

THE RESEARCH OF ORGANISATION LOGISTICS SYSTEM QUALITY

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This article describes the theoretical foundations of the research of organization logistics system quality. The main theme of this research is the logistic system of JSC 'Belmagistralavtotrans'. In the course of the study, the indicators of the quality of the organization's logistic system were developed, as well as measures aimed at improving the quality of the organization's logistic system.

The problem of manufactured and sold products quality in the modern economy is increasingly coming to the fore. The solution is in the focusing the attention of enterprises which the quality management services are functioning for.

Quality that meets the requirements of consumers and the achievements of scientific and technological progress, determines the competitiveness of the enterprise, and at the same time commercial success and sustainable financial condition. Competition makes us constantly improve the quality of goods and services and develop the operational and strategic policy in the quality field. Products of good quality provide sales and reimbursement of costs incurred, so the activities aimed at achieving competitive quality, are an integral part of the production and commercial activities of the enterprise. The role of quality in overcoming crisis situations both in the economy as a whole and in individual enterprises is great. Crisis management should contain measures of an innovative nature in the field of quality, because the quality at optimal cost, helps to overcome the crisis, financial recovery of the enterprise. An important role in solving the quality problem is played by the state, creating a regulatory framework for standardization and certification, ensuring the protection of consumer rights [1].

Increasing the complexity of products has led to an increase in the number of estimated properties. The center of gravity has shifted to a comprehensive test of the functional abilities of the product. In terms of mass production quality was considered not from the standpoint of a single instance, but from the standpoint of the quality standard of all products produced in mass production. With the development of scientific and technological progress which resulted in the automation of production there were automatic devices to control complex equipment and other systems. There was a concept of "reliability". Thus, the concept of quality is constantly evolving and refined.

The relevance of the quality problem is constantly increasing, which is a consequence of the objective development of productive forces at the present stage of development of society which is characterized primarily by the following:

1. Further development of competition. When supply exceeds demand, the quality becomes the most important factor of competitiveness.
2. The rapid development of science and technology, which leads to a significant increase in the complexity of the products, the quality of which ensures its effective use and operation [2].
3. The complexity of production processes as a result of the use of modern equipment, mechanization, automation and computerization, which requires a qualitatively new approach to the organization of production and ensures high quality of products.
4. Expansion of branch, inter-branch and international specialization and cooperation which can be effectively carried out only in the conditions of ensuring high quality of production and accessories.
5. The growth of production and the increase in the number of industrial enterprises.
6. The product quality largely meets the material and spiritual needs of the person, the success or failure of companies in their satisfaction.
7. Sharp aggravation of the ecological situation, the depletion of natural resources. The relevance of this direction is due to the fact that the development of material production is accompanied by a continuous increase in the amount of waste. To remove them, an average of 8 – 10% of the cost of production is spent, on a large scale are removed from the turnover of land, etc. which is to achieve the optimal level [3].

It is noticeable that the problem of assessing the quality of logistics systems is currently important both for the individual organization and for the economy as a whole. In the activities of enterprises improving the

quality of logistics systems is an urgent task, the solution of which allows to achieve positive results of economic indicators. A high assessment of these indicators depends on changes in their growth rates, which need to be monitored. The decline in the growth rate of economic indicators, as a rule, is associated with the failure to meet the requirements for quality and parameters, the gradual slowdown in the level of competence of staff, the professional level of service providers, awareness of participants in the logistics process, the degree of satisfaction of market needs in specific types of logistics services, with the difficulties of finding sustainable mechanisms for quality and cost management.

In accordance with the scientific results of economic research, the procedure for measuring the quality of logistics systems is not sufficiently specified and requires the development of approaches in addressing issues related to the development of effective methods of quality assessment, management of a set of logistics services, the assessment of logistics services, the regulation of the quality of logistics systems. The efficiency of the logistics system increases if the problems of assessing its quality are solved. Management of parameters and improvement of the system elements are the primary actions in achieving this goal.

Quality is a complex concept that characterizes the effectiveness of all aspects of activity: strategy development, organization of production, marketing, etc. the most important component of the entire quality system is the quality of products.

Quality from beginning to end is directly related to the economy. Almost all decisions in the field of quality, quality improvement programs and quality management activities are associated with economic costs and make sense if they lead to an acceptable economic effect for the enterprise; especially in conditions of restrictions of raw materials, energy, labor and other material resources the most effective way to improve production efficiency is to improve product quality.

The logistics concept of quality provides, on the one hand, the application of the principles and methods of logistics for quality management, and on the other hand, the formation of the logistics system of the relevant organization and adequate management effects on quality as an object of management. Therefore, such a concept should organically combine logistics and quality.

Improving the quality and complexity of logistics services largely depends on the level of development of logistics infrastructure and efficiency of its use. In order to optimize the infrastructure of logistics centers, it is necessary to place them in transport hubs, taking into account commodity and transport flows [4].

It is clear from these observations that it is necessary to develop a system of indicators that would fully provide information on the quality of the organization logistics system. There is a need for a single set that would assess various quality indicators, ranging from the geography of transportation and staff skills to determining the time of the information's flow.

The high dynamics of the external environment dictates its requirements for the logistics systems of the enterprise. It is particularly important to achieve a high quality of the logistics system now. In each logistics system periodically there are processes that reduce the quality of the system as a whole. Therefore, in order to eliminate these processes, special measures are taken, specialists are involved to optimize the logistics of the enterprise in order to improve its quality.

