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An Innovative System As A Basis For A Phased Modernization Of The Production Sector In The Region.

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ABSTRACT

The article reflects the main results and goals of the special economic zones organization in the region. Analyzed the comparative characteristics of the comparison of industrial companies focused on the industrial economy and the economy of knowledge. The methodological basis of the system for assessing the functioning of the production sphere in the region has been revealed.

Keywords: special economic zones, the industrial sphere of the region, energy efficient trajectories, regional innovation system.

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SHORT REVIEW

The objective need to modernize the Russian economy is dictated, first of all, by the requirements of survival in the conditions of an ever-increasing level of competition and technological superiority of the countries that have integrated the innovative path of their development. It is the modernization of the economy, based on the formation of modern industrial and technological resources in the production sector, the implementation of modern industrial management systems and the effective involvement of innovative developments in the economic turnover, allow for economic growth in an innovative economy and the requirements for a sustainable development system [1].

The transition to energy efficient trajectories is a priority and necessary direction for further development for the production sector of the Rostov region, ensuring the stability and competitiveness of the region. The transition to energy efficiency strategies should be based on a system of incentive tools that should be used by regional authorities to support those enterprises that will plan to introduce the best available technologies as part of their plans. And secondly, reference books on the best available technologies, containing data on the best available and efficient technologies in various sectors of production in the field of energy efficiency, become an important information and investment tool in this situation [2].

In foreign practice, these directories are already being developed and they are planned to be updated every five years. However, if the enterprises-exporters of the region are guided only by foreign analogs, the region risks becoming excessively import-dependent in the field of technical and technological developments and high technology products, while in the Rostov region there is considerable potential in this field of activity (Table 1).

Table 1: Main results and goals of the special economic zones organization in the region

Economic	Social	Scientific and technical
- wider, in comparison with the main territory of the country or region, the attraction of foreign and national capital due to special preferential economic mechanisms, a stable legal framework and simplified organizational procedures; - local liquidation of the monopoly of foreign trade through the provision of access to organizations and enterprises of the SEZ to certain areas of foreign trade turnover; - ensuring relatively intensive additional growth of foreign exchange earnings in the budget of the country and regions.	- acceleration of the development of the backward territories of the region due to concentration within the zones of limited national resources; - - increasing employment by creating new jobs in order to minimize unemployment; - - creation of a layer of highly qualified managers to ensure the effective use of international practice in the field of finance; - - meeting the demand for high-quality goods and saturating the domestic market with necessary goods.	- - attraction of advanced foreign and domestic technologies; - acceleration of innovative and innovative processes; - - attraction of foreign experts and scientists; - modernization of equipment and existing infrastructure in order to improve production efficiency.

It should be noted here that, in general, the development of the described directories is based on already existing, albeit new, developments, but experimentally verified and having already established themselves as effective. In this sense, these directories are not directories for innovative products. However, in order for them to be replenished with new technologies tested in production, certainly, a developed innovative system is necessary [3].

Special economic zones operate in many countries. In various forms, they exist for more than 200 years and, depending on the goals and objectives, are differentiated into special economic zones (SEZ), free economic zones or special economic zones (SEZ).

In accordance with Russian legislation, the SEZ is interpreted as a part of the country's territory defined by the government of the Russian Federation, which has a special business regime.

Created special economic zones are a new promising tool for solving problems of attracting investment, diversification and bringing the economy to an innovative development path. They also stimulate the growth of industrial production, develop and introduce new technologies in the manufacturing sector, which will lead to the additional production of high technology products and services, which is especially important for the export-oriented sector of the region.

The creation of the SEZ contributes to the solution of not only economic and scientific-technical problems but also a number of social ones, which allows them to be considered as a very effective tool to stimulate the socio-economic development of the region [7].

The initial stage of the innovation process is the advancement of scientific and technical ideas about the materialization of existing theoretical knowledge and discoveries. This stage is carried out both in academic institutions and universities and in large scientific and technical organizations of an industry by highly scientific personnel. Financing is carried out mainly from the state budget and on a non-refundable basis.

At the second stage of the innovation process, research work is carried out. Their implementation is associated with a high probability of obtaining negative results. Therefore, there is a risk of loss when investing in the implementation of applied research, when investment in innovation is risky in nature and is called risk investment. Applied research projects are carried out in many scientific and technical organizations of industry and universities with various thematic areas of research and development. They are financed both from the state budget (for state scientific and technical programs, as well as on a competitive basis) and from individual customers in the face of large industrial organizations, joint-stock corporations, commercial funds, and venture capital firms [4].

