

*A.S. Zahorodnia, M.V. Zhylkevych, Ye.V. Lemekha
(National Aviation University, Ukraine)*

The essence and types of logistics systems.

The article examines the concept of logistics system, characterizes its essence, analyzes the levels of logistics systems and their use. Logistics systems and their classifications are considered. The concepts of micrologistics and macrologistics systems are defined. The goals of creating micrologistics and macrologistics systems are highlighted.

Logistics systems are very diverse coverage of the company's activities.

The system approach is a methodology of scientific knowledge, the basis of which is the consideration of objects as systems, which allows you to see the object under study as a complex of interconnected subsystems united by a common goal, to reveal its integrative properties, as well as internal and external connections ligaments. The system approach involves a consistent transition from the general to the partial, when the consideration is based on a specific final goal, to achieve which the system is created. According to the methodology of the systems approach, each system is an integrated whole even when it consists of separate, separate subsystems.

Logistics systems are included in the generally accepted concept of "systems", because they consist of system-forming elements, closely interconnected and interdependent among themselves, which have ordered connections and form a certain structure with predetermined properties [1].

These systems are distinguished by a high degree of coherence of the input productive forces for the purpose of managing end-to-end material flows.

A logistics system (LS) — is an adaptive system with feedback that performs certain logistics functions (operations), consists of subsystems and has developed intra-system connections and connections with the external environment [5].

The purpose of the logistics system is to ensure the availability of the required goods in the required quantity and of the specified quality at the right place and at the right time for the right consumer at a given cost.

Any logistics system consists of a set of elements, the so-called links of the logistics system, between which certain functional connections and relations are established. Internal system connections are stronger than connections with the external environment. They usually have a cyclical nature, because they reflect the sequence of transfer of material and information flows between the links of the corresponding logistics chain.

The majority of logistics systems that actually function in practice, as well as most complex systems, have the following properties:

- complexity — is characterized by the following main features: the presence of a large number of elements (links), the complex nature of the interaction between individual elements, the complexity of the functions performed by the system, the presence of complexly organized management, the influence of a large number of stochastic environmental

- factors on the system;
- hierarchy — subordination of elements of a lower level (order, rank) to elements of a higher level in the context of linear or functional logistics management;
- integrity — the ability of the system to perform a given target function, implemented only by the logistics system as a whole, and not by its individual links or subsystems;
- structuredness presupposes the presence of a certain organizational structure of the logistics system, which consists of interconnected objects and management subjects, which realizes a given goal;
- mobility — the variability of the parameters of the elements of the logistics system under the influence of the external environment, as well as the decisions made by the participants of the logistics chain;
- uniqueness, unpredictability and uncertainty of behaviour in specific conditions and under the influence of the external environment;
- adaptability — the ability of the logistics system to change its structure and choose options for behaviour in accordance with new goals and under the influence of the external environment.

The limits of the logistics system are determined by the cycle of the means of production. First, means of production are purchased, which in the form of a material flow enter the logistics system, are stored, processed, stored again and then go from the logistics system to consumption in exchange for financial resources that enter the logistics system. The allocation of the boundaries of the logistics system based on the cycle of the means of production was called the principle of "paying money to receive money."

Logistics systems are classified according to the following characteristics. Basically, according to the spatial limitation, logistic systems are divided into two types:

- macrologistic;
- micrologistic [3].

A macrologistics system is a large logistics system for managing flow processes with the participation of several or more independent economic entities, not limited by territorial location.

The following macrologistic systems are distinguished:

- regional;
- national (interregional);
- international.

The creation of macrologistics systems is due to the need to ensure clear interaction of multi-sectoral structures in order to improve the economic situation at the global level. During the creation of macrologistics systems, special attention is paid to the mutual agreement of the interests of each participant, regardless of his role in the created system.

The goals of creating macrologistics systems can be significantly different from the goals and criteria for the synthesis of micro-logistics systems. In most cases, the criterion of minimum total logistics costs is also used during the synthesis of macrologistics systems. However, most often the criteria for the formation of

macrologistic systems are determined by environmental, social, military, political and other goals [4].

For example, to improve the environmental situation in the region, a macrologistic system for the optimization of transport (cargo) regional flows can be created, which solves the problems of optimizing routes, resolving traffic flows, switching from one mode of transport to another. From the point of view of state management bodies, which can also participate in the creation of a macro-logistics system, the positive effect can be expressed, for example, in the improvement of the general economic situation in the region, country or between states.

Thus, the macrologistic system is a highly integrated infrastructure of the economy of the region, country or group of countries.

The micrologistics system covers the intra-production logistics sphere of one enterprise or a group of enterprises united on a corporate basis. The micrologistics system includes technologically related productions, united by a single infrastructure, which work for a single economic result. The micrologistic system of the enterprise can be considered in the form of main subsystems: procurement, production and sales.

Procurement is a subsystem that ensures the flow of material into the logistics system.

Production planning and management — this subsystem receives the material flow from the procurement subsystem and manages it in the process of performing various technological operations that transform the subject of labor into a labor product. Sales is a subsystem that ensures the release of material flow from the logistics system.

Sometimes in economic literature you can find the opinion that micrologistics systems are separate links of macrologistics systems [2].

However, this is not always the case. Production and economic structures that are part of the macrologistic system and are legally independent can fulfill all the requirements and functions of this system, perceiving them as a factor of the external environment. At the same time, they can carry out their domestic production and business activities traditionally.

On the other hand, an enterprise that operates on the basis of a logistics concept may not be part of a macrologistics system, especially if it does not exist. It builds its activities as a local micrologistic system that adapts to the dynamic external environment.

Today, one of the basic concepts of logistics is a "logistics system" that implements a systematic approach.

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