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CRISIS MANAGEMENT OF INDUSTRIAL FACILITIES IN OVERCOMING THE CONSEQUENCES OF THE PANDEMIC

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Abstract

This article addresses the problem of crisis management of industrial sector facilities with the current pandemic phenomenon and, in particular, the quarantine situation of developed and developing States. An analysis of the state of the industrial sector in Russia and in the world showed that the negative consequences of the virus epidemic affected almost all industries and more reduced the pace of development of extractive and manufacturing industries. Based on data from the analysis of the world and Russian market, the authors determined a tendentious mechanism for withdrawing enterprises from a stagnant state, where the leading role in solving socio-economic and financial issues was assigned to the anti-crisis management system. The definition of the conceptual features of the system under consideration has enabled the identification of stages and tools for addressing the impact of the pandemic on industrial sector facilities based on the principles of systemic, anticeptivism, adaptability and stability.

Keywords: Anti-crisis management, industrial sector, pandemic

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1. Introduction

At various stages of the economic development of markets, certain trends and risks in the activities of all economic entities prevailed and prevail today. A special scale of influence is exerted by economic, political and social phenomena on large enterprises - objects of the industrial sector of the country. Industry is one of the leading and promising sectors of the economy of any region, since this area largely determines the material basis of industrialization and has a massive healing effect on the domestic economy. It is customary to include among the objects of the industrial sector a complex of organizations and enterprises engaged in the production of energy, the extraction and processing of raw materials and fuel, the creation of tools and other consumer goods necessary for production, engineering or agriculture (Industrial and environmental impact of pandemic COVID-19, 2020).

2. Problem Statement

The continuous development of industrial production is the most important factor in the formation of the region's competitiveness, as well as an effective method of reducing the correlation between internal economic stability and market fluctuations in world markets. In other words, the state of industrial facilities is more dependent not on reversing regional trends, but on changing global external economic conditions. In the present circumstances, such changes include the growing economic crisis due to the widespread spread of the virus, as a result of which large enterprises are massively suspended, industrial processes are slowed down, and economic growth rates are declining not only within individual regions, but also around the world. The current shock of consumer demand has a similar negative impact on the work of the industrial sector: due to a decrease in their own income and an increase in the risks of uncertainty, consumers reduce costs and stagnate the activities of business entities (Ivanshina, 2016).

3. Research Questions

Today, the Russian and world markets are undergoing serious transformations related to the epidemiological situation due to the spread of the new virus. Many States have introduced a special regime aimed at curbing the pandemic by isolating citizens. Due to the sharp decline in consumer demand, production has slowed down, and in some cases stopped any activity at all. At the same time, the unemployment rate began to rise confidently, and the price of labor began to decline. The industrial sector is similarly unable to support its employees, which, of course, destabilizes the situation not only within a particular enterprise, but also at the level of the municipality, region, and country. It should also be noted that some industries have the opposite trend. For example, in the health sector, there is a shortage of qualified personnel, and the market for remote work is saturated with newly arrived employees. Demand for professions focused on online work has grown. However, the positive aspects available are only superficially related to the industrial sector. According to the World Bank, falling demand and supply of raw materials led to lower energy prices, which in turn launched a mechanism to stop the development of the extractive industry (Analysts estimated the decline of industry in Russia against the background of coronavirus, 2020). This is not the only example of the harmful effect of the viral outbreak on the

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development of economic activity, but a fairly striking example of what the industrial sector undergoes in the second quarter of 2020. Under these conditions, the problem of developing and implementing a modern system of crisis management at industrial facilities, which contributes to overcoming the consequences of the crisis caused by the pandemic and, specifically, measures taken to reduce the rate of spread of the epidemic, is urgent.

4. Purpose of the Study

Overcoming the consequences of the pandemic for industrial sector facilities is seen in the development of the system of crisis management, which means the development of certain measures aimed at reducing risks and ensuring the effective operation of enterprises in the current crisis situation (Turbine, 2009).

Anti-crisis management is largely an aspect of classical business management, since the management function as a whole is aimed at creating a stable system of enterprise life, regardless of transformations in the external or internal environment. However, it should be noted that crisis management is not always formed simultaneously with the main management strategy of the company.

