

Improving the efficiency of the transport and logistics sector

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Abstract. The use of modern information technologies in transport logistics makes it possible to reduce the cost of cargo delivery and optimize the time of their transportation. Reducing inventory to the most optimal level and delivering goods exactly at a certain time is very much in demand for a modern dynamic economy. One of the most important tasks of the logistics chain is to coordinate the actions of all its participants. This is facilitated by the standardization of documents necessary for the transportation of goods, the establishment of direct contractual relations between all participants in the logistics chain, as well as the possibility of a single order for all services provided by all participants in the logistics chain. Effective development of transport logistics requires a systematic approach to solving emerging practical problems. The formation of transport and logistics clusters and the creation of multimodal transport and logic centers contributes to the development of the transport and logic sector. The transport system shows its maximum efficiency not only in the presence of modern transport infrastructure, but it also requires the presence of free competition in the market of transport and logistics services. The state policy in the field of regulation of the market of transport and logistics services should be aimed at their rationalization and reduction of costs correlated with them. Keywords: Logistics, transport logistics, transport and logistics cluster, logistics chain, cargo delivery

1 Introduction

The modern development of the world economy is characterized by broad processes of globalization, which affect the development trajectories of national economies of various countries. The international division of labor, the world market of services and goods contributed to an increase in trade turnover and an increase in the need for transportation of various types of goods.

The distances between producers and end consumers are increasing, while the requirements of customers who want to receive high-quality goods at low prices in the shortest possible time are increasing. In the absence of properly planned routes for the delivery of goods, control of the delivery process, the cost, as well as the delivery time, can significantly increase.

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According to [1], the use of flexible production systems allows for the production of small batches of goods, the storage of which does not require large storage facilities. However, there was a need to deliver products in small batches over long distances and in a short time.

Up to 50% of the cost can be spent on transportation, packaging and storage of goods. And this, in turn, affects the consumer preferences of this product. Therefore, the problem of reducing costs in the delivery of goods from producers to consumers is of paramount importance for the modern economy.

According to [2] logistics is important for optimizing the flow of goods, reducing production costs and reducing the cost of manufactured products.

According to [4] logistics makes it possible to comprehensively address issues related to the movement of goods from their place of production to the place of consumption.

According to [5], logistics eliminates contradictions between participants in the process of transporting goods, and ensures compliance with their economic interests.

According to [6], the main task of logistics is to optimize the process of cargo transportation, taking into account the timing and time of delivery in the right quantity and the required quality. For an effective flow of goods through logistics chains and channels, it is necessary to maintain and create optimal inventories, the right choice of packaging and form of delivery, vehicle, determining the optimal route and planning of commodity flows.

According to [7], the main tasks of transport and logistics companies are (Figure 1):

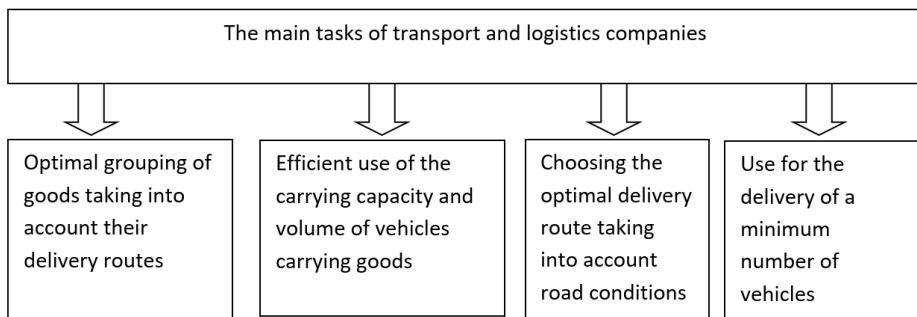


Fig. 1. The main tasks of transport and logistics companies.

According to [8] transport logistics is an effective tool that allows you to organize and control the transportation of goods. Transport logistics contributes to the formation of transport systems, optimizes delivery routes and promotes close correlation of the warehouse-transport process.

The authors [9] distinguish three main areas of activity of transport logistics (Figure 2):

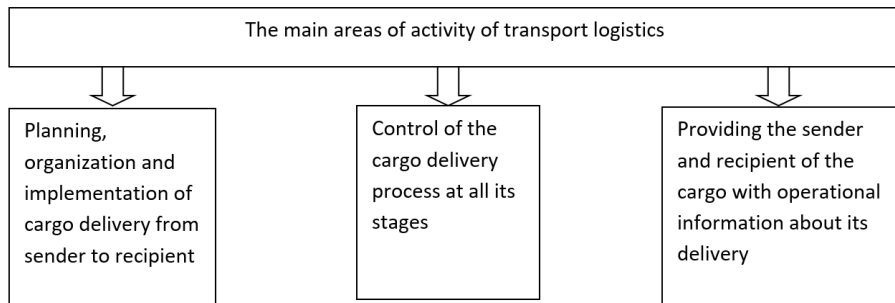


Fig. 2. The main areas of activity of transport logistics.

