Nadiia Mytrofanova
Separate Subdivision „Khmelnitskyi Professional College of Trade and Economics of Kyiv State University of Trade and Economic”, Ukraine
ORCID ID: https://orcid.org/0000-0002-8881-3932

IMPROVEMENT OF THE INFORMATION LOGISTICS SYSTEM AT THE ENTERPRISE (ON THE EXAMPLE OF PRIVATE ENTERPRISE "BALTIKA", KHMELNYTSKYI, UKRAINE)

Introduction

Today, the problems of logistics are not solvable, and they are urgent, because the success and competitiveness of any organization directly depends on the constant interaction of all subsystems of the enterprise, including the logistics one.

Quarantine due to the pandemic, martial law forced the economy to adjust to a different mode of operation. However, there are areas that cannot completely switch to remote mode. Even logistics cannot be completely rearranged yet.

Since logistics combines production, sales, supply, and storage into one process, with the transition to a remote mode of operation, the delivery of goods continues, which puts the problem of finding ways to improve the logistics activities of enterprises in the first place.

In the modern conditions of the market economy, enterprises face the problem of choosing the most effective means of management. The growth of the logistics strategy in the formation of the company's strategy gives grounds for the use of logistics management, which denotes management in logistics systems based on the theory of logistics. And this requires a detailed study of both the essence of this concept and the possibility of integrating theoretical knowledge into the construction of an effective enterprise management system.

Any movement of material resources is associated with the transfer of information. It is labor-intensive not only to manage informational logistics flows at the appropriate level, but also to assess the effectiveness of its functioning. Thus, in the EU and the USA, logistics costs make up 8-10% of the total, while in Ukraine - 35%. Since the efficiency of logistics flow management at the enterprise is a determining factor in the formation of logistics costs.

A number of domestic and foreign scientists, namely E.V. Krykavskyi, V.I. Sergeev, L. Bilousov, V. Ukraintsev, and many others. Such modern scientists as: M. V. Korin, V. G. Banko, Paul Meyerson, Peter Baker, Alan Rastor,
Phil Croucher, Antoine Henri (Henrykh Veniaminovych), Jomini and others are engaged in the research of logistics, including information.

The importance of the information logistics system is revealed in the fact that it is the basis of the management subsystem of the organization of the appropriate level, and the effectiveness of the management system as a whole depends on the degree of filling of the information system, quality and timeliness of information. That is why information support of logistics processes is one of the most important problems of modern management. Thus, information becomes a production logistics factor. Thanks to it, the storage of both materials and finished products can be improved, transportation time can be reduced thanks to the coordination of all elements of the transport chain.

**Purpose, subject and method of research**

The purpose of the study is to study the theoretical foundations and develop practical recommendations for improving the information logistics system of the Private Enterprise "Baltika".

The subject of the research is a set of theoretical and scientific-methodical provisions regarding information logistics management of the private enterprise "Baltika", Khmelnytskyi.

Research methods used in the process of studying the management of logistics activities of the enterprise:
- methods of analysis and generalization - when processing literary sources, Internet sources related to the research topic;
- method of structural analysis - for researching the information logistics system at the enterprise;
- methods of systematization - during the development and implementation of directions for improving the information logistics system.

**Findings**

Today, the problems of logistics are not solvable, and they are urgent, because the success and competitiveness of any organization directly depends on the constant interaction of all subsystems of the enterprise, including the logistics one.

Quarantine due to the pandemic, martial law forced the economy to adjust to a different mode of operation. However, there are areas that cannot completely switch to remote mode. Even logistics cannot be completely rearranged yet. Since logistics combines production, sales, supply, and storage into one process, with the transition to a remote mode of operation, the delivery of goods continues, which puts the problem of finding ways to improve the logistics activities of enterprises in the first place.

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logistics strategy in the formation of the company's strategy gives grounds for the use of logistics management, which denotes management in logistics systems based on the theory of logistics. And this requires a detailed study of both the essence of this concept and the possibility of integrating theoretical knowledge into the construction of an effective enterprise management system.

The prerequisite for the development of logistics management is that in connection with the formation of market relations in the post-Soviet space, a new direction - logistics - appeared and began to develop actively. The reasons for the growing interest in logistics are the growing needs of economic and business development.