In practice, the opposite can be observed more often: the anti-crisis component is developed with the onset of a particular negative situation on the market, with the occurrence of a certain risk with completely new properties that do not appear earlier. Thus, when examining the modern socio-information and economic space, it can be argued that the methodology for conducting economic activities in pandemic conditions is not exhaustive, in particular, there is no consolidation of universal methods of enterprise management in the global spread of the virus.

For the market economy of Russia, this phenomenon is largely unique and, therefore, most enterprises by the beginning of the quarantine period did not really have an effective development of anti-crisis management. In many developed and developing countries, a similar situation can be observed: the unpredictable risk of development to the world scale of the epidemic has brought down decades of production processes.

As a result, a high degree of unpredictability of the current situation has affected a large number of industrial sector facilities around the world. Existing management mechanisms for one reason or another could not correctly respond to the global challenge and a fundamentally new situation for many economies. The above is proof that the anti-crisis management system can exist independently, separately from the main management strategy.

Therefore, it is necessary to clarify the investigated definition as follows: anti-crisis management is a combination of operational and strategic management, where the tools for implementing management functions are simultaneously financial and economic analysis and a system for finding effective solutions in interaction with the external economic environment (How COVID-19 changes industry, 2020).

5. Research Methods

In this article, the following research methods are used: graphic, comparison method.

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6. Findings

Industrial sector facilities were most vulnerable in the current crisis situation because most workers in this area are engaged in production activities that cannot be transferred to remote work. Even those employees who work in the field of logistics, management or accounting in production do not always really provide the necessary equipment and distance themselves from production departments. Due to the above, objects of the industrial sector are forced to resort to a massive reduction in employees, merging the duties of certain persons, to reduce or completely stop production. And, of course, all existing strategies for managing economic activities are transformed into a system of anti-crisis management to optimize the expenses of the enterprise.

The energy sector, the automotive and manufacturing industries, and the production and production of raw materials were most affected by the pandemic. One of the key problems to date in the industrial sector is the lack of components.

In this regard, the world's largest automotive concerns and factories for the production of complex electronic equipment were temporarily suspended. All important elements of an electronic digital device, vehicle or other mechanism are usually imported and exported, but supply chains are now disrupted by the closure of numerous territorial boundaries.

Light industry was also affected by the suspension of goods transportation systems (for example, the development of textile production in China decreased by 26.2%, the development of electrical equipment, medical equipment, etc., is also stagnating) Another important problem of the industrial sector, which arose as a result of the spread of viral infection, is the decrease in prices for raw materials and materials: oil, gas, coal, copper, platinum, electricity.

Of course, the political situation was also a prerequisite for a sharp decrease in the cost of oil in March 2020, which played out against the background of the development and implementation of a world plan to reduce oil production (COVID-19 and international trade: issues and actions, 2020).

However, the epidemic that is spreading during this period has served as a kind of accelerator of the creation of favorable conditions for a decline in the price of oil and oil products and, like the political aspect, is a factor influencing pricing in the global market economy.

The imposition of two phenomena (on the one hand - political-economic, and on the other - epidemiological) contributed to the destabilization of commodity prices.

In order to specify the extent of the effects of the epidemiological situation in the industrial sector, an analysis of the state of industry in the Russian Federation and some other countries was carried out (Table 1).

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Table 1. The state of the industrial sector in Russia and in the world at the end of the first quarter of 2020 (Commodity Markets Outlook, 2020; Coronavirus and falling oil prices: what is this related to? 2020; COVID-19 and international trade: issues and actions, 2020; Hyundai Motor's China plant sales in February fall 97% from a year ago, 2020)