At the third and fourth stages, the development is carried out with the stages - developmental and technological works (OCTR) and experimental works related to the development of projects, draft technical design, production of working design documentation, production, and testing of prototypes. These works are carried out both in specialized laboratories of universities, in design bureaus and at pilot plants, and in research and production departments of large industrial organizations. Sources of financing are the same as in the second stage, as well as own funds of industrial organizations [8].

At the fifth and sixth stages, the process of commercialization of innovations from launching into production and entering the market and further along the main phases of the product lifecycle is carried out. When launching into production, large investments are required for the reconstruction of production facilities, personnel training, advertising, etc. After the fourth stage of the innovation process, the market's response to innovations is still unknown and the risks of rejection of the offered product are very likely. Therefore, in the fifth stage, it is necessary to produce products on a small scale in order to follow the buyers' reaction to the proposed product. The financing of works on the sixth stage, connected with industrial production in large batches, will require 6–8 times more expenses than the costs associated with research and development. The main source of investment is the organizations' own funds accumulated in special funds for these purposes, as well as borrowed funds (bank loans) [5].

High hopes for accelerating both the innovation development of the regions and the regional innovation system as a whole are associated with the creation in Russia of special economic zones of the regional level [7].

In the region, with an innovation-oriented industry, which is actively involved in stimulating and shaping the profile of the scientific and technical reserve, which in turn provides a significant share of innovative products in the enterprise, small, medium and large businesses can be identified (depending on which one predominates in this subject of the federation). To transfer the economy to an innovative development path, it is important that these enterprises interact with each other since Constant contacts of participants in the innovation process are required in the adjustment of scientific research, the OCRP, and the production process. With the same purpose, public organizations of investors are created, which establish direct contact between entrepreneurs, inventors, authors of innovative products and investors interested in financing new promising business ideas [2].

Thus, in order to activate the innovative activity of the region with the help of regional-level SEZ mechanisms, it is necessary to consistently form a market and socially-oriented economy with a clear and stable legislation. Economic development should be based on maximizing the potential in the region, freeing up the private initiative with a parallel strengthening of the role of the authorities in providing favorable conditions. Until this is achieved in innovation activities, a number of unsolvable problems will remain. One of which is the lack of effective communication of science with production and effective mechanisms for bringing scientific and technological products to the level of goods.

The most effective model of interaction between science, education and production, a link between the developer and the consumer of innovation, between the scientific idea and its practical embodiment should be an innovation infrastructure [6].

We propose to develop a universal system for assessing the quality of development and functioning of both regional development and individual industries based on domestic and international experience. The main goal was an attempt to develop strategic directions for assessing the functioning of the production sector in the region.

Taking into account the requirements for the use of the minimum necessary number of parameters-indicators of modernization, it is proposed to use the following indicators when evaluating:

- the scale of innovation (an indicator of innovation activity, calculated by the number of enterprises introducing innovations; the proportion of innovative products in the total volume of manufactured and sold products).
- the intensity of innovation activity (the ratio of domestic R & D costs to investments in fixed capital;
- the ratio of investments in technological innovations to fixed capital investments;
- the level of development of human and social capital;
- the state of the infrastructure.

The current state of society is characterized by the severity of the demographic problem (decline in the birth rate, increased mortality, an acute shortage of workers, specialists in technical professions) make it necessary to include a system of indicators of this trend in the assessment of innovative susceptibility of business entities (Table 2).

Table 2: Comparison of industrial companies focused on the industrial economy and the knowledge economy in 2017

Companies	Physicalassets, billion dollars.	Number of employed, thousand people	The cost of research and development to the number of employees, thousand dollars.	The cost of R & D to sales,%
Companies focused on the industrial economy				
Daimler-Chrysler	372	441	14	2,9
Ford	284	345	17,4	4,1
NipponSteel	34	26,3	11,9	4
Taganrog Metallurgical Plant		7,7	1,1	0,39
Novocherkassk Electric Locomotive Plant		11,8	3,6	2,14
Knowledge Economy Companies				
Microsoft	59,3	50,6	86,6	16,9
Intel	44,4	80	36,8	9,4
Cisco	35,2	35	63,4	10,8
Saturn (cosm. Technology) Krasnodar			4,2	0,48
GK "Russian Technologies"				1,09

As can be seen from the table, the innovation activity of foreign and Russian companies in R & D expenditures, and the lag is observed both in enterprises focused on the industrial economy and on the knowledge economy. the level of infrastructure development, including organizations that unite on one territory, industrial, scientific, educational, technological, expert, business parks, information and credit and financial enterprises and organizations, etc.

CONCLUSION

We reviewed existing global international experience in shaping national development assessment systems. These techniques, as in the case and with domestic experience, do not have a clearly defined direction that reveals the level and assesses the development of the production sector in particular. However, these methodologies contain approaches and benchmarks that may be useful in developing a methodological basis for evaluating the efficiency of the production sector [5].

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