According to [10], the effective use of logistics chains allows trade and intermediary enterprises to reduce the costs of circulation, and manufacturing enterprises to reduce the costs of selling finished products, while simultaneously expanding the range of goods and improving the quality of customer service. Sustainable logistics chains contribute to closer integration of enterprises specializing in the delivery of goods, as well as enterprises that are engaged in the storage of goods. And this, in turn, stimulates investment activity in the optimization of logistics processes.

Within the framework of market competition, it is important to solve the problem of coordinating the delivery of cargo by various modes of transport, the transportation of goods through interstate transport bullfights. The modern logistics services market requires the creation of large logistics companies and the integration of existing ones.

According to [11], the concept of logistics based on the integration of all participants involved in the technological process of cargo delivery on the basis of achieving an economic compromise among them, provided that costs are reduced and uninterrupted delivery of goods is of priority importance.

The integration of participants in the transport and logistics services market contributes to the reduction of inefficient use of vehicles, the concentration of market participants on key competencies, the emergence of new approaches to the distribution of goods and the introduction of innovations

According to [12] logistics:

- 1) Promotes the expansion of sales markets
- 2) Increases the number of actual and potential consumers
- 3) Reduces the cost of production
- 4) Harmonizes the flow of business processes
- 5) Contributes to improving the quality of service to end users.

According to [13] clusters are, as a rule, geographically concentrated groups of enterprises operating in related areas and conducting joint activities.

According to [14], globalization promotes the emergence of business clusters that coordinate geographically to increase the efficiency of their functioning on the basis of a synergetic effect.

Business clusters can bring the greatest effect if they include transport infrastructure enterprises.

According to [15], it is especially advisable to create transport and logistics clusters in places of large passenger and cargo flows in the presence of rail, road, water and air transport in the vicinity of international transport corridors.

Transport and logistics clusters can have a significant impact not only on the activities of enterprises in the region, but also indirectly affect the state of the social sphere. The functioning of the transport and logistics cluster allows you to organize the delivery of goods "from door to door" by coordinating the actions of various carriers. The criterion of the quality of the transport and logistics cluster is the satisfaction of customer preferences.

According to [16], a transport and logistics cluster is a cluster formation that includes transport infrastructure, logistics market participants, and related sectors of the economy that carry out joint activities in the market of transport and logistics services.

According to [17], a transport and logistics cluster is a group of interdependent companies providing transport and logistics services.

According to [18], a transport and logistics cluster is an association of logistics links: transport hubs, transport corridors, logistics transport and distribution centers into a single system in order to obtain mutual benefits from joint activities as a result of a synergetic effect.

According to [19], a transport and logistics cluster is a group of geographically localized enterprises that carry out joint activities in the provision of transport and logistics services and specialize in the delivery, storage and maintenance of goods, as well as in the maintenance of transport infrastructure facilities.

According to [20], a transport and logistics cluster is the interaction of market entities engaged in the provision of transport and logistics services in order to optimize operating costs.

In our opinion, a transport and logistics cluster is a group of enterprises of various forms of ownership, state institutions and organizations located within a certain geographical region that carry out joint activities to provide transport and logistics services and benefit from joint activities due to the synergetic effect.

According to [21], a clear territorial localization of the transport and logical cluster is necessary, this will allow for more effective interaction with state institutions, and will also create prerequisites for attracting public and private investments in the infrastructure of the transport and logical cluster.

For the efficient functioning of a transport-logical cluster according to [22], its activities must comply with the following principles (Figure 3)

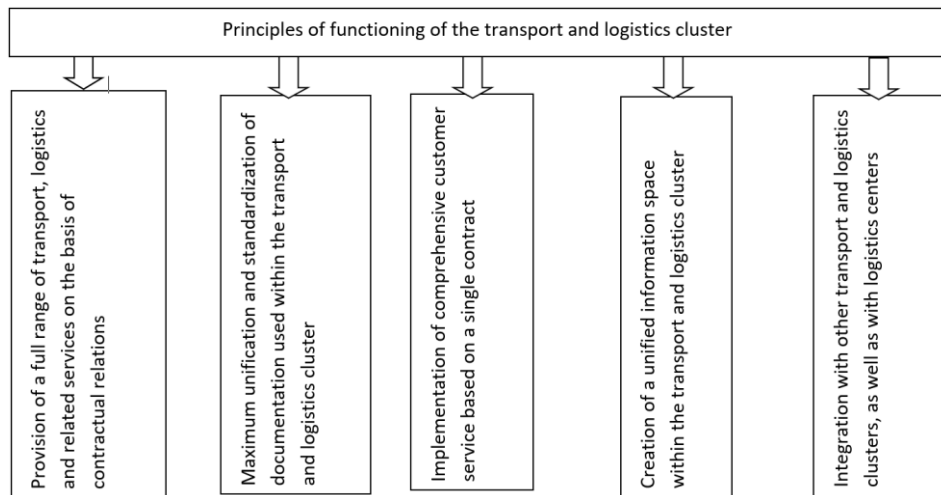


Fig. 3. Principles of functioning of the transport and logistics cluster.