According to the main processes of economic activity of enterprises, such main types of logistics are distinguished, such as: logistics of supply, procurement, production, and sales logistics. Each of the above-mentioned types of logistics is characterized by separate logistics processes, for the effective management of which a number of methods and tools of logistics activity are used, which are indicated in the table. 1.

**Table 1. CHARACTERISTICS OF TYPES OF LOGISTICS WITH SEPARATION OF LOGISTICS PROCESSES AND TOOLS**

<table>
<thead>
<tr>
<th>Type of logistics</th>
<th>The purpose of management</th>
<th>Logistics processes</th>
<th>Tools and methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply logistics (transport)</td>
<td>Ensuring the technological unity of the transport and storage process</td>
<td>Transport management; determination of rational delivery routes; coordination of the transport and production process</td>
<td>ABC and XYZ analysis; &quot;LT&quot; system; method of cluster analysis</td>
</tr>
<tr>
<td>Procurement logistics (purchasing)</td>
<td>Full satisfaction of production needs with maximum possible economic efficiency</td>
<td>Purchase of raw materials and materials; planning of relations with the supply market; determination and establishment of procurement terms</td>
<td>ABC and XYZ analysis; &quot;LT&quot; system; &quot;KANBAN&quot; system; The MOV method</td>
</tr>
<tr>
<td>Production logistics (domestic production)</td>
<td>Optimization of material flows within enterprises that create material goods or provide material services</td>
<td>Production planning based on forecasts of needs for finished products; organization of management of production technological processes; quality control;</td>
<td>Method of full costs; ABC and XYZ analysis; &quot;RT system&quot;; &quot;KANBAN&quot; system</td>
</tr>
<tr>
<td>Production logistics (domestic production)</td>
<td>Ensuring the organization of the distribution of manufactured products, covering the entire chain of the distribution system; marketing, transportation.</td>
<td>Management of transport, storage and other operations; organization of sales processes</td>
<td>Formation of samples (standards); &quot;LT system&quot;</td>
</tr>
</tbody>
</table>
Analyzing table 1 it can be concluded that the management of logistics processes in the activities of enterprises is implemented using a number of methods and tools, the most common of which are the “JIT system”, “KANBAN”, ABC and XYZ analysis.

JIT - Just in Time - delivery system just in time; The most common logistics system is the “just-in-time” (JIT) system, which appeared in Japan in the late 1950s. The main idea of this logistics concept is to exclude stocks of materials, components and semi-finished products in the production process, the flows of material resources are synchronized with the need for them, which, in turn, is determined by the production schedule for the release of finished products. The movement of material flows is organized in such a way that all materials, components and finished products are delivered in the required quantity and at the time when they are needed by the links of the logistics system, in order to minimize the costs associated with the creation of stocks.

KANBAN is a Japanese production logistics system. The KANBAN logistics system is a method that is aimed at meeting the needs of customers by independently managing production according to the principle of receipt. The material flow, meanwhile, is directed forward (from the producer to the consumer), while the information flow is directed backward (from the consumer to the producer). Constant interventions of the central management are superfluous with this system [12]. The KANBAN system is implemented at such enterprises as General Motors, Massey-Ferguson, Renault.

ABC-XYZ - inventory management systems. The application of the ABC-XYZ-analysis technique is carried out sequentially in three stages, which include conducting ABC-analysis, XYZ-analysis and combining the results of the two stages into the ABC-XYZ matrix. The essence of the ABC-analysis method is to divide the efforts to control stocks into stocks that require constant control and stocks for which it is sufficient to carry out control with a periodic frequency by dividing the latter into groups according to the classification feature provided by this method. ABC analysis makes it possible to determine which types of goods should be stored in the central warehouse of the enterprise, because if the enterprise has several warehouses, the amount of insurance stock decreases when goods with a small volume of sales are placed in a smaller number of storage places. Despite the increase in transport costs, savings from reducing stocks in this case are more significant [12]. Ukrainian scientist E.V. Krykavskyi uses the integrated ABC-XYZ analysis as a basis for choosing the concept of transportation and storage of goods in delivery, i.e. the choice of direct/indirect route of the goods, the size of storage areas, the need for storage depending on the classification of goods and the characteristics of their use, the choice of the type of transport.

