

ISCKMC 2022**International Scientific Congress «KNOWLEDGE, MAN AND CIVILIZATION»****INNOVATIVE LOGISTICS SYSTEMS AND PROCESSES IN
AGRO-INDUSTRIAL COMPLEX**

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Abstract

The article explores modern innovative technologies for the logistics activities of enterprises of the agro-industrial complex. It is noted that in the context of the accelerated pace of development of society in all areas of entrepreneurial activity, there is a need to form and improve the system of innovation and the introduction of innovative processes in entrepreneurial activity. In the course of the study, the spatial aspects of the relationship between logistics and the innovative activity of enterprises of the agro-industrial complex are established. The factors influencing the level of efficiency of logistics processes are identified. The implementation of innovative activities increases the degree of adaptability of enterprises to the external environment, expands its opportunities to enter new markets, and creates conditions for economic stability. The rapid development of digital technologies challenges the traditional understanding of logistics and leads to revolutionary changes in the methods used, leads to the complexity of the organization of logistics activities and the need to find optimal solutions for the delivery of goods and information processing. Implementation of innovations in logistics requires immediate solutions for efficient production process, management and environmental impact on logistics processes. The introduction of logistics tools increases the profitability of companies, contributes to the growth of the company's market share, and increases the speed of its penetration into new markets by expanding the geography of the business of logistics market operators and business chain partners.

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1. Introduction

Global economic competition in the XXI century is becoming deeper and wider, as well as more severe, which forces business entities to find various ways of survival and development in the conditions of the world market. It depends, first, on how stable and flexible they are to changes in trends and various situations. Under these conditions, the strategic management of innovation can lead to increased revenues and market share and in some cases to entry into a completely new non-competitive market. Innovation can be not only in the form of introducing a new product or service, but also in the form of process optimization and the use of technologies that increase the company's efficiency through the introduction of new management methods.

2. Problem Statement

The implementation of innovative activities of agricultural enterprises is one of the main factors in the competitiveness of products, ensures the efficiency of resource use, increases the degree of adjustment of agricultural enterprises to the external environment, and creates conditions for long-term stability. The logistics innovations are regarded as the component of the innovative development of the enterprise, which will achieve the best results for both industrial and non-industrial enterprises, and will bring them to a new level of development, contributing to the improvement of the economic situation of the enterprise. Under such conditions, the study of the issue of the development and implementation of logistics innovations in the enterprise management system is of particular relevance.

3. Research Questions

Classical concepts and understanding of the essence of innovation are given in the works of J. Schumpeter and M. Kondratiev, who are considered the authors of the first wave of development of the innovation theory. The studies of P. Drucker, M. Porter, R. Kanter and T. Peters, who studied the economic aspect of innovations in the second half of the 20th century, are also connected with this research. The problem of the development and implementation of logistics approaches in the economic activity of enterprises is actively studied by Russian and foreign scientists. In particular, the issues of developing new conceptual approaches in logistics are covered in the works of Shumaev (2014), Gadzhinsky (2012), Prokofieva and Sergeev (2012) and others; the problems of the efficiency of logistics activities are covered in the works of Gerami and Kolik (2015), Lukinskiy and Pletneva (2016) and others, the definition of the main logistical approaches to the management of innovative processes of enterprises formed the basis of the work of Busher and Tyndall (1987), Little (2007), Stock and Lambert (2005) and others.

The analysis of the theoretical and methodological basis of existing research on this issue showed that there are certain scientific prerequisites for solving the problems of introducing innovative activities through the use of logistics innovations. However, the question of a practical-applied nature regarding the use of logistics innovations in enterprises remains an insufficiently developed topic and requires further research.

4. Purpose of the Study

The aim of the study is to identify problems associated with the innovative component in the activities of enterprises of the agro-industrial complex and develop practical recommendations for the implementation of effective logistical support for the innovative activities of enterprises.

5. Research Methods

The theoretical and methodological basis of the study was the main results of the scientific work of domestic scientists and foreign experience on the development and implementation of innovations, theory and practice of management. Methods of statistical and economic analysis, graphical interpretation, and expert assessments were used.

6. Findings

Under the conditions of openness in the implementation of innovative processes, enterprises that are able to implement an innovative idea and innovative potential gain a competitive advantage. The implementation of an innovative idea means the development of an innovative project. In the conditions of fierce competition, the leading positions will be those enterprises that can speed up the processes within the innovative project and establish interaction between the project and the external environment. Therefore, it is relevant to consider the innovative activity of agribusiness enterprises from the standpoint of the logistics approach system.

Logistics is a key sector for the world's economy. Logistics has a huge impact on the quality of production and service delivery. Logistics determines the direction of trade and transport links of individual countries with the rest of the world, the amount of imports and exports of individual goods, the levels of profit from distribution and transport activities, and the environmental risks associated with them. In these processes, the level of logistics is becoming an increasingly important factor not only for the internationalization of business connections and processes, but also for sustainability, safety and innovation. Innovation is a factor that increases the likelihood of logistics sustainability. Sustainability in logistics is achieved most often by reducing resources through improved logistics services. Innovation in this process is critical.