In connection with the need to develop a system of quality indicators of the logistics system of the organization this work was written with the purpose to study the quality indicators of the organization logistics system, as well as ways to improve it on the example of JSC 'Belmagistralavtotrans'. To achieve this goal, the theoretical foundations of the study of the quality of the organization logistics system were described; the logistics system of JSC 'Belmagistralavtotrans' was studied; the quality indicators of the logistics system of the organization were developed as well as proposed activities aimed at improving the quality of the logistics system of the organization.

In the course of the study the following quality indicators were determined by the links of the logistics system of the organization (Table 1):

Table 1 – Quality indicators

Link of logistics system	Indicator
1	2
1. Procurement	1) supplier Reliability; 2) Frequency of supply; 3) fulfilment of supply obligations; 4) rhythm (regularity of the supply); 5) completeness of delivery.

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Continued Table 1

1	2
2. Transportation	1) geography of transport; 2) rolling stock characteristics; 3) means of communication and computers; 4) staff qualifications; 5) reducing the cost of transportation.
3. Storage	1) logistic service; 2) modern means and communication systems; 3) staff qualifications/
4. Distribution	1) organization and implementation of procurement; 2) supply control; 3) procurement budget preparation.
5. Production	1) quality of sources and raw materials; 2) quality of design and engineering; 3) quality of manufacturing (processing); 4) control of finished products.
6. Information	1) the motion of the information flow; 2) the direction of movement; 3) credibility; 4) transmit and receive speed; 5) flow rate, etc.

For the analysis of the logistics system links the list of indicators of logistics system quality of the organization is presented in Table 2.

Table 2. – Quality Indicators of the logistics system of JSC «Belmagistralavtotrans»

Quality indicator	Explanations	Alteration
1	2	3
1) transportation geography	Belarus, Germany, France, Netherlands, Belgium, Denmark, Austria, Italy, Switzerland, Spain, Poland, Slovenia, Czech Republic, Slovakia, Hungary, Russia, Ukraine, Moldova, Lithuania, Latvia, Estonia, Portugal, Kazakhstan, etc.	The geography of transportation is planned to expand.
2) characteristics of rolling stock	The average age of the vehicle fleet is 3.1 years. 77% of cars meet Euro-5 standard, 15% - Euro-6 standard.	Compared to 2013, in 2014 the days in operation have increased by 15.8%. Hours of work have increased by 19 %. The total mileage of the car has increased by 19.4%. The volume of traffic has increased by 3.3%. Freight turnover has increased by 10.7 % . In 2014, the average daily mileage has increased by 3.1%. This indicator was influenced by the increase in the proportion of downtime in the outfit by 12.8% and the increase in the average duration of work by 10.4%. Total load capacity increased by 14.6%. The coefficient of production of cars on the line increased by 6.7%.
3) communications and computers	Modern computer equipment and Internet technologies are widely used. All vehicles are equipped with GSM-communication and satellite GPS-navigation systems, through which information is exchanged with drivers and the location of the vehicle is constantly monitored.	It is planned to use updates to existing systems.

Continued Table 2

1	2	3
4) personnel qualification		In 2014, the number of employees increased by 20 people compared to 2013. The number of employees who were trained in 2014 compared to 2012 decreased by 35 %. The largest proportion of workers who improve their skills are workers. And since 2010, their number has increased in 2012 by 3 times and in 2014 by 2 times.
5) the decrease in cost of transportation		In 2013, the profit increased by 7.15 % compared to 2012. In 2014, the profit decreased by 7.99 % compared to 2013. The greatest specific weight in the structure of total cost are such factors as salary 51.23%, fuel 28.74%.
6) logistics service	<p>The service level is calculated by the following formula:</p> $n = \frac{m}{M} \cdot 100\%, \quad (1)$ <p><i>n</i> - service level; <i>M</i> - quantitative assessment of theoretically possible volume of logistics services; M=80 <i>m</i>-quantitative assessment of the actual volume of logistics services, m=15</p>	<p>Level of service:</p> <p>15/80·100% = 18.75%</p>

In conclusion, it should be noted that the quality of the logistics system of JSC 'Belmagistralavtotrans' is at a high level. The company is constantly working on the development and improvement of methods and means of enterprise management aimed at ensuring the required level of quality. To improve the quality of the logistics system of the analyzed enterprise, it is possible to offer the development of the logistics service of the organization. Based on the analysis of the logistics system of JSC 'Belmagistralavtotrans' and its quality, we can offer a solution for the development of container transportation of this organization with China. This procedure will lead to additional funds raised in the country (government agencies, transport companies, ports and other participants in the transport process), in particular JSC 'Belmagistralavtotrans'. For the Belarusian client, this delivery option will also be advantageous, despite the higher through rate compared to other options, since the delivery time is minimal, which will lead to a rapid turnover of the product in the markets, and an increase in the profit of the consignee. Thus, the quality indicators of the logistics system of the organization were developed and measures aimed at improving the quality of the logistics system of the organization were proposed.

As a result of the analysis and generalization of scientific publications, both domestic and foreign experts in the field of logistics, it was found that the rationale for the problem of assessing the quality of logistics systems is theoretical, methodological and applied nature, which confirms the need for the formation of an appropriate system based on modern methods and models. Therefore, the development of a system for assessing the quality of logistics systems, implying the formation of scientific approaches to its functioning, is an important area of scientific research.

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