The essence of XYZ-analysis consists in structuring the consumption of goods according to the factor of stability of consumption and the possibility of
predicting instability. The matrix projection of the integrated ABC and XYZ analysis makes it possible to determine the level of consumer value (high/medium/low) and the level of reliability of the forecast due to the stability of consumption. For the completeness of the analysis of stocks, enterprises carry out refinements according to the XYZ methodology, the main purpose of which is to study the stability of indicators [12]. If the ABC analysis makes it possible to determine the contribution of a specific element to the final result, then the XYZ analysis determines deviations and instability of sales [12]. That is, ABC analysis shows which product is profitable, which customers bring income, XYZ analysis indicates the regularity of sales (how often customers buy the product).

No modern enterprise can exist stably today without rapid exchange of information both internally (between departments and employees) and externally (with customers, suppliers, etc.). Information is one of the key resources without which effective activity is impossible. Entrepreneurial success largely depends on the availability of necessary and sufficient information about the state of controlled processes, the speed of its transformation into directives, plans, projects and actions. The study of information as a function of enterprise management in market conditions provides practice-proven proposals for exiting with minimal risks for positive commercial results, including logistics activities [11]. This is especially relevant in logistics companies that have a large network of branches ("Nova Poshta", "Ukrposhta", "In-time", "Mist-Express") or a large number of vehicles (TTK, Prime, "Pan Logistics"), which must be effectively managed.

With all the variety of novelties in the field of information, the following are especially important for logistics:

1) Electronic data exchange.

Electronic data exchange systems ensure the circulation of standardized documents between computers of different companies and replace such traditional forms of communication as mail, couriers and even faxes.

2) Artificial intelligence systems.

Artificial intelligence (AI) is another type of information technology that has found application in logistics. The general term artificial intelligence refers to a group of technologies aimed at reproducing the features of human thinking in computers.

3) Bar coding and scanning technology.

Bar coding and electronic code reading facilitate the processes of data collection and information exchange. Although the introduction of these identification technologies requires considerable capital investment, the intensification of domestic and international competition pushes shippers, carriers, wholesale and retail trade enterprises to switch to automatic identification systems, which allow almost error-free and prompt tracking of the movement of goods and cargo.
Global logistics operations allow companies to achieve market growth, significant economies of scale and increased profitability. In the global market, the role of logistics is strengthening and the importance of logistics management is growing.

Therefore, the improvement of communication means significantly increases the efficiency of information technologies in logistics. Data collection and information sharing are critical to logistics management. The management of the logistics support of the enterprise is a necessary condition for improving the quality of management of financial, information, goods and other flows in terms of the formation of incoming (income) and outgoing expenses) flows for operational activities, since any element of the logistics system has an impact on the formation, speed and consistency of data flows.

Information support in logistics significantly affects the activity of the enterprise. Since information has become an integral factor in logistics, it needs to be given more attention due to the fact that information technology is developing rapidly and information is increasingly becoming a decisive factor. The study of this topic was conducted on the basis of the private enterprise "Baltika" (hereinafter referred to as "Baltika" PE).

The enterprise began its work with the production of 5 types of products and with a total number of seven employees, the total area of the purchased premises was 640 square meters. Every year, the range of manufactured products increased, new technical conditions were developed, the market of demand for fish products was studied, and new technologies were introduced. Production The addition of new premises totaling 1,260 square meters was completed, which enabled the company to open new workshops, ensure the creation of additional jobs, and increase the production of products and the assortment of the Ukrainian manufacturer.

The enterprise has accredited chemical and bacteriological laboratories that conduct strict control over production and compliance with all sanitary standards, which ensures the production of high-quality and competitive products. The enterprise has all the conditions for storing fish products, as there are 2 low-temperature freezers of 150 square meters. m. with a capacity of 120 tons, and refrigerators for finished products of 150 square meters. m. with a capacity of 2,000 tons. Equipped according to the latest technical and sanitary requirements. PE Baltika operates in the markets of Khmelnytskyi, Ternopil, Chernivtsi, Vinnytsia, Ivano-Frankivsk and Zakarpattia regions. Products are delivered by the company's own transport, all vehicles have sanitary passports.

The main place in the system of commercial activity is occupied by information provision of commercial activity. The purpose of information provision of commercial activity is to provide timely, sufficient, reliable information to the subjects of relations of the commercial activity system for making decisions that contribute to the achievement of the goal of commercial
activity. The information support system for commercial activity begins with the enterprise's electronic document flow system. According to analysts' calculations, the time of interaction between divisions is distributed as follows: 20% - for the execution of the work and 80% - for the transfer of its results to the next executor.