World trends	Russia	China	USA	India	France
General characteristic					
The global industrial production market faces a 10% drop by the end of 2020.	Industrial production in Russia in March 2020 decreased by 1.2%.	Profit of industrial enterprises decreased by 36.7%. Industrial production in the country decreased by 13.5%.	Volumes industrial production decreased by 5.4%, which was a record indicator since 1946.	Industrial production decreased in March by 16.7% - this is the maximum drop since the beginning of 1994.	Industrial production in France in March 2020 fell by 16.2% compared to February.
General characteristic					
World trends	Russia	China	USA	India	France
Automotive industry	Full production stop: Volkswagen, Avtotor, UAZ, Peugeot, Citroon, Opel (in particular due to supply problems).	. Production decline by 80.2% in March 2020. The resumption of production in June of the same year by 97%, however, demand in this industry remained low.	General Motors, Ford Motor and Fiat Chrysler have suspended car production plants in the United States and Canada.	Production was suspended: Fiat Chrysler, Ford, Honda, Hyundai, Mercedes-Benz, Nissan, Toyota, Volkswagen, Tata Motors.	Complete production suspension: Peugeot, Renault и Citroën. In general, production volumes decreased by 35.9%.
Production of raw materials; electric power	Production of petroleum products decreased by 43.2%. A sharp drop in stock markets and oil and metal prices. .		Energy generation from coal will be reduced by 25% by the end of 2020. Electricity production fell by 5%.	. Electricity generation decreased in March by 6.8%. The volume of production of raw materials has not changed.	In extractive industries, energy and water supply, production decreased by 4.1%.
Manufacturing	The volume of this industry decreased by 24.4%.	Profits of manufacturing companies decreased by 38.9%.	The volume of this industry decreased by 15%.	The volume of this industry decreased by 20.6%.	The volume of this industry decreased by 18.2%.

From Table 1, it can be concluded that the facilities of the modern industrial sector in a number of countries are severely affected by the pandemic and the related quarantine regime. For the most part, negative trends limit the potential of enterprises to produce and produce competitive products. The ongoing pandemic and new constraints reduce the likelihood of a rapid recovery in the industrial sector and the global economy as a whole. Before the advent of April 2020, experts predicted a slowdown in the growth

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rate of gross domestic product in the world by 1 percentage point, but current research suggests that every new month of the quarantine regime leads to an additional decline in industry, equal to a decrease in annual GDP growth by 2 percentage points (Krushinsky, 2012).

As noted earlier, mitigating the impact of pandemic control measures is seen in improving crisis management. Current anti-crisis management practices do not meet the current needs of industrial sector facilities due to the atypical situation. In other words, the modern tendentious mechanism for removing an enterprise from a stagnant state should have the following conceptual features:

- crisis management should be based not only on basic but also on specific principles reflecting the current crisis situation (Nikiforova, 2008);
- implementation of the management mechanism should be carried out within the framework of a systematic approach, which involves the interconnectedness, versatility, timeliness, complementarity of all procedures implemented;
- key anti-crisis programme in the extreme conditions created by the virus epidemic should be characterized by an increased degree of maneuverability in order to reduce the gap between the costs and income of the enterprise as quickly as possible;
- modern anti-crisis system should be dynamic: throughout the period of implementation of anti-crisis measures, multiple decisions of the same tasks are required in order to find the most optimal approach to enterprise management in the current situation (Barmouth, 2020);
- crisis management in addressing the impact of the pandemic on industrial sector facilities can only be seen in the context of the trend towards anticeptive development (Ovsyannikov, 2016).

Taking into account the above mentioned aspects, the mechanism of anti-crisis management of an industrial enterprise should be understood as a certain set of elements aimed at implementation of measures to prevent negative consequences of a crisis situation through unique tools for each industry (Dudareva, 2018). Typically, in extreme crisis situations, these instruments are short-term, complementary and priority (Table 2).

Table 2. Steps and tools to address the impact of the pandemic on industrial facilities with an anti-vaccine component (Belousov & Goncharov, 2019; Melnikov, 2011).

Process Milestones	Toolkit
Identification of the possibilities of complete or partial withdrawal of the enterprise from the current crisis situation and initial assessment of the probability of achieving a positive forecast of the implementation of the anti-crisis program.	Economic analysis, strategic analysis, financial analysis, analysis of the external and internal environment of an industrial enterprise
Systematic assessment of the financial situation of an industrial enterprise, carried out on a regular basis at certain time intervals (the more risk factors, the more likely any negative phenomenon will affect production; therefore, the number of factors determines the individual number of assessments and the time of their implementation for a particular enterprise).	Rapid analysis of the financial condition of the enterprise, including: horizontal and vertical analysis of financial and economic reporting, analysis of the solvency of the enterprise, analysis of financial stability, analysis of the profitability of industrial production. In the current epidemiological situation, rapid analysis should be carried out with decreasing intensity.

