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Ukrainian-American Concordia University

Faculty of Management and Business

Department of International Economic Relations, Business & Management

MASTER'S QUALIFICATION WORK

Logistical management of domestic company during war time (based on LLC Epicentr-K" case)

Master student of
Field of Study 07 – Management
and Administration
Speciality 073 – Management
Educ. program – Business Administration

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Abstract Topic - Logistical management of domestic company during war time (based on LLC “Epicentr-K” case)

This work is primarily concerned with exploring the The master thesis which provides a detailed examination of the logistical management strategies employed by domestic company.This abstract offers a concise overview of the key components and findings of the research.The introduction sets the stage by highlighting the significance of logistical management in the context of war time and introduces the scope of the research.

Challenges Faced by Domestic Companies This section explores the specific challenges encountered by domestic companies when managing their logistics during war time. It delves into disruptions in supply chains, transportation, and communication networks, emphasizing the impact of these challenges on operational efficiency.Insights and Implications This section presents the insights derived from the research, highlighting the resilience and resourcefulness of domestic companies in navigating logistical chalenges during war time. It also underscores the significance of strategic preparedness and flexibility in the face of uncertainty.

Through its thorough examination of logistical management during war time, this diploma work contributes to the existing body of knowledge in the field, offering practical implications for domestic companies operating in challenging environments.

Keywords: logistical management, domestic company, challenging environments

Анотація

Ця робота в першу чергу присвячена дослідженню логістичного управління в кризисних умовах. Дипломна робота містить детальний аналіз стратегій управління логістикою, що використовуються вітчизняною компанією. Ця анотація пропонує стислий огляд ключових компонентів і результатів дослідження. Вступ закладає основу, підкреслюючи значення матеріально-технічного менеджменту в умовах воєнного часу та знайомить із сферою дослідження.

Виклики, з якими стикаються вітчизняні компанії У цьому розділі розглядаються конкретні проблеми, з якими стикаються вітчизняні компанії під час управління логістикою під час війни. У ньому розглядаються збої в ланцюгах постачання, транспорті та комунікаційних мережах, наголошується на впливі цих викликів на операційну ефективність. Уявлення та наслідки У цьому розділі представлені висновки, отримані в результаті дослідження, підкреслюючи стійкість і винахідливість вітчизняних компаній у доланні логістичних проблем під час час війни. Це також підкреслює важливість стратегічної готовності та гнучкості в умовах невизначеності.

Завдяки ретельному дослідженню управління матеріально-технічним забезпеченням у воєнний час ця дипломна робота доповнює наявний обсяг знань у цій галузі, пропонуючи практичні наслідки для вітчизняних компаній, які працюють у складних умовах.

Ключові слова: логістичний менеджмент, вітчизняна компанія, складні умови

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Head of Department _____

__Prof. Zharova L.V._____
"24" січня 2024

TASK
FOR MASTER'S QUALIFICATION WORK OF STUDENT

Danyl Hromylo
(Name, Surname)

1. Topic of the master's qualification paper
Logistical management of domestic company during war time (based on LLC Epicentr-K" case)

Consultant of the master's qualification paper Liudmyla Sierova PhD of Economics, Associate Professor
(surname, name, degree, academic rank)

Which approved by Order of University from ***"24" September 2023 № 24-09/2023-1к.***

2. Deadline for master thesis submission "***20" December 2023 .***
3. Data-out to the master thesis _____
Materials from internship received during consultation with representatives of the company. Information from open resources in the Internet, official reporting of financial and economic activities of the enterprise.

4. Contents of the explanatory note (list of issues to be developed) *There are three main topics/tasks for the thesis: theoretical and methodical bases of strategic planning; research of the organizational and economic mechanism of strategic planning of the enterprise; development of measures to improve the strategic planning process of the enterprise.*
5. List of graphic material (with exact indication of any mandatory drawings)

Graph for illustrating the dynamic of financial indicators of the company activity and schemes for visualization the organization management system of the company.
_____
_____

6. Consultants for parts of the master's qualification work

Part of the project	Surname, name, position	Signature, date	
		Given	Accepted
1			
2			
3			

7. Date of issue of the assignment

Time Schedule

№	The title of the parts of the qualification paper (work)	Deadlines	Notes
1.	I part of master thesis	*10.10.2023*	*In time*
2.	II part of master thesis	*10.11.2023*	*In time*
3.	III part of master thesis	*10.12.2023*	*In time*
4.	Introduction, conclusions, summary	*20.12.2023*	*In time*
5.	Pre-defense of the thesis	*22.12.2023*	*In time*

Student _____
(signature)

Consultant _____
(signature)

Conclusions:_____

The master thesis of Danyl Hromylo is relevant and devoted to the logistics system of the enterprise. The reviewed master thesis consists of content, introduction, 3 sections, conclusions, and recommendations. The content of the paragraphs is fully complied with the parts' titles and the topic of the master thesis. The content and structure of the work meet the requirements and current standards for obtaining an educational master's degree. Illustrative materials facilitate the perception of presented information and indicate persistence in the collection and processing (analyzing) of statistical data. The practical significance of this master thesis is proved by the opportunity of using of a proposed improving set of measures on the company. Proposed recommendations will increase the efficiency of the logistics management system of the company. The master thesis is a completely independent study of current theoretical and practical aspects of management. The master thesis of Danyl Hromylo is recommended for defense with the highest score.

Consultant _____
(signature)

CONTENTS

INTRODUCTION

The relevance of the chosen topic lies in the fact that the ever-growing interest in logistics and its study are due to the wide potential opportunities for increasing the efficiency of the material and technical supply of raw materials for the sale of intermediate and finished products in the required quantities, of the required quality, at an acceptable price, to the precisely specified destination, in a strictly defined period and to a specific consumer. It is management by results that focuses on the achievement of specific indicators instead of the simple performance of functions, which means that it makes it possible to evaluate the effectiveness of their management during the analysis.

Being a relatively new management tool, logistics represents a synthesis of many methods and principles of such traditional fields of activity as marketing, production, finance, and freight transportation. The use of logistics concepts allows for close integration of production, material and technical support, transport and transfer of information abo Logistical Management of Domestic Company

In the contemporary business landscape, effective logistical management is crucial for the success of any domestic company. This master's thesis aims to delve into the intricacies of logistical management within the context of a domestic company, exploring the various strategies, challenges, and best practices that are integral to optimizing the flow of goods and services.

The thesis will provide an in-depth analysis of logistical management principles, encompassing aspects such as supply chain management, inventory control, transportation, warehousing, and distribution. By examining the unique challenges faced by domestic companies in logistical management, this research seeks to offer practical insights and solutions that can enhance operational efficiency and competitiveness.

Moreover, the thesis will explore the role of technology and innovation in modern logistical management, highlighting the impact of digitalization, automation, and data-driven decision-making on improving processes and reducing costs. Additionally, the importance of sustainability and ethical considerations within logistical operations will be addressed, reflecting the growing emphasis on environmental responsibility and social impact.

By synthesizing theoretical frameworks with real-world case studies and practical examples, this master's thesis endeavors to provide a comprehensive understanding of logistical management within the specific context of a domestic company. Through this research, it is anticipated that valuable recommendations and frameworks will be formulated to guide domestic companies in optimizing their logistical operations for sustained growth and success. ut the movement of goods into a single system.

Domestic logistics and transportation management come with their fair share of challenges. Some of the common challenges faced by companies include:

Geographical Considerations: Domestic logistics involves navigating through diverse geographical landscapes, including urban areas, rural regions, and remote locations. Each of these areas presents unique challenges in terms of transportation infrastructure, accessibility, and delivery routes.

Regulatory Compliance: Domestic logistics requires adherence to various regulations and compliance standards set by government authorities. These regulations may include customs procedures, transportation permits, and safety regulations, among others. Ensuring compliance can be complex and time-consuming.

Inventory Management: Managing inventory levels is crucial in domestic logistics to avoid stockouts or excess inventory. Companies need to strike a balance between maintaining optimal inventory levels and minimizing carrying costs.

Transportation Costs: Domestic transportation costs can vary significantly depending on factors such as distance, mode of transportation, fuel prices, and road conditions. Optimizing transportation costs while ensuring timely delivery is a constant challenge for companies.

To overcome the challenges mentioned above and ensure smooth logistical operations, domestic companies employ various strategies. Some of these strategies include:

Technology Adoption: Embracing modern technologies is crucial for streamlining domestic logistics. Companies can leverage transportation management systems (TMS), warehouse management systems (WMS), and route optimization software to enhance efficiency, track shipments, and improve overall visibility.

Collaboration and Partnerships: Collaborating with reliable logistics service providers, carriers, and suppliers can help companies optimize their supply chain. By leveraging the expertise and resources of these partners, companies can enhance their logistical capabilities and ensure seamless operations.

Data Analytics and Forecasting: Utilizing data analytics and forecasting techniques can provide valuable insights into demand patterns, inventory levels, and transportation requirements. By analyzing historical data and market trends, companies can make informed decisions and optimize their logistical processes.

Continuous Process Improvement: Implementing a culture of continuous improvement is essential in domestic logistics management. Regularly evaluating and optimizing processes, identifying bottlenecks, and implementing innovative solutions can lead to increased efficiency and cost savings.