Innovation in logistics is a key element of competitive advantage. It is defined as a factor in reducing logistics costs, improving efficiency and increasing user satisfaction. The degree of renewal through innovation depends on both technological (new products, new production methods) and non-technological factors (new organization of work, new modeling of business processes and markets).

Innovations include several internal characteristics, the most significant of which are as follows: establishing a chain of cooperation of all participants in achieving the maximum benefits of logistics processes; adaptation or ability of companies to achieve excellence in logistics operations, programming and implementation of new products and services; optimization of the electronic document management system and reduction of the logistics process of transferring a package of documents within the logistics chain; sustainability or rational use of resources in search of “green” concepts for the development of

logistics; the ability to make high-quality and quick decisions; achievement of specific results, including IT solutions.

Besides, it is necessary to address the factors with an adverse impact: internal factors (high cost of innovation, weak in-house research and development, difficulties in managing and controlling costs, lack of qualified personnel, innovations that do not have a place in the company's current strategy, management's indecision to start innovations and lack of technical capacity to implement innovations) and external factors (lack of funding, lack of interest in clients, shortcomings in legislation, high taxes on profits, problematic import and export regime, poor external service, lack of opportunities, difficulty in interaction with higher levels, research institutes and consulting organizations).

At the regional level, more attention is paid to improving the efficiency of transport services through the direct development of the regional transport and logistics system, the functioning of which ensures the provision of a full range of transport services, including multimodal transportation, development of logistics options for the transportation of goods, insurance, and ensuring the safety of transportation (Dadaev, 2018, p. 640).

An interdisciplinary approach to the deployment, analysis and evaluation of innovative processes in logistics is key to achieving better economic and environmental integration between business entities. This approach is designed to help companies meet the priorities of their core business activities through the use of outsourced service providers (logistics services).

From an economic point of view, the logistics system is a complex organizational and economic system, consisting of interconnected material and intangible elements – links. The logistics system is a set of functional subsystems that ensure the sustainable functioning of agribusiness enterprises.

The main components of the logistics system of the enterprise are the subsystem of supply, marketing, production subsystem, and the main components of the service subsystems are both transport and storage. To achieve the goals and objectives of the logistics system of the enterprise, a set of management actions is being introduced, which is called the logistics management. Logistics systems are complex, dynamic, open and adapted systems that are characterized by managerial, organizational and technological innovations.

The relationship between logistics and innovation activity is manifested in several aspects: on the one hand, the use of logistics is aimed at increasing the efficiency of implemented innovative ideas and projects; on the other hand, the logistics activity itself, like any other activity in the enterprise, requires innovations that increase competitiveness and ensure further development of the enterprise.

The relevance and effectiveness of the innovative logistics approach is reflected in the increasing role of a single organizing basis in relation to all types of economic activity. There is a new control object, i.e. a through material flow.

It should be noted that the introduction of logistics innovations into the management system of many Russian enterprises is an innovative activity. At the beginning of the introduction of logistics innovations, an enterprise should decide what goals it pursues and what logistics processes should be

changed. Particular attention should be paid to such areas as commercial services, accounting system, purchases, and supply.

At the same time, the attention should be paid to the problems in the following logistics activities that are most often encountered in practice: the lack of a clear system of information interaction; the accounting program that does not reflect real information regarding marketable products in the warehouse; lack of an organized system for recording and tracking defective goods; lack of qualified workers; drawbacks in loading/unloading schedules of goods; formalization of responsibility of freight forwarders for the cargo; weak intra-city interaction; lack of clear differentiated rules for determining the cost of cargo delivery; deficiencies in the accounting information system.

The logistics innovations include the following: analysis of the logistics system, diagnostics, problem identification and goal setting; selection of personnel capable of performing innovative tasks; adjustment of the management system; building a logistics system.

Taking into account the innovative logistics components it is necessary to single out the most important factors influencing the level of effectiveness of logistics processes: the period of performance of logistics operations; improving the quality of services; reduction of logistics costs. The maximum reduction in the time of operations in the field of logistics makes it possible to respond flexibly to changes in the external environment. The time factor, along with the price and quality of products, determines the success of the operation of each individual cycle, together with indicators of logistics costs, service level, and reliability of supplies. It is used as a criterion for evaluating the effectiveness of logistics management.

The quality of service is the next important factor in the system of logistics activities. Customer service implies the use of various forms of logistics activities, i.e., transportation, warehousing, inventory management, information support and packaging (Stock & Lambert, 2005).

The competitiveness of the enterprise, based on high-quality logistics services, is not built on attracting new customers, but on increasing the value offered by the already existing customer base. Therefore, the main goal in this case is the complete satisfaction of needs. The increase in cost to the consumer may come from the development of logistics processes that facilitate service at lower cost and aim to improve quality and utility (Busher & Tyndall, 1987).