In order to analyze the efficiency of the current information logistics system, a PEST and SWOT analysis of the enterprise was conducted at the enterprise of PE Baltika.

To conduct a PEST analysis, we will analyze the external environment of PE "Baltika" in order to determine opportunities and threats for the enterprise based on such (indirect) factors as social, technological, economic, environmental and political factors (Table 2).

### Table 2. PEST ANALYSIS DATA OF "BALTIKA" PE

<table>
<thead>
<tr>
<th>The name of the factor</th>
<th>The name of the factor</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Social factors</td>
<td>A decrease in the income of the population leads to a decrease in the demand for products</td>
<td>Recruit highly qualified employees</td>
</tr>
<tr>
<td>Technological factors</td>
<td>The increase in the prices of resources leads to an increase in the price of products</td>
<td>Save resources (Purchase of energy-saving equipment)</td>
</tr>
<tr>
<td>Technological factors</td>
<td>State policy negatively affects the work of financial and economic services.</td>
<td>The development of the lending system allows the enterprise to attract financial resources for its development</td>
</tr>
<tr>
<td>Environmental factors</td>
<td>State activity in the field of nature protection, which entails an increase in the price of all types of energy and natural resources</td>
<td>The development of the lending system allows the enterprise to attract financial resources for its development</td>
</tr>
<tr>
<td>Political factors</td>
<td>the policy of protecting the domestic consumer from the import of low-quality products</td>
<td>The stability of the political situation affects the dynamic development of the country's economy</td>
</tr>
</tbody>
</table>

So, among the external (indirect) factors that have the greatest influence on the operation of the enterprise are economic and political factors. As a result of the analysis, it can be concluded that the changes that are most likely to occur and affect the activity of the enterprise as a whole are in the technological and economic environment.

Therefore, the company should pay more attention to these factors, as the external environment helps the company to function properly.
In order to "survive" successfully, the enterprise must be able to predict what difficulties may arise in its path in the future and what new opportunities may open up for it.

It is possible to evaluate the strengths and weaknesses of the market and determine the ways of further development of PE "Baltika" by conducting a SWOT analysis. In order to determine the opportunities and threats that arise during the implementation of the activities of PE "Baltika", as well as its strengths and weaknesses, a SWOT analysis table was built (Table 3).

**Table 3 SWOT ANALYSIS OF PE "BALTICA"**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weak sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Stable financial position.</td>
<td>2. There is no attachment to the brand,</td>
</tr>
<tr>
<td>3. Qualified personnel.</td>
<td>3. System of incentives for regular customers</td>
</tr>
<tr>
<td>4. Program of incentives and motivation for employees.</td>
<td></td>
</tr>
<tr>
<td>Opportunities</td>
<td>Threats</td>
</tr>
<tr>
<td>1. Development of Internet trade.</td>
<td>1. Price competition.</td>
</tr>
<tr>
<td>2. Emergence of new partners.</td>
<td>2. Growth of the share of competitors on the market.</td>
</tr>
<tr>
<td>3. Exit of competitors from the market.</td>
<td>3. Competitors on the international market.</td>
</tr>
<tr>
<td></td>
<td>4. Increasing prices for technologies.</td>
</tr>
</tbody>
</table>

Analyzing the data of the SWOT analysis, the following conclusions can be drawn. Weaknesses of the activities of PE "Baltika" include: high prices for goods, because the supply of fish products to some areas has stopped, there is no attachment to the brand, and a system of incentives for regular customers.

At the same time, the strengths are that there is a factor of brand recognition, a stable financial position, qualified personnel, and an incentive and motivation program for employees.

One of the main threats to PE "Baltika" is price competition, the growth of the share of competitors in the market, competitors in the international market, and the growth of technology prices. So, the economic condition of the state related to COVID 19 and the introduction of martial law on the territory of Ukraine have become threats to transportation at the moment, which means a decrease in the number of consumers.
Among the main opportunities for PE "Baltika" are the development of Internet trade, the appearance of new partners, and the exit of competitors from the market.

Thus, the process of evaluating the current system of information logistics and estimating logistics costs using SWOT analysis methods covers all important areas of the company's activity, they exclude the duplication of individual indicators, and allow you to quickly and objectively get a "picture" of the company's position on the market.

