

Materials of Conferences

CLASSIFICATION OF LOGISTICAL SYSTEMS AND OPTIMIZATION OF GOODS CIRCULATION PROCESSES

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Logistics is the acknowledged critical reserve aimed at the decrease of expenses in the field of resource transportation.

In modern market economy three spheres of the movement of resources objectively exist and interact: sphere of commodity production, sphere of the

address of goods and services, sphere of consumption of goods and services.

In fig. 1 it is shown classification of logistic systems.

Logistical system [1] is the adaptive feedback system that performs certain logistical functions and operations, consisting usually of several subsystems and having developed relationships with the external environment.

In the late eighties and at the beginning of the 90th major western companies sought to develop global logistic strategy [2]. The dominant idea of the rapid development of the logistics in that time was the maximum integration of the logistical functions of the company and its logistical partners into a so-called full logistical network: “procurement-production-distribution-sales” to achieve the ultimate business goals with minor expenses.

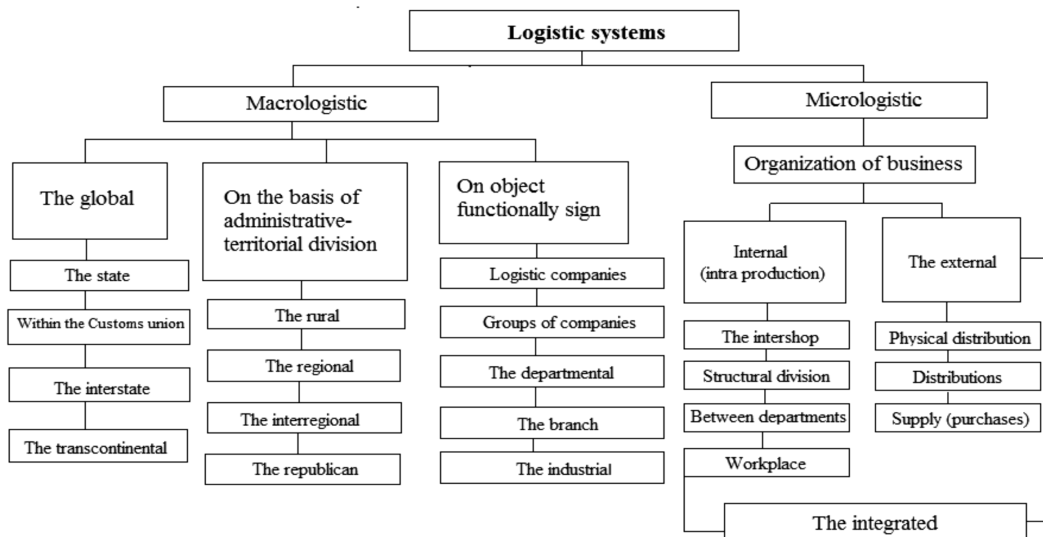


Fig. 1. Classification of logistic systems

As the commodity production develops, it becomes much more complicated, as the production involves a growing number of businesses, often located on the territories of regions around the world (so-called “global production”). Consumption of goods and services, in turn, becomes more and more various, focused on the accounting of individual requirements of buyers and customers.

In such circumstances, there is an urgent need for reselling enterprises, operating in the sphere of circulation of goods and services, i.e. between the producers and consumers. These enterprises, which represent the wholesale and retail trade companies, forwarding, transport, communication, warehousing and container management, financial, informa-

tion, marketing, advertising, insurance, customs, security organizations, form the infrastructure of the commodity market.

A decisive role in the development and approval of an integrated logistics concept has been promoted by the possibility of permanent control of the product flows on real time basis in remote access modes through information communication systems [3, 4].

The term “infrastructure” came from Latin words – infra meaning “below” and structure – “structure”. The infrastructure of the commodity market is defined as a set of non-manufacturing businesses and organizations that serve for the efficient operation of economic flow processes.

The infrastructure of commodity market does not create new products, but increases the cost of production, which has already been delivered by the productive sector of the economy. This infrastructure added cost is associated with the implementation of services connected with management, marking, forwarding, loading, unloading, transportation, warehouse processing, storage, insurance, protection and sale of material assets, with the imposition of taxes, excises, and duties.

Efficient infrastructure implies the optimization of costs, added to the price of the products, which should ensure the competitiveness and, consequently, the demand for these products on the commodity market. Today the share of such added costs often exceeds 1/3 of the final price of the realization of the products in our country. Based on this indicator the CIS countries, are unfortunately ahead of many countries in the world due to the substantial backlog in the levels of development of distributive trade, warehousing, transport systems, high tariffs for their services, poor organization and management of production flows.

Analysis and search of ways to improve the goods circulation is based on the crucial logistics assumption – comprehensive approach. It refers to the need to consider the entire goods circulation process as a combination and the integration of its stages and elements based on the congruence of interests of all parties of this process.

It is the comprehensive approach that enables logistics not to only optimize the processes of physical distribution. Research and experience confirm the fruitful opportunities of logistics to optimize many other flow processes associated with human activities. Such opportunities are, for example, addressed in the social sphere.

One of the important concepts in logistics is the logistical chain (fig. 2), that is, the total order of elements of logistical system (variety of enterprises and organizations carrying out the transactions to bring product from one system to another), organized by material (information or financial) flow aimed at the analysis or synthesis of a specific set of logistical procedures [3, 4].

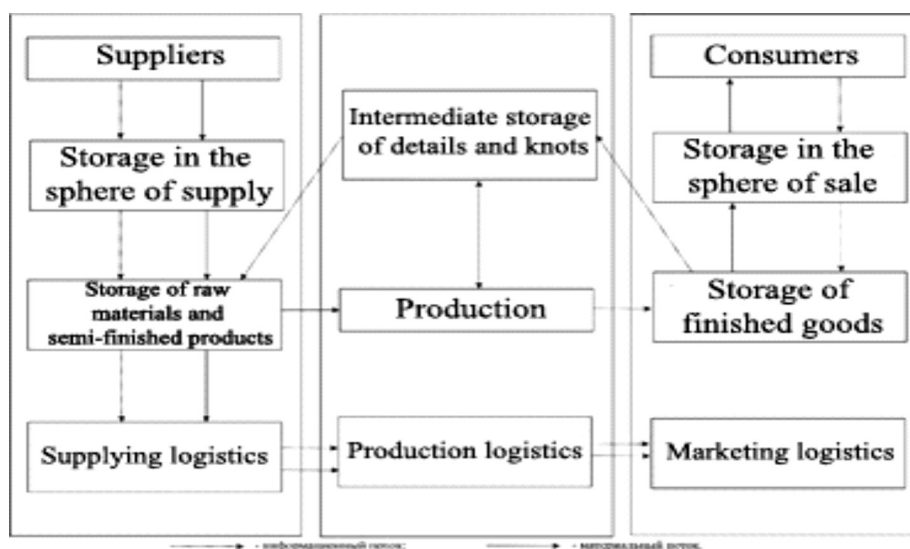


Fig. 2. Main links of a logistic chain

Process of production interacts with system of logistics in two directions.

Firstly, production has to regularly resupply finished goods in distribution system and which is especially important, to meet spontaneous requirements irrespective of, whether products are standard, modified or special. Second, production depends on system of material security regarding raw materials, other materials and component parts in certain quantity and of certain quality. Thus, the material elements of logistics include vehicles, warehouses, means of communication and management, and also the staff, that is the workers who are carrying out the consecutive operations.

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