential as a result of the reduction of employment in industries requiring highly skilled labor, and the growth of employment in trade and mediation, security business, that is, mainly within the informal sector of the economy, which is not distinguished by innovative trends. The formation of an efficient labor market should become a prerequisite for the transition to a "new" economy, with an innovative socially oriented development scenario. For example, the current employment policy should be refocused from passive assistance to unemployed and traditionally risky social groups to active labor development in order to improve the quality of the labor force and its rational mobility. Even these examples seem to be sufficient to argue the need to rethink the concept and mechanisms of economic management system that can overcome the lag and create the necessary conditions for Russia to keep up with the rest of the world.

3. Research Questions

The history of industrial and post-industrial development of civilization has already known six modes (and now it is on its way to the seventh). The backbone of each mode is some revolutionary technology. Its revolution character is often generated by previously unknown patterns. More importantly, new technologies provide a quantitative and qualitative leap in the development of productive forces, fundamentally changing the content of various activities, from mining and all levels of resource processing to the consumption of the final product. In turn, the final product, by closing the cycle, is the most important source of expansion, as it ensures the reproduction of resources of the proper quality. Any technological mode in its development goes through three phases: the first of them is formation. This stage presumes the selection of new breakthrough technologies which differ a lot from the traditional routine way of production activity. The second step – growth – is characterized by the development of new production facilities capable to introduce new technologies. It means not only the increase of the production level, but also timely modification in accordance with the changing needs of society. This requires a review of the criteria for assessing the success and competitiveness of the enterprise and the national economy as a whole. The third stage, recession, demonstrates the limit of growth and profitability decline of the major companies.

However, the production capacity and accumulated material resources of this stage serve as the basis for the emergence of the new technological mode with absolutely new technics and consumer preferences. In other words, it plays the role of a source of origin intellectual, material and financial resources (initial capital) for the nascent technological mode. However, the development of new elements

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may be constrained by unfavorable technological, social and economic environments. In the monograph of Russian scientists Smirnov, Soshnikov, Romanchin, and Skoblyakova (2005) "Human capital: content and views, assessment and stimulation" it is concluded that from this moment between the new nascent and previous modes begins "tough" competition for all kinds of resources, because the new way of life uses not only the same energy, resources, the mass consumption of which has already been achieved as a result of the development of the previous technological mode, but also brings the technological aggregate in line with its own and integrates them into its reproductive contour. (Smirnov, Soshnikov, Romanchin, & Skoblyakova, 2005).

The following criteria are used to differentiate the modes: the technological level; the level and rate of growth in the quantity and quality of products; the emergence of new management and training technologies; changes in the institutional environment; increasing the well-being of the population and improving the quality of life. The sixth technological system (or "smart" economy, "new" economy, knowledge economy) entered the growth phase in 2010. According to forecasts, if follow the pace of development already achieved today, this phase will last until 2020, and it will enter the maturity phase in the 2040s. The following characteristics of this mode can be highlighted: intellectualization, i.e. mass use in all fields of neurocomputers, neuromathematics and artificial intelligence, including means for the development of innovative educational technologies of continuous learning in all specialties; information, i.e. the widespread use of highly automated information technologies in telecommunications, global, local and single management systems; – innovations that must be supported by capital at all stages, from the inception of an idea to the creation of a new product: new ideas – new technologies – new products with high added value – promotion of the product to the market – making a profit – investing in a new, and further in a spiral. The main characteristic features of the sixth technological mode should be noted: first, the increasing role of science, which is the main innovation, (so knowledge acquires commercial value); second, the use of renewable energy sources (solar, wind and energy consumption) and thus reductions in energy consumption; third, the formation of a consumer society of knowledge instead of a consumer society of goods.

It is possible to provide some data which are incontestably confirming lag of Russia on many indicators characterizing formation of the sixth technological way (Doroshenko, Malykhina, & Ospishchev, 2015). In Russia it is planned to spend till 2024 f or creation of systems of artificial intelligence 6.66 bln. dollars while in the USA only in 2018 8 bln. dollars were spent for projects in this area, and in China it is planned to create fund of artificial intelligence for the sum of 16 bln. dollars. According to data of the Program of development of the United Nations the index of education level in Russia makes 0.832 that corresponds to the 32nd place in the rating of the countries on education level (The rating of the countries on education level, 2020). As to the specific weight of costs of science in gross domestic product Russia (they make 1.1 %) (Ratnikova, 2020) takes the 34th place while in Israel these expenses make 4.25 %, in South Korea – 4.24 %, In Switzerland – 3.37, in Sweden – 3.25 % and in Taiwan – 3.16 % (Ratay, 2018). As to an indicator of costs of research works counting on one researcher Russia lags behind even more making 93 thousand dollars that corresponds to the 47th place. First place is won by Switzerland (406.7), the second place – the USA (359.9), the eighth place – China (266.6) (Ratay, 2018).