Efficient logistical management is vital for the success of a domestic company. By understanding the challenges and employing effective strategies, companies can ensure timely delivery, customer satisfaction, and overall operational excellence. Embracing technology, fostering collaborations, leveraging data analytics, and continuously improving processes are key pillars of successful domestic logistics management. With these strategies in place, companies can

navigate the complexities of domestic operations and stay ahead in today's competitive business landscape.

It is needed to note that fact that, logistical management is a dynamic field, and companies must adapt to changing market conditions and customer expectations to stay competitive. By staying updated with the latest trends and embracing innovation, domestic companies can achieve logistical excellence and drive their business growth.

The enterprise at the current stage of development is considered in long-term relationships with suppliers of raw materials and consumers of finished products, and should be part of the logistics system to realize competitive advantages and obtain the effect of production and commercial activities.

The practical significance of the thesis lies in the possibility of scientific use of research results.

The purpose of the graduation thesis is to study, research and analyze the development of logistics management, and therefore to find ways to increase the efficiency of the company "Epicenter K" LLC.

Based on the set goal, specific tasks are formulated that should be solved in the course of the work, namely:

1. Define the concept, essence and stages of development of logistics;
2. Familiarize yourself with tasks, functions and principles of logistics;
3. Consider logistics as a factor of increasing competitiveness;
4. General characteristics of the activity of "Epicenter K" LLC;
5. To analyze the development of logistics functions at "Epicenter K" LLC;
6. Find ways to improve logistics functions at Epicenter K LLC.

The subject of this thesis is a detailed study of the complex of management measures used by the enterprise for logistics management.

The object is "Epicenter K" LLC and the logistics management system.

CHAPTER 1. THEORETICAL AND METHODOLOGICAL PRINCIPLES OF MANAGEMENT OF LOGISTICS

1.1. The essence and peculiarities of management of logistics

Material and technical support is one of the types of commercial activity of the enterprise. This activity is carried out on the market of economic goods within such a phase of economic relations as sales. The subjects of these relations are exclusively enterprises, and the object of purchase and sale is economic goods for industrial purposes, or material and technical resources. In the production phase, the specified type of economic goods is transformed into such material factors of production as labor items (raw materials, basic and auxiliary materials, fuel, energy), the value form of which is the main working capital of the enterprise.

The purpose and main goals of material and technical support is to create conditions for effective production activity of the enterprise at the expense of:

ensuring timely, rhythmic and complete delivery to the enterprise of necessary types of material and technical resources;

minimizing costs for them:

storage in a warehouse;

preparation for use in the production process;

transportation to the main, auxiliary and secondary production units of the enterprise.

Thus, material and technical support can be defined as a certain type of commercial activity of the enterprise, which is carried out in the form of acquisition and preparation for use in production activity of material and technical resources in order to ensure its rhythm and efficiency.

International freight transportation is an important type of foreign economic activity. Transportation of goods from one country to another requires the use of vehicles, which naturally increases the cost of the goods. Today, the volume of international transportation is so large and transportation

operations are so complex that there is a need to establish uniform rules and regulations for international transportation. The importance of integrating national norms into a single system of standards is emphasized by the fact that the world has actually developed a single transportation system covering, at a minimum, the territory of developed countries in Europe, North America and many other regions.

International transportation is recognized as transportation between two or more states.The task of selecting vehicles is solved together with other logistics tasks, suchas creating and maintaining optimal inventory levels and choosing types of packaging. The basis for choosing the most suitable mode of transport for aparticular shipment is knowledge of the characteristics of different types of transport.

The following types of transportation are used

1. rail transportation

2. sea transportation

5. air

Table 1.1 Comparative characteristic of main types of transport

Mode of transporation	**Advantages**	**Disadvantages**
1.Railroad	1.High carrying capacity and throughput 2.High regulatory of transporation 3.Relatively low tariffs 4.Significant discounts for transit shipments 5.High speed of cargo delivery over long distances	1.A limited number of carriers 2.Large capital investments in the production and technical base 3.High material and energy intensity of transportation. 4.Low accessibility and to end point.
2.Automotive	1.High availability 2.Possibility of door-to-door	1.Low productivity. 2.Dependence on weather and

	delivery. 3.High maneuverability 4.High speed of delivery.	road conditions. 3.Relatively high cost of long-distance transportation. 4.Insufficient environmental friendliness
3.Air	1.The highest speed of cargo delivery. 2.High cargo safety. 3.Shortest transportation routes	1.High cost of transportation. 2.High capital intensity. 3.Dependence on weather conditions. 4.Insufficient geographical accessibility

Source – made by the author based on data of the company

Trucks are steadily increasing their share of international transportation. This mode of transportation is very flexible in terms of routes and schedules. Trucks can transport goods door-to-door and save carriers from wasteful transportation. Trucks are a cost-effective mode of transportation for transporting high-value goods over short distances. In most cases, road transportation costs are competitive with rail, but trucks usually offer a higher level of efficiency in terms of service. Heavy trucks with van type bodies are mainly used for freight transportation between countries. Some vans are equipped with refrigeration equipment, which allows to transport perishable goods on international highways. Road transport can be used to transport different goods from different shippers or groupage consignments consisting of different goods. If the cargo is to be loaded onto more than one vehicle or different loads or consignments are to be transported, the number of waybills must correspond to the number of vehicles used or the number of consignments to be transported.Transportation operations determine the beginning and end of foreign trade transactions.Their content is determined by the characteristics of the cargo, the type of vehicle, the frequency of deliveries,

customs procedures, etc. For example, at the preparatory stage before signing a contract, the following actions take place

1) Analysis of the transportation services market, cargo transportation conditions and cargo delivery costs;

2) Determining the share of transportation costs in the contract price of the cargo and

calculating a preliminary estimate of transportation costs.

The stage of concluding and executing a contract includes the conclusion of a cargo.

The enterprise, providing material and technical support, is only one of the subjects of economic relations at the microeconomic level. The other side of these relations is a group of business entities, which are defined by the term "suppliers". Interaction between them can be carried out both directly and within certain elements of the market infrastructure.

The suppliers include:

manufacturing enterprises;

intermediary organizations.

In turn, the intermediary organizations include:

commercial supply organizations (wholesale trading organizations);

intermediary organizations (brokerage firms, etc.).

Among the elements of the market infrastructure, the following are distinguished:

commodity exchanges;

auctions;

chambers of commerce.

The differentiation of suppliers of material and technical resources, as well as the level of regularity of the need for certain types of them determine the classification of the forms of material and technical support of the enterprise:

material and technical support through direct contacts with suppliers;

material and technical support through intermediary organizations.

Material and technical resources, which are needed for a long time and in large quantities, are supplied through direct connections. The advantage of the specified form of logistical support is the speed with which suppliers take into account the consumer's requirements regarding the range, quality and volume of supplies, as well as the reliability of the delivery of logistical resources.

Thanks to the second form of logistical support, the organization of supplies of logistical resources, the need for which is irregular and in small batches, is carried out. The specified features of demand are an objective reason for the possibility of increasing costs associated with the delivery of these resources. Optimization of delivery costs is ensured by using certain methods of their organization - transit or warehouse delivery. Cost reduction is also facilitated by the possibility of suppliers using elements of the market infrastructure.

1.2. Regulation of international transport operations

When transporting goods by road transport within the EU, it is about compliance with uniform and not territorially divergent rules for the transportation of goods, payment based on agreements on the use of highways, compliance with sanitary and other rules. Only in case of violation of public demands, national measures can be adopted. So it is about the mechanism of legal regulation and the directions of its influence on the behavior of the participants in cargo transportation relations.

A priori, the legal regulation of international road transportation should be unified, as this ensures convenience in law enforcement in the areas of: unification of the conceptual apparatus, requirements for means of transportation, registration of cargo, passing customs procedures, taking into account items transport parties and national interests, currently regarding the preservation of transport infrastructure. Despite the fact that one of the foundations of private legislation is freedom of contract (paragraph 3 of article 3 of the Civil Code), the parties to these

transports are not always free to choose the possibilities of applying the law, since there are certain imperatives and restrictions here (entry into Kyiv and other cities of Ukraine during the day, the tonnage of the car), the rules for loading and securing cargo, in particular artificial ones, exceeding the level of the sides of the body. The category "legal regulation" is a reference and semantically comes from the Latin "regulo", which means "rule" and arrangement, adjustment, bringing anything into line with anything. First of all, it is about regulating social relations with the help of law. Its essence consists in influencing the participants of legal relations and directing or organizing their actions in the right direction. It is carried out by the influence of law on the elements of legal relations: establishing the grounds for their occurrence, the legal status of the participants, the legal regime of the object of legal relations.

Outstanding legal theorist SS Alekseev expressed that the legal regulations themselves are involved and the individual legal acts of competent bodies and persons are necessary for the regulation of a certain group of social relations, the proper implementation of dispositions or sanctions of these norms. Regularity is a meaningful property of the law itself, and no one has yet proven that it is to the same extent inherent in all other means of legal influence, including legal awareness, legal culture, legal literature, etc. [1, c. 145]. In our opinion, it is possible to influence only those who are able to realize the meaning of their actions and understand their consequences, to choose the optimal model of legally significant behavior.