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Financial and economic diagnostics of the enterprise bankruptcy in order to determine the real scale of the crisis threats (identification of atypical characteristics of the current situation) (Ovsyannikov, 2016).	Extended financial and economic analysis, diagnosis of financial recovery, two-factor, five-factor, modified Altman models.
Determination of factors and conditions contributing to the development of industrial activity at the peak of the crisis situation, as well as during periods of its increase or decrease.	Business research aimed at identifying the real behavior and needs of the consumer segment. Socio-economic analysis, assessment of the resource component.
Development of anti-crisis target installations of the enterprise, formation of a certain concept and approach to production management	Organizational performance analysis, strategy development, modelling of likely developments
Development of anti-crisis target installations of the enterprise, formation of a certain concept and approach to production management. Formation and implementation of an anti-crisis program and corresponding subroutines of an industrial enterprise. Definition of tasks and functions of structural subdivisions.	Synchronization of flows of real assets, restructuring of production, development of specific projects to overcome the consequences of the crisis, economic reorganization of the enterprise (Glukhova & Behtina, 2016).
Development of a new anti-crisis management plan (preliminary elaboration of the company's situational response to the consequences of anti-crisis measures).	Anti-vaccine training programs, Gantt diagrams and cyclograms, network and tape allocation of resources to achieve the goals.
Create a motivational environment. Improvement of intangible motivation.	Optimization model of combination of interests of employees of the enterprise.
Introduction into the strategic policy of an industrial enterprise of newly formed incentives and directions of financial and economic activity, methods and approaches of anti-crisis production management.	Analysis of data on financial operations of the enterprise, planning and development of budgets, improved logistics model of supply of the enterprise and sales of products.

According to Table 2, it is necessary to note that most of the tools of crisis management to some extent involve the use of information technologies (Gorennaya, 2018). In a difficult epidemiological situation and, in particular, with the introduction of measures to curb the spread of the virus, economic entities are forced to translate their own activities into electronic digital format. However, in the case of the industrial industry, a complete transformation of the economy is impossible. In this case, partial digitalization and computerization of processes of production facilities is an effective method of crisis management. The organization's tasks, such as analyzing the external and internal environment, monitoring financial and economic efficiency, building models for the likely development of events, systematizing management procedures, marketing products, analyzing data on financial transactions, are quite feasible to implement at the lowest cost by using an effective set of information software products. It is important to note here that in the context of the quarantine regime, electronic digital technologies open up new opportunities for the introduction of management elements for absolutely every market participant, regardless of its industry orientation. Thus, demand and supply forecasting is a striking example of the use of information tools in crisis management (Romanova & Romanov, 2020). Digitalization of this management process is appropriate at the stage of determining factors and conditions that contribute to the

development of industrial activity at the peak of a crisis situation, as well as during periods of its increase or decrease. Another example of the introduction of information technologies in the mechanism of anti-crisis management is a crowdfunding campaign carried out through online sites in order to attract financing of the enterprise from outside. In the event that the industrial economy reduces the pace of production due to lack of resources or finance (in particular, in the event of a simultaneous decrease in income and an increase in the expenditure financial component due to quarantine measures), the funder enterprise can attract additional investments by offering an anti-crisis project beneficial to both parties. Conditions and rules for project authors on crowdfunding platforms do not create special difficulties in using and do not require large investments. Potential faunders (industrial entities) with the help of this Internet site can not only receive additional funding, but also systematize important information that in the future will allow assessing the effectiveness of the planned anti-crisis management measures (Shaykhutdinova et al., 2015, 2017; Solodilova et al., 2020). For example, offering investors samples of products in exchange for financial support, the company analyzes market features in a pandemic: determines the demand for goods, actual demand and needs of the consumer segment. Another technology that makes it possible to solve the problem of financial recovery of the enterprise in a short time is crowdlanding - obtaining loans accumulated using specialized web sites. Such platforms provide a real opportunity for industrial facilities to restore financial and economic stability without the use of banking products and, therefore, with the lowest costs of interest payments.

7. Conclusion

In summary, the development of a crisis management programme in the face of a pandemic and massive isolation of citizens will enable industrial enterprises to overcome the risks of possible extension of quarantine measures. Most industrial facilities today experience the negative consequences of the epidemic. However, enterprises facing the manifestations of the crisis are given the opportunity to actively develop anti-crisis policies by using a unique set of organizational, managerial, financial, economic and electronic digital tools. The use of this toolkit is recommended for the most effective management of the economy: each tool taken into account by the enterprise must solve a certain anti-crisis problem. Each new task and, accordingly, the concept of overcoming a crisis based on it, will serve as an important guiding guide in subsequent management decisions.

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