So, at present, all factors of the external and internal environment of the enterprise contribute to its successful development at PE "Baltika". However, even in this situation, it is necessary to concentrate the company's efforts in order to maintain the achieved positions on the market. To do this, it is necessary to strive to eliminate factors that negatively affect the strong position of PE "Baltika".

The criteria chosen by the company require the introduction of advanced customer service technologies into the logistics system, which leads to an increase in costs associated with the introduction of the latest information technologies in the process of transportation, storage, and stock management of PE Baltika.

The term "strategy" is defined as a plan to achieve a goal. So, as the main goal of any enterprise is to reduce costs, the main development strategy of PE "Baltika" should be aimed precisely at this (Table 4).
Table 4 ANALYSIS OF THE MAIN LOGISTICS STRATEGIES OF PE "BALTIKA"

<table>
<thead>
<tr>
<th>№</th>
<th>The name of the strategy</th>
<th>Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Maximization and improvement of logistics service</td>
<td>Effective customer service system, compliance with quality standards for product sales.</td>
</tr>
<tr>
<td>3</td>
<td>Maximization of income and profit</td>
<td>Optimization of the logistics system, aimed at increasing the volume of implementation.</td>
</tr>
<tr>
<td>4</td>
<td>Increasing the competitive advantages of the enterprise</td>
<td>Increasing the level of quality of logistics service.</td>
</tr>
<tr>
<td>5</td>
<td>Logistics outsourcing</td>
<td>Selection of the optimal number of intermediaries in the channels of movement of goods. Optimization of the logistics system due to the involvement of new intermediaries.</td>
</tr>
</tbody>
</table>

Minimization of costs and investments in the logistics network can be singled out as the main strategy. Among other, somewhat less common logistics strategies, there are those based on certain aspects of the company's activity, for example:

- a logistics strategy based on reducing the time of logistics operations (in particular, as part of the implementation of this concept, they strive to ensure the fastest delivery) and focuses on eliminating unnecessary time spent in the supply chain;

- a logistics strategy based on increased productivity, i.e. the maximum possible use of available resources;

- a logistics growth strategy based on the desire to save costs by increasing the scale of operations, in particular, by expanding the service of geographical areas, increasing market share, etc.

Therefore, in combination with other strategic measures to optimize logistics costs, PE "Baltika" will be able to improve the results of its financial and economic activities, and the information logistics cost management system will become more functional.
Conclusions

Information support of the logistics process is quite important and is important in the management of information flows and resources. Information logistics connects supply, production and sales. It covers the management of all processes of movement and storage of goods at the enterprise, allowing to ensure timely delivery of goods (in the required quantities, completeness, quality) to the final consumer with minimum costs and maximum service.

The strategic areas of improvement of the information logistics system at PE "Baltika" based on the conducted analytical research are:
- orientation to the external environment;
- analysis of information in conditions of representative probability;
- predictive nature of information processing results;
- handling large volumes of analytical and financial information due to the high probability of subjective interpretation of informative indicators;
- collection, processing and analysis of non-financial indicators.

The improvement of the information logistics system at PE "Baltika" should be based on the following principles:
- the goals of the operation of the logistics information system should be formulated in terms of value and customer service;
- to assess the effectiveness of information support for the management of logistics business processes of the enterprise, indicators should be used that characterize aspects of the value of products, which are a priority for a specific purchasing segment of the market.

Therefore, in combination with measures to optimize logistics costs, PE "Baltika" will be able to improve the results of its financial and economic activities, and the information logistics cost management system will become more functional.

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Abstract
The rapid development of information and communication technologies, the growth of competition in the domestic market and the increase in consumer demands are today the main prerequisites for revising the company's strategy for the formation of a more effective system for ensuring its competitiveness, more fully meeting the needs of consumers. One of the key tools is logistics and the creation of logistics systems.
A logistics system can function only if information circulates in it. Any management process is, first of all, an information process that involves the collection, transfer, processing, analysis of information and the adoption of relevant management decisions.

The problem of improving the quality of logistics services is more and more urgent as the production sphere develops, the transport component grows, population migration, and the need to overcome territorial remoteness.

**Keywords:** logistics, information, information logistics, management, management, logistics flows, logistics efficiency, strategy, competitiveness

*JEL Classification: M21,*