Transportation operations determine the beginning and end of foreign trade transactions.Their content is determined by the characteristics of the cargo, the type of vehicle, the frequency of deliveries, customs procedures, etc. For example, at the preparatory stage before signing a contract, the following actions take place

1) Analysis of the transportation services market, cargo transportation conditions and cargo delivery costs;

2) Determining the share of transportation costs in the contract price of the cargo and calculating a preliminary estimate of transportation costs.

The stage of concluding and executing a contract includes the conclusion of a cargo transportation agreement, preparation of transport, shipping and insurance documents, planning the transportation of cargo across the customs borders of Ukraine, preparation of cargo for transportation and coordination with the carrier. After concluding the contract, if necessary, we resolve disputes between the parties to the transportation. In addition, a point in time for accounting for imports and exports by water, rail, road, and air transport

- for exports - the date of authorization to cross the border indicated in the customs stamp affixed to the cargo customs declaration; - for imports - the date of authorization to cross the border indicated in the cargo customs declaration;

- in the case of imports, the date of authorization for customs clearance specified in the cargo customs declaration;

- in the case of import or export of goods and electricity supplied by pipeline transport, the date of the acceptance certificate drawn up at the border of the pipeline or power line or at another control and distribution point;

- in case of sending goods by mail - the date of the postal receipt.

The peculiarity of international transportation is that the legislation of the country of origin is usually applied when sending goods, and the legislation of the country of destination is applied when delivering goods to the final destination.

When planning cargo transportation and choosing a vehicle, a number of circumstances must be taken into account.Factors influencing the choice of transport mode in international freight transportation

1) Type of cargo. Cargoes can be divided into general, liquid, and special

regime cargoes. General cargoes include various bulk cargoes (packaged and oversized. By weight, they are divided into light and heavy (each unit of cargo weighs 5 tons or more).Bulk cargoes are cargoes that have a certain structural weight and are transported in large quantities without packaging. They include liquid (oils, fats,alcohol), bulk (ores, concentrates), bulk (grain, sugar) and timber. Special regime goods include goods that are stored and transported under special rules (dangerous goods, perishable goods).

2) Transportation distances and routes When choosing a vehicle, the place of origin of the cargo and the final point of transportation are also determined.

Rail, pipeline, road and air transport are used for intra-continental transportation, and sea and air transport are used for intercontinental transportation.

3) Time factor. Air transportation is the fastest way to deliver goods.However, air transportation costs are high. Therefore, it is used only when the cargo needs to be delivered as soon as possible (for example, food, flowers).

Information on the types of vehicles most commonly used in international practice for the transportation of goods is provided in Table 1.2.

Table 1.2 Goods transported by the main modes of transportation

Mode of transportation	The most frequently transported goods
Railway	Agricultural products,construction materials, minerals
By Sea	Oil,grain,construction materials,metal ores,hard coal
Automotive	Clothes,books,computers,paper,food
Air	Perishable food,precision engineering products

Source – made by the author based on data of the company

4) Transportation costs. Of course, every buyer wants transportation costs to be only a few percent of the price of the goods. However, there are times when there is no choice and you have to pay a higher price. And if there is a choice, the price will be lower.

For example, for small and medium-sized cargoes, air and ground transportation can be delivered at approximately the same price.

(5) Transportation safety. Fragile and expensive equipment is best transported by air. Cargoes with a high risk of theft (e.g., automotive parts, office equipment) are usually transported by sea, especially in containers, which are more expensive.These conditions are important factors when choosing a mode of transportation.However, it often depends on what the shipper is looking for.

1.3. Overarching view on global supply chains

International maritime transportation accounts for a significant share of the world's foreign trade turnover - almost 60 percent. Liquid bulk cargoes, such as crude oil, petroleum products, iron ore, coal and grain, make up the bulk of international maritime cargo flows. Other general cargoes include industrial products, semi-finished products and food.The maritime fleet includes bulk carriers, container ships, lighter ships,roll-on/roll-off ships, ferries and tankers.General cargo ships (boxes, sacks, cartons and other packaging) are currently the main type of vessel used to transport cargo between small ports around the world. The cargo is stored in holds or on deck.Container ships have holds capable of carrying standard ISO containers of 3, 6, 9 and 12 meters in length. A typical 60,000-ton vessel can carry 2,000 six-meter containers. Some of them can be transported on deck or in a refrigerated container. Container ships can carry seven times more cargo per year than conventional ships of the same capacity.

Tankers are used to transport crude oil and other liquid bulk cargo. The biggest challenge for ports is handling large tankers and supertankers. Handling large tankers and supertankers requires the construction of deep-water ports and terminals with large cargo capacity.

Rail transport accounts for almost a quarter of the world's total foreign trade. Railways are the most cost-effective mode of transportation for long-distance transportation of bulk commodities such as coal, ore, sand, agricultural products and timber. In recent years, the railways have begun to increase the number of services tailored to the needs of customers.New equipment was developed for more efficient transportation of certain types of cargo, platforms for the transportation of trailers (railway containers) were developed, and services such as the transportation of already shipped cargo to other destinations along the route or the transportation of cargo in transit were introduced. The new system is currently in operation.

Currently, more than 10% of the world's cargo is transported by air. This mode of transportation is becoming increasingly important. The share of air transport in world transportation grew most rapidly in the 1980s, increasing from 1% in 1985 to 10% in 1992. Although air freight rates are much higher than rail and road transportation,air freight is an ideal option when speed is important or when you need to reach remote markets. The most common goods transported by air are perishable goods(fresh fish, fresh flowers and fruits), as well as small high-value goods (electrical appliances, jewelry). By using air freight, companies can reduce the level of inventory required, reduce the number of warehouses, and cut packaging costs.

Trucks are steadily gaining market share in international transportation.This mode of transportation is very flexible in terms of routes and schedules.Trucks can transport goods from door to door, saving shippers from wasteful transportation. Trucks are a cost-effective mode of transportation for transporting expensive goods over short distances. In most cases, the cost of road transportation is competitive with rail, but trucks usually offer a higher level of efficiency in terms of service.Heavy trucks with van-type bodies are mostly used for freight transportation between countries. There are also vans equipped with refrigerators,which allow for the transportation of perishable goods on international roads.Road transport can be used for different cargoes from different shippers or for groupage consignments consisting of different cargoes. If the cargo is to be loaded on more than one vehicle or different loads or consignments are to be transported, the number of waybills must correspond to the number of vehicles used or the number of consignments transported.The nature of transportation operations in foreign economic activity is determined by the nature of international transportation.Participants in foreign economic activity plan and take into account transportation operations when drawing up contracts and carry out transportation operations when concluding contracts, which are divided into several stages:

At the first stage, before concluding a contract, the following requirements must be met

- Analyze the market conditions for transportation services, the terms of supply of goods,

the level of tariffs and freight rates (i.e., the cost of delivering a unit of cargo by land, water or air).

- Determine the transportation terms and basic delivery terms to be included in the sale and purchase agreement and organize the fulfillment of these terms;

- determine the share of transportation costs (the transportation component) in a particular product price;

- include transportation costs in the price offer.

At the second stage, when conducting foreign trade operations, it is necessary to

- Concluding contracts for the transportation of goods and execution of relevant transportation documents (consignment notes, contracts, bills of lading)

- planning of cargo transportation through sea and river ports and border crossings (monthly operational plan); and

- Preparing cargo for transportation (packaging, labeling, etc.);

- preparation and execution of transport insurance policies; preparation and execution of insurance policies;

- Preparation and execution of technical and shipping documents

- Checking payment documents and making payments to transportation companies;

- completion of the necessary border, customs, sanitary and veterinary formalities:preparation of cargo customs declarations, commercial passports, necessary certificates,payment of duties, taxes and fees;

- monitor the movement of cargo throughout the entire transportation cycle from sender to recipient.

At the third stage, after the completion of a foreign trade transaction, it is necessary to

- Enter into additional agreements, if necessary;

- resolve disputes arising between the parties to the transportation process; and

- If necessary, file claims and lawsuits and prepare the necessary documents in accordance with the established procedure.

The main tasks of the logistics management process are:

• determining the need of enterprises and their structural divisions in material resources;

• studying the sources of providing material resources;

• organization of delivery of material resources to the place of consumption;

• rational and economic use of material resources;

• development of ways to improve the use of local raw materials and materials, production waste;

• organization of proper storage of material values;

• optimization of the supply of material and technical resources [3]. constantly analyze the market in order to find the most effective sources of supply.

The management of material and technical support is the basis for the effective operation of the enterprise. This process performs a number of functions, the main ones of which are determining the needs of enterprises and their structural divisions in material resources; study of the sources of providing material resources; organization of delivery of material resources to the place of consumption; rational and economic use of material resources; development of ways to improve the use of local raw materials and materials, production waste; organization of proper storage of material values; optimization of the supply of

material and technical resources. The quality of implementation of these functions contributes to the efficient operation of the enterprise and has a positive effect on the results of the enterprise.

In practice, there are various options for pushing systems, which are based on the planning of material flows. One of these systems is the MRP (material requirements planning) system, which was created in the USA in the field of supply and production [4].

