

Monitoring of Innovative Activity and Industry as the Basis of Risk Management and Industry

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Annotation:

Monitoring as a method of managing socio-economic systems is rarely considered in scientific literature. However, in our opinion, this is a significant oversight since monitoring facilitates the early detection of risk symptoms. This article presents the author's developments of a system for monitoring innovative activity in industry, which can provide early warning signals of risk situations.

The methodological basis of the study is rooted in the works of both Russian and foreign scientists. The author utilized general scientific methods of knowledge such as analysis, synthesis, and comparison, as well as specialized economic methods such as institutional and system analysis.

As a result, the necessity and importance of using monitoring as a scientific method for studying the patterns of innovative activity in industry is theoretically substantiated.

Keywords: monitoring of innovation activity, risk management in industry, industrial modernization.

INTRODUCTION. Monitoring occupies a special place in the system of studying economic processes at various stages, in different areas of scientific knowledge and spheres of activity. However, it should be noted that the utilitarian approach to monitoring is often limited to merely observing processes, while its functionality is significantly higher and its potential for use is clearly not exhausted.

Management is associated with the continuous movement of flows of material and financial resources for investment, innovation, implementation, and replacement of information and communication technology, among others. At the same time, the problem of ensuring, at any given moment, the availability of the required resources in the right quantity and quality is addressed. This

largely determines the effectiveness of industrial management and its rapid transition to the VI technological structure. The effectiveness of industrial management depends on the intensity of the flow and its regulation, which, in turn, relies on the receipt of necessary information in real time and the timely response to incoming information about the occurrence or approach of risky situations. This capability is provided by monitoring production and economic processes.

In turn, R. Mann understood monitoring as a regularly repeated activity aimed at controlling elements (indicators) of the environment and identifying critical deviations from specified norms (standards) [2].

DISCUSSION AND RESULTS. Monitoring serves to identify critical and extreme situations, factors of anthropogenic impact on the environment, and to provide an assessment and forecast of the state of observation objects in order to regulate their mutual influence.

In the Russian Federation, the first impulses for organizing monitoring in the practice of state management of the national economy and society came from the authorities. In 2006, Russian President V.V. Putin noted that “an important task is to ensure monitoring, obtaining objective, complete, and timely information on the effectiveness of regional and municipal authorities. In this regard, it is extremely important to bring the work of state statistics into line with modern requirements.” Monitoring should become the basis for making management decisions aimed at transforming the economy and industry.

The results of existing Russian and foreign monitoring systems are already being used for strategy development in technical and technological modernization, as well as for solving medium- and long-term problems in state and corporate management systems. In fact, monitoring has the potential to become not only a powerful tool for state management of the economy but also a method for the early detection of risk symptoms.

A significant contribution to the development of the doctrine of monitoring in Russia was made by Yu. A. Izrael and I. P. Gerasimov in matters of environmental monitoring [3–5]. I. V. Bestuzhev-Lada considers monitoring “a means of ensuring effective functioning for various systems of forecasting the social environment” [6]. A. Yu. Shevyakov and G. B. Kleiner see monitoring as “part of the economic management system; it is a specially organized, targeted, continuous (systematic) observation and short-term forecasting of the course of the most important socio-economic processes for the purpose of analysis, identification, and regulation in the decision-making process” [7].

According to I. I. Eliseeva, “monitoring acts as a system of measures that allows continuous monitoring of the state of a certain object, recording its most important characteristics, evaluating them, and promptly identifying the results of the impact of various processes and factors on the object” [8]. The author believes that the purpose of monitoring is to provide information for developing decisions on the further development of the object (process, phenomenon) and/or correcting the current situation.

N. A. Khomyachenkova defines monitoring of sustainable development as a targeted process of optimal selection of continuous control methods that allow an industrial enterprise to function effectively and develop sustainably over a long period of time [9].

L. V. Krasnyuk, analyzing different approaches to defining the concept of “monitoring,” provides the following definition: “monitoring is a system for tracking the corresponding characteristics of state phenomena and the dynamics of processes based on observation, analysis, evaluation, forecasting, controlling, and diagnostics” [10]. The ultimate goal is to assess the current economic landscape, identify patterns, and assess risks.

In the banking sector, monitoring performs a predictive function, enabling decisions to adjust current activities.

In the work of T.D. Makarova, several functions inherent in monitoring in education are identified: primarily, the functions of managing information flows (collection, storage, editing, issuing requests) and constructing forecasts of future states of the system based on this information [11].

The above definitions and various subjects of monitoring studies indicate the capacity of this concept. As a rule, they highlight the goals and objects of monitoring, as well as its procedural nature. Despite the frequent similarity in the content of definitions and interpretations of monitoring, there is no common understanding of its essence, and most importantly, its potential for assessing risk situations as they approach. We believe that the subject, goal, and type of monitoring are not essential characteristics of the process itself. Rather, it is a method of scientific research and practical management. In each individual case, its goal depends directly on the subject and object of monitoring, such as specific specialists and entrepreneurs, the analyzed subject, the business they conduct, and the processes they carry out.