World experience testifies to the effectiveness of the use of multimodal transport and logistics centers.

They are created around large cities in order to reduce the traffic of truck transport through the streets of the city, improve the environmental situation in the city, rationally use the city's land resources to accommodate warehouses, increase the level of efficiency of the use of freight transport, reduce the load on railway stations located in the city. Multimodal transport and logistics centers contain warehouses for cargo processing and storage, premises for customs procedures, bank representative offices, offices and administrative premises, a transport maintenance station, parking areas for vehicles. A multimodal transport and logistics center should have convenient entrances and can occupy an area of tens of hectares.

According to [23], the main tasks of multimodal transport and logistics centers are (Figure 4):

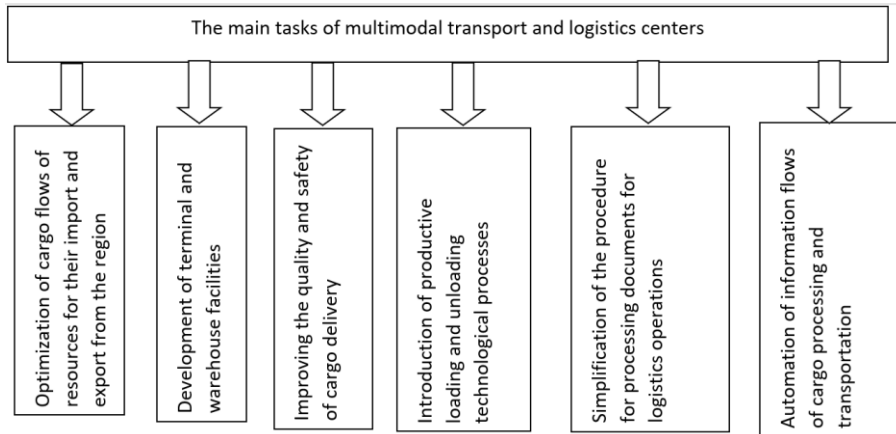


Fig. 4. The main tasks of multimodal transport and logistics centers.

2 Methods

In the process of carrying out this research work, the authors used an analytical method, which made it possible to consider the problems studied in the article to a certain extent in their unity and development.

Taking into account the goals and objectives of the study, the authors applied a functional-structural method of scientific cognition.

As a result of the study, the authors were able to consider a number of problems related to improving the efficiency of the transport and logistics sector.

3 Results

The creation of multimodal transport and logistics centers cannot replace transport and logistics clusters. Multimodal transport and logistics centers are focused primarily on working with large freight forwarding companies.

In turn, large freight forwarding companies are interested in large shipments of goods, since in this way they receive profit by expanding the scale of production. Multimodal transport and logistics centers inevitably contribute to the displacement of small players from the market, which in turn may negatively affect the state of free competition in the industry. Large carriers will primarily cooperate with well-known brands, since they will, as a rule, be the largest customers of transport and logistics services. As a result, the end consumer and small customers of transport and logistics services will suffer.

In our opinion, the task of the state is not only to create multimodal transport and logistics centers, but also to maintain existing transport and logistics clusters and promote their development.

The state should promote the introduction of modern information technologies by small carriers in the field of logistics, which will give them the opportunity to improve the efficiency of their work.

The introduction of logistics information systems by small carriers would allow them to monitor the movement of goods, promptly contact the driver, receive information about deviations from the route and schedule of cargo movement, monitor transport stops and much more.

The use of Internet technologies makes it possible to optimize transport routes and automate the process of managing road transport. Reducing logistics costs allows enterprises to reduce freight rates.

The second direction of increasing the efficiency of the functioning of multimodal transport and logistics centers and transport and logistics clusters is the state support of rail transport. Transportation by rail is more economical and harms the environment.

At the same time, the network of highways significantly exceeds the network of highways.

The state should stimulate freight transportation by rail by investing in the transport infrastructure of rail transport.

In our opinion, it is necessary to ensure the transportation of goods by rail between various transport and logistics centers, this will allow consignees and shippers to find for themselves the most optimal option for the price and speed of cargo delivery.

4 Discussion

The use of modern information technologies in transport logistics makes it possible to optimize the delivery time of goods and reduce the cost of their transportation.

Reducing inventory to an optimal level and delivering goods exactly at a certain time is very much in demand for a modern dynamic economy.

An important task of the logistics chain is to coordinate the actions of all its participants. This is facilitated by the standardization of documents necessary for the transportation of goods, the establishment of contractual relations between all participants in the logistics chain, the possibility of a single order for all services provided by all participants in the logistics chain

The development of transport logistics requires a systematic approach to solving emerging practical problems

The formation of transport and logistics clusters and the creation of multimodal transport and logic centers contributes to the transport and logic sector

The transport system shows its maximum efficiency in the presence of not only modern transport infrastructure, but it also requires free competition in the market of transport and logistics services.

5 Conclusions

The state policy in the field of regulation of the market of transport and logistics services should be focused on their rationalization and reduction of associated costs.

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