The main idea of the MRP system is that any accounting unit of materials or components necessary for the production of products must be available at the right time and in the required quantity and to improve the conditions of the enterprise's interaction with its suppliers by rationally reducing their number.

The main advantage of MRP systems is the formation of a sequence of production operations with materials and components, which ensures the timely production of assemblies (semi-finished products) for the implementation of the main production plan for the release of finished products [2, p. 140].

Quality management is closely related to the MRP system, which is one of the important trends of recent years [5]. Further improvement of the system led to the transformation of the MRP system from a closed loop into an extended modification, later named MRP-II (Manufactory Resource Planning). The system was created for effective planning of all resources of the production enterprise, as well as financial and personnel. The MRP-II system includes several components, namely: material requirements planning, business process planning, financial planning, production capacity planning, investment management, etc. Therefore, the entire system as a whole analyzes the performance of each component, which ensures its flexibility in relation to external factors. That is, MRP-II creates an integrated system of synchronization of all functions performed in the organization [2, p. 141].

The spread of the MRP-II system at the enterprise, in accordance with the trend of external integration, received the name "enterprise requirements planning" or "ERP system" (enterprise requirements planning). The ERP system is designed

to manage economic and financial activities. In the hierarchy of enterprise management systems, this system is the "upper level" and relates to commercial, production activities at the enterprise, such elements as planning, production, accounting, finance, material and technical supply, inventory management, sales, management of production/delivery orders products Such a system is developed for management decision-making, to provide managers with information, as well as to create an infrastructure for electronic exchange with consumers, suppliers of the enterprise. The main advantage of the ERP system is a combination of all company resources, and the disadvantage is the lack of an opportunity to increase the level of use of working time [4].

In the 70s of the XX century. increased attention to the logistical aspects of enterprise resource management, namely to the concept of DRP (Distribution Resource Planning), or the management system and product distribution planning. The beginning in this system is implementation using planning forecasts and data on orders that have actually arrived. The next stage is the formation of the production schedule, the production plan, the preparation of a specified plan indicating the number of components and finished products. And at the end, with the help of the MRP system, the needs for material resources and production capacities are calculated for the production schedule. The ultimate function of the DRR system is transportation planning. In order to improve the efficiency and quality of purchases, the company is introducing a "Supplier Relationship Management System" (SRM). The SRM system is a program of actions that is developed together with the supplier and the consumer of its material resources, as well as management on a global scale of the supplier's resources using information systems and technologies.

The level of economic and social efficiency depends on a number of factors. Therefore, for the practical solution of the problem of efficiency management, it is important to classify growth factors according to certain criteria. It is recommended to classify the factors of growth of efficiency of economic and other types of activities by three criteria: 1) type ofcosts and resources; 2) direction of

development and improvement of activities; 3) place of application in the performance management system.To determine the sources of productivity growth, the following three criteria should be used:increased labor productivity and reduced tariff rates for services provided (saving on live labor costs), reduced capital and material intensity, and rational use of natural resources (saving on public labor costs). The active use of these resources to improve efficiency requires the implementation of a set of measures that characterize the main directions of development and improvement of the production and commercial activities of the institution (the second category of characteristics). The main directions are as follows:

- Acceleration of scientific, technological and organizational progress (improvement of the technical and technological level of service provision, service delivery structure,organizational management systems, forms and methods of organizing activities, their planning and motivation);

- improving the quality and competitiveness of services;

- comprehensive development and improvement of the organization's foreign economic activity.The classification of efficiency factors by the place of their application in the efficiency management system (the third feature of the group of factors) is recognized as the most important. The classification of internal factors into "hard" and "soft" is rather arbitrary, but is widely used in external business practice. The specific names of these groups of factors are borrowed from computer terminology, according to which the computer itself is called a "hard product" and the software is called a "soft product." By analogy, "hard" factors are those that have physical parameters and can be measured, while "soft" factors are those that cannot be physically tangible but are important to the economic functioning of the workgroup.The transportation process as a system has several characteristics. Since the process takes place mainly outside the enterprise, the share of factors that are impossible or very difficult to influence is high (e.g., weather, traffic jams, traffic accidents). The second important characteristic is the temporal coincidence of the processes of production and consumption of services.

High capital turnover is associated with a short production cycle, which is the third characteristic. The fourth feature is the uncertainty of performance results and the difficulty of preliminary assessment of services. The fifth feature is the high dynamism of the market process. Documents and various technical means (GPS tracking, mobile phones, transceivers) are used to provide information about the relationship between the transportation process and the external environment. External documents include laws, regulations, standards,contracts, licenses, permits, market research, etc. Internal documents include waybills, cargo receipt and delivery records, route maps, etc.Based on the results obtained, it is possible to create a system of freight transportation efficiency factors. To do this, all factors are divided into groups according to the stages of this process. Let us consider in more detail the groups of factors that characterize the external environment.

Table 1.3 Factors of cargo transportation efficiency

Group factors	Components of group	Efficiency factors
1	2	3
Internal-system factors	Conclusion of a transportation contract	The complexity of the client's requirements. The volume of transportation. Features of transportation
	Selection of rolling stock	Matching the rolling stock to the nature of the cargo. Availability of the optimal brand at the enterprise
	Development of a transportation route	Optimization of the route. Possibility to adjust the route
	Load	Availability of appropriate loading equipment. Compliance with hourly loading rates
	Moving cargo	Speed of movement. Compliance with the movement schedule. Adherence to the route of movement
	Unloading of rolling stock	Availability of appropriate unloading equipment. Compliance with unloading hours. Degree of readiness of unloading

		areas
External factors	Market	Demand level, price level, road conditions
	Financial	Timeliness and sufficiency of financing of the process
	Legal	Availability of legislative and regulatory framework
	Management	Qualification level of personnel managing the process
	Production	Condition and readiness of rolling stock for transportation
	Social	The level of motivation of the personnel involved in the process, interest in the transportation of other participants in the process

Source – made by the author based on data of the company

CHAPTER 2. RESEARCH OF THE LOGISTIC MANAGEMENT SYSTEM OF "Epicenter K" LLC

2.1. Analysis of the financial and economic activity of "Epicenter K" LLC

The company "Epicentr K" is a national network of modern construction and economic hypermarkets with a wide range of goods according to European service standards. "Epicenter K" LLC was registered on August 27, 2003 at the legal address: 02139, Kyiv, str. Bratislava, 11, tel. (044) 561 27 50. Over 10 years of development, 42 hypermarkets have been opened throughout Ukraine, 36 in the regions and 6 in the capital. Khmelnytskyi "Epicenter K" was opened on December 15, 2007.

The company is constantly improving, improving the service, expanding the range of products and the range of services in order to satisfy the needs of consumers as much as possible and to implement the main slogan of the company "The buyer is always right!" in practice.

Today, the national network of construction and economic hypermarkets "Epicenter K" is the winner of the International Festival "Choice of the Year" in Ukraine - 2006, 2007, 2008, 2009, 2010, 2011, 2012 in the nomination "Network of the Year Building Materials Hypermarkets", laureate of the annual National Award "Ukrainian Trade Olympiad" in 2007 in the nomination "National chain of building materials hypermarkets", as well as the winner of the national rating competition "Brand of the Year 2008".

Management staff of "Epicenter K" LLC:

The head of the society - Gerega Oleksandr Volodymyrovych;

Financial director of the company - Halyna Fedorivna Gerega;

Deputy head of the society - Tetyana Fedorivna Surzhik;

General Director of the company - Mykhailyshyn Petro Yosypovych;

Regional director of the western region - Yakovlev Yury Vasyliovych;

Regional director of the eastern region - Artari-Kolumb Borys Yuriyovych;

The total area of the building "Epicenter K" is 18,000 square meters. and can serve about 10,000 customers. Today, it is this hypermarket that has the largest first floor in Europe in terms of area.

In the chain of hypermarkets of "Epicenter K" LLC, you can find everything for construction, repair and decoration. The goods are presented in 10 sectors, starting with large construction works, ending with decorations and decoration, in total more than 1 million items.

The "Epicenter K" network offers products of both domestic and foreign production (Poland, Spain, Germany, Russia, France, China, Turkey).

The product is delivered to hypermarket chains both by own transport and through cooperation with 5,000 product suppliers.

"Epicenter K" LLC is designed for all categories of customers and can satisfy any needs of customers.

The progressive management of the organization contributes to the development of personnel, career growth and the growth of the financial support of all company employees.

The main work of "Epicenter K" LLC:

Our goal is to create the most favorable conditions for the construction, repair and arrangement of the home of every resident of Ukraine.

Our task is to provide residents of Ukraine with a wide range of high-quality and affordable goods. To save the client's time with the help of convenient service technology and the provision of a full range of goods and services under one roof.

Our strategy is to be a leader in the retail trade market of the "from and to" format in Ukraine. Development and expansion of the network of hypermarkets in all regional centers and large cities in Ukraine, presenting a wide selection of products and ensuring a high level of customer service.

The management structure at the enterprise is hierarchical, that is, all employees report directly or indirectly to the director of the enterprise.

