

Using simulation models to manage logistics processes in the enterprise

Solodukhin S.V.

Candidate of Economic Sciences,
Dean of the Faculty of Economics and Management,
Zaporizhzhya State Engineering Academy

Khoroshun V.V.

Candidate of Economic Sciences,
Senior Lecturer at Department of Economy
and Information Technologies,
Zaporizhzhya State Engineering Academy

Features of the development and operation of logistics systems necessitate the development of exactly simulation models. Building a set of economic and mathematical models to improve the quality of decisions made in managing the logistics processes of enterprise development is particularly relevant in the context of reforming the economic system, when it is necessary to use effective management tools that are adequate to modern economic conditions.

Therefore, the purpose of the study is to determine the feasibility of using simulation modeling in the management of logistics processes in the enterprise.

To achieve the goal, the following tasks were set and solved:

- analyzed existing methods and models for solving problems of logistic processes management, in particular, inventory management and to study the possibility of their adaptation;

- the concept of logistic inventory management was formed at the enterprise on the basis of a complex of economic and mathematical models of logistics of supply;

- developed and implemented methods of production logistics for inventory management in the enterprise and to build a simulation model using the software tool AnyLogic 8.0.

During the analysis of the model, it was found that the enterprise's selected inventory and provision management system is sufficiently effective for a wholesale and retail enterprise in a modern economy that has sufficient resource potential and uses it in full, which has led to an increase in economic efficiency.

With the help of a simulation model of the process of logistic activity of the composition, it was possible to analyze the bottlenecks in the process of commodity movement and to develop directions for optimizing the process.

Simulation modeling of logistic processes allows analyzing the system's response to changes in working conditions, studying the process and direction of the model to determine the development prospects of the enterprise, using the results of the research allows to increase the efficiency of economic activities of enterprises by optimizing the structure of inventories and sources of their financing.