

**PROBLEMS OF THE ANALYSIS OF SUPPLY CHAINS INNOVATIVE PROCESSES
IN ORGANIZATIONS OF THE REPUBLIC OF BELARUS**

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The article discusses those economic activities for which information on innovations is collected in the Republic of Belarus, as well as organizations with economic activities for which information is not available, but which are nevertheless part of the supply chain. The reasons for the lack of information on the innovative activity of supply chains have been identified.

Nowadays, with the emergence of barriers to international trade, new security requirements and travel bans due to the COVID-19 pandemic, the issues of innovative development of supply chains are becoming increasingly important. Organizations are forced to rebuild business processes, find new suppliers and customers, new ways of delivering raw materials and finished products. Due to the reduction in supplies from China, many manufacturing enterprises around the world are facing raw material shortages. All of this has required organizations to build new supply chains, as well as find ways to improve the sustainability of existing ones. The number of software products developed and introduced into the activities of organizations has also increased due to the transition to a remote mode of operation. The introduction of innovations is becoming a prerequisite for the stable operation of organizations. However, it should be noted that there is insufficient information to assess the effectiveness of the innovation process in supply chains as a whole.

Traditionally, in the structure of supply chains, a focus company (which most often belongs to a manufacturing industry), suppliers and consumers of various levels, as well as intermediary organizations providing services for the transportation, forwarding and warehousing of goods are distinguished [1, p.13].

The statistical bulletin "On Scientific and Innovative Activities in the Republic of Belarus", published annually by the National Statistical Committee, provides the main indicators of organizations that have carried out research and development. The bulletin contains data on organizations whose main economic activities are activity in the mining industry; manufacturing industry; supply of electricity, gas, steam, hot water and air conditioning; water supply; collection, processing and disposal of waste, activities for the elimination of pollution, activities in the field of telecommunications; computer programming; consulting and other related services; activities in the field of information services, except for the activities of information agencies [2, p.2].

However, one can notice the lack of information about innovative activities in organizations that produce primary raw materials, namely, agricultural, forestry and fishery enterprises, as well as trade, transport, warehouse and other intermediary organizations. At the same time, the data on the innovative activity of organizations in these branches are absent not only in the statistical bulletin "On Scientific and Innovative Activity in the Republic of Belarus", but also in specialized bulletins on these industries: "Agriculture of the Republic of Belarus", "Environmental protection in the Republic of Belarus", "Transport in the Republic of Belarus" and "Retail and Wholesale Trade, Public Catering in the Republic of Belarus". The availability of information on the innovative activity of organizations in the context of the links in the supply chain is shown in Figure 1.

Thus, the analysis of innovation processes in supply chains is difficult even at the first stages of collection of information, since national statistical reporting is carried out mainly on manufacturing organizations, and not enough attention is paid to other links in the supply chain. Information on the innovative activity of these links can be obtained only indirectly by analyzing the general economic indicators of income, costs and labor productivity, as well as those specific to each industry - the size of cultivated areas, the availability of vehicles, freight turnover, retail and wholesale turnover, the size of stocks, etc.

This problem can be caused by a number of reasons.

First, the focus of organizations on technological innovation. At the same time, intermediary and trade organizations do not have the opportunity to implement them. The innovative activities of these organizations are mainly aimed at organizational and marketing innovations, to a lesser extent - process innovations, since these organizations do not produce goods by themselves.

However, despite the difficulty of introducing innovations in primary mining industries, trading and intermediary organizations, such an opportunity still exists. For example, in the collection "Belarus: Science, Technology,

Innovation", in the top 10 developments of scientific and technical programs in 2016–2019 there is a new variety of potatoes "Vodar" [3, p.10]. However, this potato variety was developed by the RUE "Scientific and Production Center of the National Academy of Sciences of Belarus for Potato and Horticulture", and not by an agricultural organization.

In trade organizations the introduction of self-service checkouts is spreading, which makes it possible to automate the process of purchasing goods, increase the throughput of checkout points and reduce personnel costs [4]. These self-service checkouts are a part of technological innovations, namely, process innovations.

	Suppliers	Manufacturers	Transport and ware- house intermediaries	Consumers
Information is available	Organizations of mining industry	Organizations of manufacturing industry	-	-
Missing information	Agriculture, forestry and fishing industry organizations	-	Transport and freight forwarding organizations, warehouses, 3PL- and 4PL-providers	Wholesale and retail intermediaries

Fig. 1. – Availability of information on the innovative activity of organizations in the Republic of Belarus in the context of the supply chain.