The highest governing body is the meeting of participants. The general director is appointed by the meeting of participants, he organizes the work of the

hypermarket, concludes agreements, represents him in all organizations, institutions, issues instructions, approves the staffing schedule of the enterprise, establishes plans for the implementation of sales of goods , hires and dismisses employees.

The hypermarket reports directly to the hypermarket director, who is appointed by the general director.

The hypermarket is not a legal entity, it is a payer of taxes and deductions to the Pension Fund, social insurance funds, related to the calculation and payment of wages to hypermarket employees, as well as a payer of separate taxes in the relevant tax authority , according to its location.

The scope of activity of the "Epicenter K" hypermarket is:

Wholesale and retail trade in building materials;

Trade in production and technical products;

Trade in consumer goods;

Provision of delivery services;

Format and cutting department;

Completion of construction objects;

Door tuning;

Free download;

Cafe.

Analysis of demand and its determinants is the basis of market research. The purpose of the analysis is to quantify the potential (capacity) of the market and the actual level of primary demand.

The demand for the goods of the "Epicenter K" enterprise is a part of the market demand, which corresponds to the market share held by the enterprise (brand) in the basic commodity market.

In the process of market monitoring, an analysis of demand and its forecasting for the company's products is carried out. To estimate the size of the market, the sales volume of each of the products sold by the company is estimated, trends in changes in demand for certain products are identified, and a forecast of

demand and supply from other companies is made using various methods. At the same time, the most common methods of collecting primary information are used: observation, experiment, survey.

At the "Epicenter K" enterprise, continuous market monitoring is carried out by the marketing department, which reports to the commercial director.

In the process of monitoring, the following is carried out:

* analysis of incomes and purchasing power of the population of the region;

* identification of unfilled market niches;

* research of market segments;

* study of quality characteristics that are guided by the consumer when making a purchase;

Table 2.1

Stages of logistic system of Ltd. “Epicentr-K”

№	Stage	Processes that characterize it
1	order	Search for suppliers
		Analysis of supplier reliability
		Information support of suppliers
		Conducting negotiations with potential suppliers
2	purchase	purchase
		Customs clearance and insurance
		preparation of goods for unloading
		Packaging
3	transportation	load
		Internal transportation
		overload
4	storage	warehousing
		Maintenance of storage areas
		Maintenance of proper conditions in the warehouse for storing goods

Source – made by the author based on company data

Observations are carried out by store sellers and other persons (for example, warehouse workers) who are in the process of direct communication with customers. At the end of each working week, they fill out special questionnaires developed in the organization's marketing department.

The experiment, as a method of studying demand, is used when studying the demand for a novelty product, for example, for new models of winter shoes.

Surveys of customers in "Epicenter K" stores are carried out quite often (approximately once every three weeks) on the basis of questionnaires. A questionnaire has been developed, which usually contains:

Composition of consumers of these goods (by age);

Consumer behavior when buying;

Factors influencing purchase decisions.

The company "Epicenter K" conducts consumer surveys in order to obtain information about people's knowledge, beliefs and preferences, about their degree of satisfaction, etc., as well as to measure the strength of its position in the eyes of the audience.

The wholesale price of the product is set based on the situation, the conjuncture in the domestic market and the level of profitability sufficient to maintain the stable financial condition and solvency of "Epicenter K".

Table 2.2

Dynemic of the main financial indicators of Epicenter-K, LLC, 2018-2020 (UAH)

Indicator	2018	2019	2020	Relative increase, % 2018/2019		2019/2020	
Gross profit	148119	1565353	1408209	82234	5,54	-157144	-10,04
Operational income	342289	375944	429485	33655	9,83	53541	14,24
Financial income	11	6	9	-5	-45,45	3	50
Other income	26	208	7759	182	700	7551	3630,29
Total income	1825445	1941511	1845462	116066	6,36	-96049	-4,95

Source: based on financial data Ltd. “Epicentr-K”

From the table 1. it can be concluded that the operating income of EpicenterK LLC in 2019 increased by UAH 11.066 million compared to 2018, increasing by 6.36%, and in 2020 it decreased by UAH 96.049 million compared to 2019. (4.95%). This revenue dynamics is mainly caused by an increase in net income from sales by UAH 82,234,000. (5.54%), a decrease of UAH 157,144 thousand in 2019 and a decrease of 10.04% in 2020.

Table 2.3

Cost of good sold Ltd. “Epicentr-K”(UAH), 2018-2020

Indicator	**2018**	**2019**	**2020**	**Relative increase, % 2018/2019**		**2019/2020**	
Cost of goods sold	-1209882	-1339723	-1230897	-129841	-10,73	108826	8,12
Administrational expenses	-46734	-52991	-61705	-6257	-13,39	-8714	-16,44
Selling expenses	-225076	-220530	-258928	4546	2,02	-38398	-17,41
operational expenses	-135027	-96663	-94698	38364	28,41	1965	2,03
Financial expenses	-166320	-149800	-146928	16520	9,93	2872	1,92
Other expenses	0	0	-3185	0	-	-3185	-
Total expenses	-1783039	-1859707	-1796341	-76668	-4,3	63366	3,41

Source – made by the author based on data of the company

From the table 2. it can be concluded that the value of the enterprise in 2019 decreased by UAH 76.668 million compared to 2018, decreasing by 4.3%, and in 2020 it increased by UAH 63.366 million. (3.41%), this expenditure dynamics is caused by a decrease in the cost of goods sold by UAH 129.8841 million. (10.73%), increased by UAH 108.826 million in 2019, and by 8.12% in 2020 compared to 2019, as the cost of goods sold is the largest item of the company's expenses

Table 2.4. Horizontal analysis of the assets of "EPICENTR K LIMITED LIABILITY COMPANY" in 2019-2020, (on 31/12)

(thousand UAH)

Indicator	2019	2020	Abs. deviation, +,-	Relative increase, %
Unfinished capital investments	1869460	3692156	1822696	97.5
Fixed assets	12304648	15231712	2927064	23.79
other financial investments	1755267	3129633	1374366	78.3
NON-CURRENT ASSETS	16010547	22109337	6098790	38.09
Reserves	13885925	15389033	1503108	10.83
Other current receivables	4381455	3859491	-521964	-11.91
CURRENT ASSETS	20881053	22416054	1535001	7.35
ASSETS	36891621	44525391	7633770	20.69

Source – made by the author based on data of the company

The fact of growth in the amount of equity indicates an increase in the level of well-being of the owners.

Table 2.5 Horizontal analysis of liabilities (sources of financing assets) "EPICENTR K LIMITED LIABILITY COMPANY" in 2019-2020 (on 31/12)

(thousand UAH)

Indicator	2019	2020	Abs. deviation, +,-	Relative increase, %
Retained earnings (uncovered loss	14542267	17688086	3145819	21.63
EQUITY	14700877	17846696	3145819	21.4
Long-term bank loans in	2008688	4142910	2134222	106.25
LONG-TERM LIABILITIES	2265426	4455080	2189654	96.66

goods, works, services	14514081	16290054	1775973	12,24
Other current commitments	3667811	4144753	476942	thirteen
SHORT-TERM LIABILITIES	19925318	22223615	2298297	11.54
BALANCE	36891621	44525391	7633770	20.69

Source – made by the author based on data of the company

The increase in the total amount of liabilities provides a more complete disclosure of the company's existing potential, although it leads to an increase in dependence on external suppliers of financial resources.

Dynamics of Profitability Indicators for Epicenter-K LLC in 2019-2020.

We present an analysis of the financial stability indicators for Epicenter-K LLC in Table 2.6 The table displays an assessment of the enterprise's financial stability for 2019-2020.

Table 2.6 Dynamics of profitability indicators of "EPICENTR K LIMITED LIABILITY COMPANY" in 2019-2020

Indicator	2019	2020	Abs. deviation, +,-	Relative increase, %
autonomy ratio	0.45	0.46	0,01	1%
working capital ratio	0,13	0,18	0,05	5%
financial stability ratio	0,062	0,065	0,003	<1%

Source – made by the author based on data of the company

The financial stability of Epicenter LLC is indicated by satisfying indicators hat are positively changing.

The increase in autonomy ratio leads to greater financial stability and reduces dependence on creditors.The current ratio is trending positively with a 38.8% increase.There has been a trend of growth, resulting in a 38.5% increase.

The financial stability ratio is also experiencing growth.

Table 2.7 Profitability analysis of "EPICENTR K LIMITED LIABILITY COMPANY" in 2019-2020

Indicator	2019	2020	Abs. deviation, +,-	Relative increase, %
Profitability of sales	10,03	16,41	6,38	63,59
Profitability of production	15,69	28,09	12,4	79,09
Return on assets	4,69	7,72	3,03	64,6
Return on equity ratio	0,28	0,30	0,02	7,1

Source – made by the author based on data of the company

The enterprise's profitability indicators demonstrate positive progress and are deemed highly satisfactory.The sales profitability is a reflection of the commercial activity's efficiency, which has increased by 63 percent.The efficiency of commercial activities increased by 63.54%.Similarly, the level of product profitability demonstrated a positive trend. Product profitability indicates the efficiency of current expenses, and it increased by 79.09%.