Monitoring allows for control, diagnostics, decision-making, etc. These specified management functions, like others, extend beyond the scope of monitoring itself and involve the use of additional (non-monitoring) materials, assessments, documents, etc. Everything that goes beyond direct observation and analysis relates to other research and management functions, such as the preparation of recommendations and proposals, regulation of the object, and assessment of possible measures to correct the situation. Many authors, however, include these functions within the concept of monitoring. Forecasting is not an integral part of monitoring; rather, monitoring provides the materials needed to prepare a forecast, but does not develop the forecast itself.

Based on the established foundations in the interpretation of the concept of “monitoring” and taking into account some limitations in the given interpretations, we propose the following definition. Monitoring is a scientific and practical method of following and managing (regulating) trends in the normal and disturbed dynamics of natural and social processes in space and time. It consists of the systematic collection, observation, and analysis of measurable standardized retrospective and current information.

The purpose of monitoring, as a method of research and management, is to reflect various processes and systematically present information in real time. This helps confirm known patterns and identify unknown ones, allowing for the evaluation and making of management decisions, as well as preparing forecasts [12].

The depth and breadth of monitoring in space and time make it possible to see, study, and evaluate the corresponding patterns. Based on the information received, tasks can be set, and operational and strategic management decisions can be made (see figure).

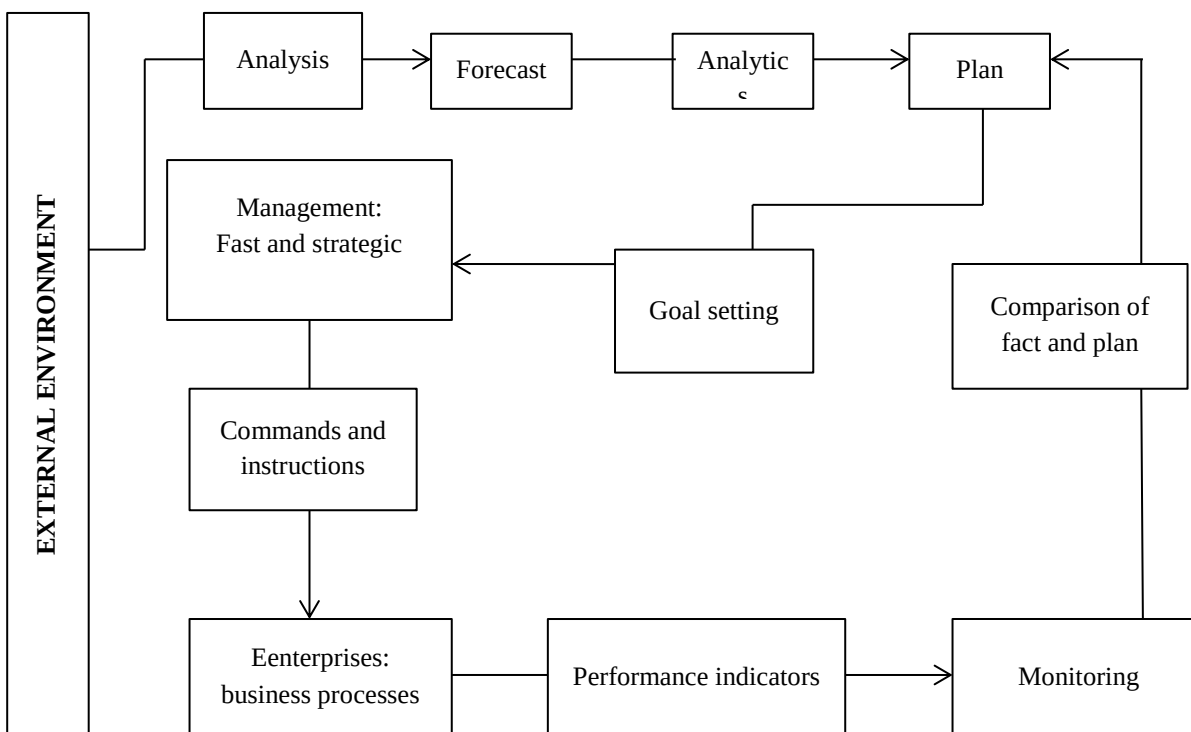


Figure 1. Place of monitoring in the enterprise management system

CONCLUSION. It is clear that monitoring, as a method of control, diagnostics, and preparation for management decisions, reveals its potential in terms of risk management. This is particularly evident with the ability to identify symptoms of the onset of negative manifestations from external or internal environments.

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