The logistics costs of enterprises are associated with various material flows, which are characterized by space and time sequence (Little, 2007). Optimization of such costs can be carried out through the rational use of vehicles, storage facilities, reduction of inventories, cooperative deliveries, etc.

Consequently, the totality of the considered factors for increasing the efficiency of logistics activities in a dynamic market environment will enable the enterprise to provide competitive advantages in the system of organization and management of logistics processes.

The transformations taking place in the economy set certain tasks for enterprises, in particular, to enter new sales markets, strengthen competitive positions, etc., and force them to search for and create innovative activity strategies that would increase their competitive opportunities and advantages.

In the scientific community, digitalization processes in logistics are recognized as one of the most significant manifestations of the innovative development of the logistics sector. Logistics was one of the first to feel the introduction of digital technologies: the objective need for management automation,

increasing the reliability of transportation prompted transport companies to computerize management processes earlier than others, and then digitalize the entire field. At the moment, there are four key areas in the process of digitalization of the transport sector: digitalization of logistics infrastructure and supply chains; robotization of production processes; large-scale automation, including management processes; introduction of automatic navigator systems.

Modern digital technologies used in logistics actively influence the entire supply chain, transforming it into an automated process. A striking example of this can be the Transportation Management System (TMS), a kind of CRM, specially adapted for the transport industry. The key processes that this software solution automates and optimizes are the following: planning (automatic selection of the most efficient transportation options), transportation (monitoring of the process 24/7, even in the absence of a dispatcher), support (automation of documentation processes and communication with all parties of transportation), calculations (automation of operations as regards fuel consumption rates, optimal number of stops on the way, control of balances and losses of cargo, etc.).

New eco-friendly bags are being introduced, meeting the international standards. The quality control of fruits and vegetables is tracked through sensor technology to protect the delivery and track its location during transportation. In turn, the selected transport must be “green” (with reduced carbon dioxide emissions). In modern practice, “green logistics” has many different definitions. Translated from English the “environmental logistics” means “reverse logistics”. The term appeared as a result of increasing public environmental awareness. General approaches to understanding the concept of “environmental logistics” are formed on the basis of innovative methods and the latest technologies in logistics, taking into account the least impact on the environment.

The economy and the environment are interconnected and this is no longer a subject of discussion in modern science. The close relationship of the elements that are important for human well-being and the need for their balanced development is the basis of the idea of sustainable development, which is a strategic vision of the future of humanity (Bekmurzaev & Dadaev, 2021).

When implementing environmental logistics, the directions arise that contradict the financial goals of the enterprise, the so-called paradoxes:

1. Cost. The cost saving strategy that enterprises follow to invent a cheap production method usually does not take into account the environmental considerations, thus the green strategy is more expensive for the enterprise.

2. Flexibility and time. Not all supply chains are capable of fast and ecological activities, an example being machine production, which increases the negative impact on the environment by saving time.

3. Reliability. The success of logistics depends on the ability to deliver cargo with the least threat or damage, while the least polluting modes of transport are not always reliable.

4. Warehousing. Reducing warehousing costs is one of the main goals of logistics, but this means that the goods will be longer in transit, which will contribute to even more pollution.

5. E-commerce. The development of information technology leads to the introduction of new types of trade, as well as a higher level of energy consumption.

“In the past, caring for the environment was not a top priority, but over the past decades, the environmental principles of logistics are increasingly reflected in the practice of supply chain management” (Bekmurzaev & Khazhmuradova, 2021, p. 5).

The innovative solutions introduced into the supply chain must be faster, more easily accessible, more efficient, and comply with legal requirements. As more companies around the world outsource their supply chains, visibility and traceability are becoming more important to them. There is an increase in the number of companies that use external sources, losing control over what is part of their own operations. Given this fact, many large campaign start-ups are starting to focus on the need for visibility in the supply chain and thus trying to achieve greater efficiency in the logistics sector.

7. Conclusion

In the context of accelerated development of society in all areas of business activity, it determines the need for the formation and improvement of the system of innovations and the introduction of innovative processes in the activities of agro-industrial enterprises. The development of integration processes has led to the fact that traditional approaches to the formation of an enterprise as a closed system focused only on the internal environment become ineffective. Under such conditions, the main task for the enterprise is the introduction and implementation of an innovative idea and its implementation in an innovative product, service, process and profit from this activity (sales of an innovative product, provision of an innovative service, and implementation of an innovative process). The use of logistics innovations in the management system will allow agricultural enterprises to increase the efficiency of their activities and provide competitive advantages in a dynamic market environment.

Innovations in logistics requires fast solutions to meet the production, management and environmental impacts of logistics processes. Experience shows that in order for the innovation in logistics to be successful, the synergies among partners, processes, etc. shall be in place. Innovation helps to strengthen the role of logistics in the environmental sustainability implementation.

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