The return on assets ratio exhibited an increase of 64.6%, which is a favorable trend for the company.The rise in the return on equity ratio suggests a growth in the level of return on equity, as shown in Figure 3.

Thus, the analysis of the financial and economic activities of Epicenter-K LLC "Epicenter-K" for the period 2019-2020 allows us to conclude that
The considered enterprise is developing and has positive tendencies.
The company is attractive for investment.

Table 2.8 Stability and solvency indicators of "EPICENTR K LIMITED LIABILITY COMPANY" in 2019-2020 (on 31/12)

Indicator	2019	2020	Abs. deviation, +,-	Relative increase, %
Financial autonomy	0.4	0.4	0	0.59
Current liquidity	0.8	1	0.19	23.81

Source – made by the author based on data of the company

The value of current liquidity is below the regulatory limit (1.5), which may indicate the probability of loss of solvency in the near future.

2.2. Study of factors affecting logistics of Epicentr, LLC

EPICENTR K LIMITED LIABILITY COMPANY carries out the practical implementation of logistics management by applying logistics functions.

The logistics department plans, executes and controls the physical movement of all types of flows (materials, finished products, information) that accompany the movement of goods along the selected channel from the producer to the consumer in order to satisfy the needs of consumers and obtain profit.

The department also carries out the following operations:

1) loading;

2) transportation;

3) unloading;

4) completeness;

5) storage;

6) packaging and other operations.

The main task of the logistics department is to ensure that the goods are in the right place, in the right amount, at the right time. That is, to simultaneously maximize the level of service and minimize costs for the distribution of goods. To

determine the level of logistics service provided by the company, we will calculate this indicator (formula 2.1)

The formula for determining the level of logistics service is as follows:

$$\eta = \frac{\sum_{i=1}^{n} t_i}{\sum_{i=1}^{N} t_i} \cdot 100\%, \quad (2.1)$$

where η is the level of logistics service;

N is the number of services that can theoretically be provided;

n – the actual number of services provided;

t_i is the time for the i-th service.

In table 2.3. a general list of the most important services that the firm can provide in the process of selling its products is given, as well as the time required to provide each individual service. However, in fact, the company provides only services No. 1, 2, 3, 4, 5, 6, 7, 8 and 10.

To determine the level of logistics service, it is necessary to make appropriate calculations.

Table 4 - General list of services provided by " Epicentr " LLC

Service number	Time required to provide the service, person/hour.	Service description
1	24	Service maintenance (5x9 xNBD)
2	4	Service maintenance (5x9x4)
3	24	Service (7x24x24)
4	8	Service (7x24x6/8)
5	1	Packaging
6	2	Loading
7	24	Transportation
8	2	Unloading
9	24	Warehousing
10	4	Product packaging

Source – made by the author based on data of the company

Using the above data, we calculate the level of logistics service:

$$\eta = \frac{24+4+24+8+1+2+24+2+4}{24+4+24+8+1+2+24+2+24+4} \cdot 100\% = 0{,}79 \cdot 100 = 79\%$$

Based on the obtained data, it can be stated that the level of logistics service of the company is provided by 79%, and, in turn, indicates a fairly good level of the company, but it needs significant improvements.

Let's consider what tasks the department performs, namely:

1) planning and organization of purchases of goods from manufacturers (sellers);

2) planning and organizing the delivery of purchased goods to the bases and warehouses of commercial intermediaries;

3) organization of reception, placement, storage of goods at bases and warehouses of commercial intermediaries;

4) management of commodity stocks in the field of trade;

5) planning and organizing the sale of goods to customers;

6) organization of pre-sale and after-sale customer service.

Let's consider in more detail what tasks are included in the activities of the logistics department of the " Epicentr " company.

In the organization of purchases, " Epicenter " distinguishes six stages:

1) study of consumer demand;

2) development of an operational plan for wholesale purchases;

3) justification of the choice of the supplier (see Figure 2.5 in more detail);

4) making a decision on the purchase and supply of goods;

5) establishment of operational control over the execution of warehouse contracts;

6) establishing the economic efficiency of wholesale purchases.

We will characterize each of the states and determine the content of the works being performed.

The initial stage of purchases is the study of consumer demand. The purchase of goods without taking into account the demand of consumers causes a slowdown in the circulation of goods, an increase in the costs of circulation to

bring them to the final consumers, and as a result, the financial condition of enterprises deteriorates. Therefore, at this state, the company " Epicentr " carries out market diagnostics with the aim of clarifying its marketing strategy and information provision of purchasing activities. The study of the goods market involves the systematic collection, processing, analysis and evaluation of information about the development of needs, demand and product supply, opportunities of competitors, etc.

An operational procurement plan is developed taking into account the identified need in the assortment, quantity and quality of goods. They are based on the volume and assortment of goods to be purchased, must correspond to the volume, assortment and dynamics of consumption, taking into account the need to normalize commodity stocks and be oriented towards the constant renewal of the assortment in relation to the latest achievements of science, production and the development of human needs.

In turn, **Epicentr, LLC** develops a procurement plan in two stages:

1. The need for wholesale purchases of goods is determined, that is, a plan is drawn up for the receipt of goods at the enterprise, which must ensure the uniform and rhythmic execution of contracts for the supply of goods to wholesale buyers in an assortment and the normalization of commodity stocks, which are necessary to ensure uninterrupted trade.

The goods receipt plan is developed for the selected product group for the planned period (year, quarter). The results are presented in the form of table 5 .

Table 5 – The form of the plan for the arrival of goods in the wholesale database the quarter of 2023

Name of product groups	Merchandise plan	Reserves		Income plan
		Elementary	Kiptsev	

Source – made by the author

The most difficult task during the development of the plan for the arrival of goods at the enterprise is the definition of the plan for the sale of goods, the basis of which at wholesale enterprises is the order of retail enterprises and other consumers of the area of activity of the base, the contracts concluded with them for the supply of goods and specifications for them, the possibilities of the enterprise regarding the purchase of goods .

Very often, in the process of developing a plan for the receipt of goods, " Epicentr " is faced with the fact that enterprises do not yet have a portfolio of orders, therefore, forecasts of the development of demand for certain products are used for calculations.

2. A plan for the purchase of goods is drawn up. If the goods receipt plan is designed to determine which goods and in what quantity should be purchased, then the mass procurement plan should contain instructions regarding the sources of these purchases, the terms of their implementation, and the names of those responsible for the procurement. This plan is drawn up in the form of Table 6 .

When developing a plan for wholesale purchases of goods, it is important to achieve the break-even point of purchases of goods by individual product groups and from each supplier.

The break-even point of purchases is the amount of purchases of goods from the i-th supplier, for which the amount of gross income from the sale of these goods covers the amount of current costs.

Table 6 – Form of flow of wholesale purchases

Plan of wholesale purchases based on 2023

Name of product groups	Name Sources of purchases	Sum	Responsible for purchasing	Terms		
				submitting an order	Conclusion of the contract	Clarification of the specification

Source – made by the author

The procurement plan is approved by the head of the enterprise or the head of the commercial department.

In the conditions of the presence of a significant number of suppliers on the market, it is important to justify the choice of a specific, most suitable supplier. To purchase goods rationally means to purchase them in the required quantity, of the required quality, at the required time, from a reliable supplier and at an acceptable price.

When justifying the choice of specific suppliers, information about the stage of the supplier's order portfolio is of great importance. The portfolio of orders available in an individual firm is determined by the value of all orders at a given time. Information about the reduction of the supplier's order portfolio can be used by the buyer to obtain preferential terms of supply, calculations and receive additional discounts.

Making a decision on the purchase and supply of goods involves the development of draft texts of agreements with suppliers, the conclusion of agreements and contracts with them, the development of specifications for agreements, the preparation and submission of orders for the shipment of goods to suppliers. During the development of draft contract texts and their conclusion, it is taken into account that wholesale purchases of goods must provide normal conditions for regulating the supply of goods in an optimal mode.

An important role in the organization of wholesale purchases is played by the establishment of operational control over the execution of concluded contracts, which involves the receipt of goods, their acceptance and payment, and the organization of warehouse processing of goods. Particular attention is paid to suppliers fulfilling their obligations under contracts in full, applying measures of influence to negligent suppliers.

The economic efficiency of wholesale purchases is the basis for improving the organization of goods purchases in the future. It is determined by the

comparison of income from the sale of goods and circulation costs. A detailed analysis of circulation costs associated with the purchase of goods makes it possible to increase the level of profitability of trade activities.

" Epicentr " company, in order to timely fulfill customer orders and save its own funds, concludes contracts with product suppliers. As a rule, there are several suppliers for each type of product.

A profitable deal is a guarantee of business development, while an unsuccessful one can damage the company's image and bring no profit at all. So that such doubts do not arise and to facilitate the choice of a manager, you can calculate the supplier's rating (R) using the most important evaluation criteria: price, quality, reliability.

For example, let's consider such a product as the HP MSA 2040 SAN DC LFF data storage system (C8R14A). This product is represented by such companies as LLC " MUK " (Supplier A) , ERC (Supplier B) , LLC " MTI " (Supplier B) and LLC " NETWELL " (Supplier G).