Secondly, organizations that actively innovate are usually large in size and have significant capital. Many of these organizations may have their own branded stores selling innovative products, making it even more difficult to collect information about the innovation process in trade. This is especially true for organizations in the engineering industry.

Thirdly, it should be noted that statistical data is collected according to the state statistical reporting form 1-nt (innovation) "Report on the Organization's Innovation Activity". However, the list of respondents who must provide this form, doesn't include organizations with such main types of economic activity as "transport activities, warehousing" and "wholesale and retail activities".

Thus, in the Republic of Belarus there are certain difficulties in accounting and analysis of innovations in the primary mining, intermediary and trade organizations, associated with the complexity of the development and implementation of innovations in these industries, the need for the cost of monetary and human resources, which may not be available from these organizations, and also the specific features of their work.

Figure 2 shows the dynamics of the number of organizations in the supply chains of the Republic of Belarus in 2011-2019, compiled according to the data of the National Statistical Committee of the Republic of Belarus.

From Figure 2, we can conclude that trade, transport and warehouse organizations accounted for about 71% of organizations in the supply chains of the Republic of Belarus during the entire analyzed period. Enterprises producing primary raw materials account for about 7% and manufacturing enterprises amount to 22% of organizations. Thus, the statistical bulletin "On Scientific and Innovative Activities in the Republic of Belarus" provides information on innovative activities of only 22% of organizations that are part of the supply chains of the Republic of Belarus.

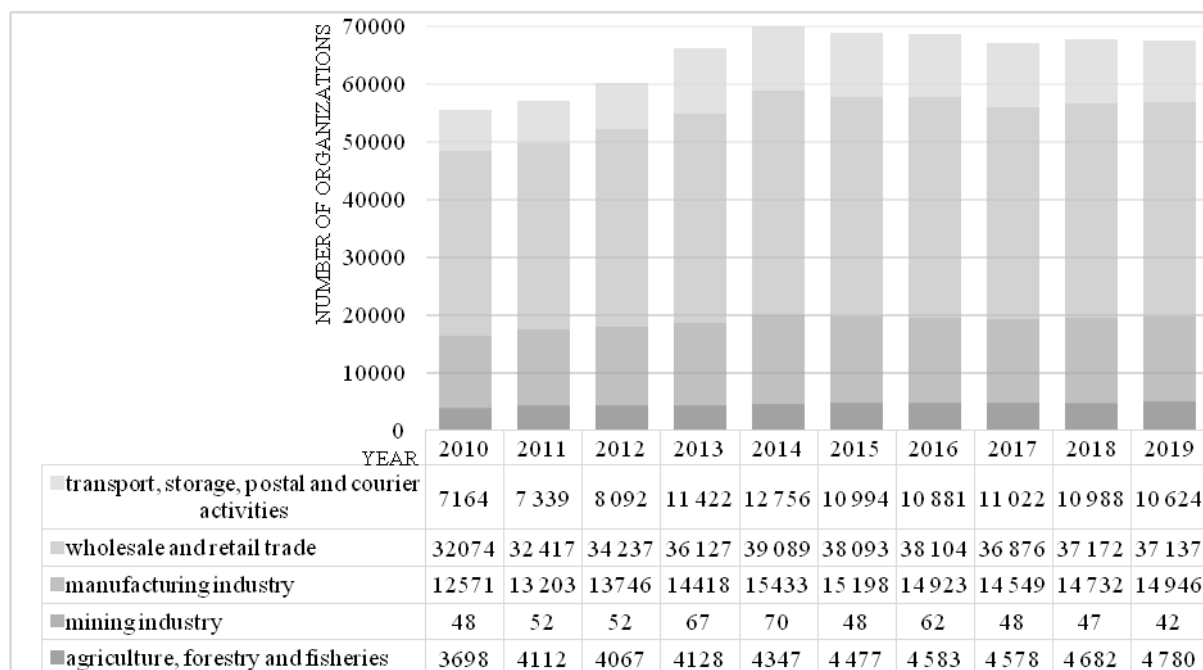


Fig. 2. – Dynamics of the number of organizations in the supply chains of the Republic of Belarus in 2011-2019 [5].

Thus, as a result of the analysis of innovation processes in the supply chains of organizations of the Republic of Belarus, it can be concluded that there is insufficient information about the innovative activity of organizations that make up most of the supply chains of the country. There is no statistical information on the innovative activities of organizations producing primary raw materials, as well as trade, transport, warehouse and other intermediary organizations. This situation may be due to the focus of organizations on the implementation of technological innovations, the complexity of the analysis of the innovative activity of large enterprises with their own transport, warehouses and company stores, as well as the lack of statistical reporting for organizations in which the above-mentioned activities are the primary ones.

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