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Meanwhile, despite the fact that the sixth mode has not yet become dominant, there is already a question of the nascent seventh technological mode, which will be based on socio humanitarian and sociocultural technologies of the world order.

4. Purpose of the Study

Today there is no doubt that the future is beyond the neo-industrial path of development. It can guarantee such indicators of economic development as productivity growth and, as a result, the growth of the welfare of the social majority. In order to develop along this path, it is necessary to have the appropriate potential, as well as to know the laws of changing patterns of economic development and the criteria according which these models can be differentiated.

The main objective of our research presented in the article is to define how main characteristics of the modern Russian economy correspond to the main directions of development of new neoindustrial economy.

5. Research Methods

The research methodology in the article was the logical and systemic approaches that are able to provide a solution to the problem. The article used methods such as comparative analysis, deterministic factor analysis (index), the method of assessment and grouping. The relationship of the studied phenomena was studied using analytical indicators.

6. Findings

Since the emerging mode is characterized as the economy of "knowledge," the main object of management should become its generator and carrier - the person. Therefore, the current state of society tends to move from the concept of stuff management to the concept of human resource management. Like everything new, human resource management mechanism is still immature. Critical analysis of the use of its technology in the leading countries (not to mention the Russian modest experience), despite the promising statements and optimistic forecasts of its adherents, demonstrates a lot of contradictions between the theory and its practical experience implementation. While a growing number of companies are announcing the introduction of "fashionable" human resource management technology, the practical implementation of the new human resources management strategy faces significant challenges. In particular, there is no increase in the cost of training and retraining staff, on the contrary, for many managers it is an article of savings. Even if a part of the personnel functions is transferred from human resources services to line managers, it is done, as a rule, without additional retraining and is not particularly controlled by the top management of corporations. It is known, that in any major social and organizational innovations it is rarely possible to avoid negative consequences. But still, the transformation processes in human resource management are gaining momentum. And not only in the "advanced" West, but also in Russia and other countries with transitional character of economics. Instead of the traditional structure of stuff management, a management system, focused primarily on the development of human capital is being developed. In particular, the U.S. shows growing demand not only

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for new equipment, but also for a qualitatively new employee. Already about 5 % of productive forces in this country correspond to the sixth technological mode. There are fifty brain centres designing the future (Prospects for the U.S. economy in 2014, 2019). The state lending policy is no less important for the development of the country's economy in line with modern realities. Domestic corporations are motivated to innovate and increase efficiency by lending at a symbolic percentage. In the United States, for example, the base interest rate does not exceed 2.25 % (U.S. Fed rate: 2000–2019, 2019). According to the Russian economist Glazyev (2018) in Russia everything goes exactly the opposite way, there is a "quantitative limitation of the money supply, overestimation of interest rates and regulated tariffs, this artificially reduces the competitiveness of the Russian economy, condemns it to lag, and in the absence of access to long-term credit, Russian enterprises cannot master even the existing developments" (Glazyev, 2018, p. 12).

In order to provide the state with the necessary means to support the development of an innovative economy, some countries are taking unpopular measures such as tax increases. Actions alike make it possible not to lose their competitive advantages even in times of crisis. And if the innovations inherent in the new technological order are not adopted today, no program to overcome the crisis will be viable. Investment will not be able to provide innovation and there can be no increase in productivity and competitiveness. But it is these indicators, regardless of the type of the mode, remain the final, effective indicators of the national economy. They reflect the social and economic level of productivity of labor as a consequence of the country's social development, as well as characterize the perspective of its social and economic development.

7. Conclusion

So, the battle of the countries for leadership in alternative technologies of the sixth mode has already begun. The main technological growth trajectories are marked, along which the resources are concentrated, determining the competitive advantages of different countries on the 20–30-year perspective of a new long-wave rise (Salikhova, 2012). Advanced countries in order to win the race for leadership in the new world order began to form actively new models of economic management, focused on innovation development. Russia lags far behind in this regard. The result is the current state of the country's economy, characterized as "from stagnation to recession". Maintaining this model threatens to maintain the country's status as a commodity donor to TNCs and a peripheral place in the new technological order. The transition to a new development model, preventing irreversible lag from advanced economies is possible only with the increased attention to this problem, development and implementation of active and effective economic politics.

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