To evaluate suppliers A, B, B and D, we will use the most frequently used criteria: price (0.5), quality (0.2) and reliability of supply (0.3). The importance of the criterion, according to the logistics manager of the company, is indicated in parentheses from 0 to 1. The evaluation of suppliers based on the results of work in terms of the specified criteria (ten-point scale) is shown in Table 7

Table 7 – Evaluation of potential suppliers

Criterion	***Evaluation of suppliers according to this criterion***			
	Provider AND	***Provider B***	***Provider IN***	***Provider G***
Price	7	4	5	8
Quality	5	7	9	5
Reliability	6	2	3	2

Source – made by the author based on data of the company

In a formalized form, the supplier rating R is determined as follows:

$R = \sum_{i=1}^{n} c_i \cdot k_i$, (2.2)

where n is the number of supplier rating evaluation indicators;

k_i – the significance of the indicator;

ci is a point estimate of the value of the indicator provided by this supplier.

Let's calculate the rating of each supplier:

$R_1 = (7 \cdot 0.5) + (5 \cdot 0.2) + (6 \cdot 0.3) = 3.5 + 1 + 1.8 = 6.3$

$R_2 = (4 \cdot 0.5) + (7 \cdot 0.2) + (2 \cdot 0.3) = 2 + 1.4 + 0.6 = 4$

$R_3 = (5 \cdot 0.5) + (9 \cdot 0.2) + (3 \cdot 0.3) = 2.5 + 1.8 + 0.9 = 5.2$

$R_4 = (8 \cdot 0.5) + (5 \cdot 0.2) + (2 \cdot 0.3) = 4 + 1 + 0.6 = 5.6$

and has the highest result in the rating and leads among others. Taking into account the obtained results, it can be concluded that it is with him that a contract should be concluded.

Quality selection of the supplier will allow to implement various projects faster in the future.

According to the obtained results, it can be seen that the system-forming function at **Epicentr, LLC** (formation of economic ties, organization of movement of products through storage locations, formation and regulation of product stocks, development and organization of warehouse management) is not fully implemented and, with certain adjustments, the organization will be greatly improved.

The modern level of organization and implementation of the delivery of goods provides for maximum full satisfaction of the needs of cargo owners in the organization of fast, cheap and safe transportation, high efficiency of all related operations, new approaches, ways and methods of ensuring their interests.

However, it is the process of delivering goods, be it internal business connections or international ones, that is often associated with losses: deterioration of the quality of goods and their complete or partial loss; extended terms of

transportation or storage, poorly organized loading and unloading operations; unnecessary unproductive costs.

In accordance with the terms of **Epicentr, LLC,** large equipment is delivered to Kyiv free of charge.

In Kyiv, delivery is made from 9:00 a.m. to 7:00 p.m. on working days. The employees will promptly deliver the order to the buyer's specified address at a time convenient for the customer, as well as complete all the necessary documents. The delivery time must be agreed in advance with the company's managers.

The company works on a non-cash form of payment. Cash and Webmoney payments are accepted for box sales. Upon delivery, the courier hands over all the necessary documents.

The company works on a non-cash form of payment. **Epicentr, LLC** accepts cash and Webmoney payments in cases of box sales. Upon delivery, the courier hands over all the necessary documents.

Epicentr, LLC , if necessary, uses third-party delivery services. All large-sized goods, as well as delivery in the region , are carried out using the delivery services "Autolux" (according to the list of cities) and "Night Express" (according to the list of cities).

Delivery is carried out only after full payment of the goods at the non-cash rate.

Epicentr, LLC works on a non-cash form of payment. The company accepts cash and Webmoney payments in cases of box sales. Upon delivery, the courier hands over all the necessary documents.

Cash payment is possible only when buying in Kyiv or the Kyiv region. Payment is made exclusively in the national currency at the exchange rate determined at the time of the order.

Epicentr " employees issue a sales receipt as confirmation of payment .

Payment by non-cash settlement is carried out in the following way: after placing an order, the manager sends an invoice by fax or e-mail, which buyers can

pay from the company's current account. For legal entities, a package of all necessary documents is provided together with the product.

With the help of the WebMoney Transfer system, clients have the opportunity to make instant payments via the Internet.

To pay for the purchase of goods in WMZ, WMU or WMR, you need to use the Webmoney Keeper program or the Webmoney Keeper Light online interface. You can learn more about the system on the WebMoney website.

It is extremely difficult to build a generalized model of inventory management that would take into account all the varieties of conditions observed in real systems. But even if it were possible to build a universal model, it is unlikely to be analytically solvable.

Logistics management affects a large number of different objects: a wide range of goods, a large number of buyers and suppliers, various cargoes, etc. At the same time, the entrepreneur receives non-equivalent results from these objects.

Annual costs of Epicenter LLC for stock storage as a percentage of the average stock value are 19%, with a stock norm of 20 days. However, they can be reduced as a result of the application of differentiated stock norms after dividing the assortment into groups A, B, C using the ABC method - analysis.

Analysis - ABC is used for the purpose of reducing the amount of stocks, the number of movements in the warehouse, the overall increase in profit at the enterprise, etc.

The turnover of Epicenter LLC is UAH 60,000 thousand. for a year. The number of working days in a year is 250. The company's annual costs for stock storage as a percentage of the average stock value are 19%, with a stock norm of 20 days. Inventory storage costs can be determined by calculating storage costs (Formula 2.3) and one-day turnover (Formula 2.4)

When applying the ABC method, one should focus on the most significant objects from the point of view of the indicated goal.

Group "A": the most expensive and valuable goods, which account for approximately 75-80% of the total inventory value, but they represent only 10-20% of the total number of goods stored.

Group "B": medium-priced goods. Their share in the total amount of reserves is approximately 10-15%, but quantitatively, these reserves make up 30-40% of the products that are stored.

Group "C": the cheapest. They make up 5–10% of the total value of stored products and 40–50% of the total volume of storage.

ABC analysis shows the value of each group of goods. Typically, 20% of all inventory items account for 80% of all costs. Based on this, for each of the three groups of goods, a different degree of detail is assumed during planning and control.

For example, let's divide the assortment accordingly: group A - 84% of sales; group B – 12% of sales; group C – 4% of sales. Let the reserve norm for group A be 5 days; for group B – 10 days; for group C - 20 days.

Formulas for calculating inventory storage costs:

$$In_{sb/n} = NZ \cdot (PRV_{sb} / 100) \cdot OT, \quad (2.3)$$

where НЗis the stock rate (days);

PRV_{sb} - specific annual costs for storing stocks (%);

OT - one-day turnover, (thousand hryvnias / day).

$$OT = \frac{O}{ЧРД}, \quad (2.4)$$

where, O is the turnover of the company (thousand UAH);

CHRD - number of working days in a year (days).

First, let's determine the one-day turnover of the " Epicentr " company:

$$OT = \frac{60000}{250} = 240 \text{ (thousand UAH/day).}$$

Before the ABC analysis, storage costs were equal to:

$In_{sb/n} = 20 \cdot (19/100) \cdot 240 = 912$ (thousand UAH per year).

After conducting ABC analysis, the reserve norm changed: for 84% of reserves, it became 5 days, for 12% – 10 days, and for 4% – 20 days.

In order to find out how the stock rate changed after their division, you need to calculate the average stock rate (formula 2.5).

$$НЗ_c = НЗ_g \cdot НЗ_d, \quad (2.5)$$

where, $НЗ_g$ - the reserve rate by groups, (%).

$НЗ_d$ – reserve rate by days, (days).

So the average reserve rate can be calculated as:

$NC_s = 0.84 \cdot 5 + 0.12 \cdot 10 + 0.04 \cdot 20 = 6.2$ (days).

In order to find out how the costs of stock storage have changed after their division into groups, it is necessary to calculate the costs of stock storage using the average stock rate (formula 2.6).

$$В_{зб/н} = НЗ_c \cdot (PRV_{sb} / 100) \cdot OT, \quad (2.6)$$

Inventory storage costs after ABC analysis:

$In_{sb/n} = 6.2 \cdot 0.19 \cdot 240 = 282.72$ (thousand hryvnias per year).

Having calculated the new costs for storing stocks after carrying out ABC analysis, we will compare them with previous data and find out how much they have decreased (formula 2.7).

$$RV_{Coll} = V_{zb/n} - V_{zb/n}, \quad (2.7)$$

where, $В_{сб/п}$ – costs for storing stocks without division into groups;

$In_{sb/p}$ - costs of storing stocks after division into groups.

We find that the annual storage costs as a result of the application of differentiated stock norms have decreased by:

$PB_{сб} = 912 – 282 , 7\ 2 = 629 .28$ (thousand hryvnias)

So, as we can see, this division into groups with the help of ABC analysis allows to reduce the costs of storing stocks, which will make it possible to use the company's budget more rationally.

2.3. Evaluation of the level of efficiency of international transport operations of Epicentr, LLC

In conditions of high competition, it becomes obvious that enterprises must constantly improve their industrial activities taking into account the requirements of the market in order to survive and maintain their long-term competitiveness in the respective market. In a rather difficult and difficult period in Ukraine, only those enterprises that quickly adapt to changes in the external environment and confidently use the latest tools, methods and technologies for enterprise management remain the leaders.

Today, many enterprises increasingly begin to widely use modern logistics tools in their activities to ensure a higher level of competitiveness on the market and achieve strategic goals. At a certain stage of the development of logistics systems and chains of enterprises, a problem arises in the objective assessment of their level of development in a strategic aspect. Today, one of the widespread criteria for evaluating the development of logistics activity is the expert assessment of specialists in the field of logistics, however, in some cases, expert assessments can differ significantly, and experts can make mistakes or make incorrect forecasts. In such cases, the enterprise's management system should have tools for objective evaluation of the development of logistics at the enterprise, which can be used independently or in combination with expert evaluation.

The task of the study was to generalize approaches to the assessment of the development of the logistics system in a strategic aspect, to form an integrative approach to such an assessment and to develop proposals for the assessment of the logistics system on the example of the private enterprise " Epicentr ".

Based on the received data, we determined that the level of logistics service of the company is provided by 79%, and, in turn, indicates a fairly good level of the company, but still needs significant improvements.

The company " Epicentr " does not provide all the services that it can provide in the process of selling its products. Therefore, in order to improve the level of logistics service, it is necessary to add to the list of company services those services that the company did not use before. This will significantly increase the level of logistics service and increase the company's rating among competitors.

To assess the level of logistics service, the most significant types of services are selected, the provision of which is associated with significant costs, and the absence of which is associated with significant losses on the market.

Starting from 70% and above, the cost of service grows exponentially depending on the level of service, and after reaching the level of 90%, the increase in the volume of logistics service becomes unprofitable. At the same time, a decrease in the level of service leads to an increase in losses caused by the deterioration of service quality.

On the other hand, a decrease in the level of service leads to an increase in losses caused by the deterioration of service quality.

To determine the optimal level of service, a kind of balancing of costs, income of the population and profit is carried out, the principle of a compromise solution is implemented, in which firms make efforts to achieve the best ratio between prices and level of service, between costs and income. In fact, this procedure boils down to the fact that the costs associated with an increase in the level of service are compared with the loss of income from the sales market, which increases when the number of services is reduced. As a result of balancing, there is

a certain optimum level of service. The customer incurs losses depending on the level of service.

The task of the logistics service is to find the optimal level of service. Graphically, the optimal size of the service level can be determined by constructing a cumulative curve F, which reflects the behavior of costs and losses depending on the level of service.

As a result of the difficulties of finding peace and practical implementation, the optimal level of service for the brokerage firm and its clients is focused on "good enough solutions" - on a satisfactory balance of costs and income. Quite often, the scale of services, at the request of consumers, depends on the limited budgetary possibilities of the consumer and some marginal level of service.

Thus, the growth of the company's competitiveness, caused by the increase in the level of service, is accompanied, on the one hand, by a decrease in losses in the market, and on the other hand, by an increase in service costs. The task of the logistics service is to find the optimal level of service.

One of the main problems in managing the procurement of material resources is the choice of supplier. Its importance is explained not only by the fact that there are a large number of suppliers of similar material resources on the modern market, but mainly by the fact that the supplier must be a reliable partner of the enterprise in the implementation of its logistics strategy.

" Epicentr " has several suppliers for one type of product. After calculating the rating of suppliers for this type of product, it was found that it would be optimal to conclude a contract with " MUK " LLC (Supplier A) . Also, as a backup option, you can negotiate with LLC " NETWELL " (Supplier G), since it is next in the calculated rating.

The logistics activity of each enterprise requires constant development and improvement, but at the same time a deep study of all possible factors of influence and individualization of each innovation. Science is developing, new technical inventions appear, which are successfully applied in logistics, which significantly simplifies production and increases the efficiency of the company's logistics

activities. In logistics, there is always a conflict: money or time (trade off), while due to innovations in logistics, you can achieve the effect of "trade up" - reduce both money (costs) and time, and also add added value to the client. Innovative introductions at the enterprise will make it possible to strengthen the competitive position of stronger enterprises and eliminate weaker ones from the market, which will also have a positive effect on the quality of products, which is positive for the buyer.

Logistics innovations, as a direction of logistics activity, consider innovations in the entire logistics complex, and in this connection provide for the addition of existing and the development of new tools (methods, criteria, indicators) in the field of methodological support of logistics used in the organization and management of material production and the sphere services, as well as improvement of operations and procedures used in logistics business processes.

Thanks to the introduction of innovations, " Epicentr " will be able to carry out its own commercial activities more efficiently and, in turn, will receive more profit.

CHAPTER 3. WAYS OF IMPROVING THE MANAGEMENT SYSTEM OF LOGISTICS OF EPICENTR K LIMITED LIABILITY COMPANY LLC

3.1. International practice of the logistics management system

The international practice of the logistics management system encompasses a broad spectrum of interconnected activities, which facilitate the movement of goods and services across various global locations. In the context of international logistics management, the coordination and integration of these activities are paramount to ensure the efficient flow of products and materials. From procurement and production to distribution and reverse logistics, the intricate network of supply chains necessitates meticulous planning and execution to address the complexities inherent in cross-border operations. Factors such as customs regulations, diverse transportation infrastructures, and cultural nuances further underscore the multifaceted nature of international logistics management. Moreover, the increasing emphasis on sustainability and environmental responsibility has led to the integration of green logistics practices, emphasizing eco-friendly transportation modes and energy-efficient supply chain operations. As a result, international logistics management continues to evolve, driven by advancements in technology, globalization, and the imperative to achieve operational excellence in a dynamic and interconnected world. The international practice of logistics management systems encompasses the coordination and optimization of complex operations within a global supply chain network. It involves the strategic planning, implementation, and control of efficient movement and storage of goods, services, and related information from the point of origin to the point of consumption.

Logistics was first applied and recognized in military operations, its most significant impact is felt through the functions of production, distribution and consumption (Rodrigue and Slack, 2002). It became a large-scale activity during the industrial revolution. The origins of the modern distribution sector date back to the emergence of the capitalist economy, the development of specific modes of

industrial production and the deployment of a particular division of labor. This creates a distinct “sphere of circulation” between production and consumption (Marx, 1939/1953). To a certain extent, circulation enabled the transition from use value to exchange value, and thus made possible the large-scale capitalization of commodities. Retailing and marketing have become part of modern management practice (Chandler, 1977) and have been important factors in wealth generation.

From a global perspective, the management of logistics systems is essential for facilitating trade, ensuring the timely delivery of goods and services, and minimizing operational costs. The interconnected nature of international trade necessitates the seamless integration of transportation, inventory management, warehousing, and information systems to achieve operational excellence.In the realm of third-party logistics providers, the international practice of logistics management systems relies on the expertise of professionals who specialize in supply chain optimization, customs compliance, and risk management. These professionals play a crucial role in ensuring the smooth flow of goods across borders while adhering to international regulations and trade agreements.

The excerpt provided by Fredrik Nilsson discusses the application of grounded theory, initially described by Glaser and Strauss in 1967, in the context of logistics research. Here are some key points from his article called Logistics Management in Practice:

Grounded theory is described as an inductive method that generates theory through field data. This means that it does not start with preconceived theoretical propositions or deductively derived hypotheses. Developed for social science research, grounded theory has the potential to be valuable in understanding the socio-technical nature of logistics.The use of grounded theory in logistics is reported to be rare, as indicated by Flint and Mentzer (2000).Flint and Mentzer (2000) suggest that grounded theory offers significant opportunities for future logistics theory development.The text mentions examples of the use of grounded theory in logistics research, such as Flint and Mentzer's examination of logisticians' roles

and Pappu and Mundy's study of transportation buyer-seller relationships.The main method used for data gathering in the discussed study was semi-structured interviews with topics that evolved over time. The majority of the topics were areas to discuss, while a small number were for the responder to fill in and comment on.There is a debate on the role of literature reviews during the research process. While Glaser advises neglecting literature reviews to avoid "contamination" of the researcher's interpretation, others suggest that a certain degree of theoretical sensitivity and literature study can be helpful in focusing the study and providing a framework for initial questions and discussion subjects.

The author acknowledges that theoretical and literature-based thoughts have influenced the creation of topics and the perspective of the research phenomenon, making it an abductive research approach rather than a purely inductive one.

Despite statements about most logistics activities proceeding rather well, all the participants in the study felt that the perceived uncertainty was growing.

This perception of increased uncertainty was attributed to an overall increased complexity, which had an impact on the participants' logistics processes and activities.

The analysis of the perceived uncertainty led to the identification of four uncertainty dimensions. These dimensions likely represent the specific areas where the participants experienced or perceived heightened uncertainty within their logistics processes and activities.This passage highlights the subjective experience of growing uncertainty in logistics activities, despite the general sense that most activities were functioning well. It also signifies the identification of four distinct dimensions of uncertainty, shedding light on the specific factors contributing to the perceived increase in uncertainty within logistics operations

The passage provided Fredrik Nilsson discusses various findings related to logistics and customer demands as identified in existing literature. Here's a breakdown of the key points mentioned:

Trend in Industry:

The requirements and demands from customers are increasing in scope.

This trend has been identified earlier by Caridi and Cigolini (2002), Flint and Mentzer (2000), and Kehoe and Boughton (2001).

Logistics Strategic Priority:

Stock et al. (1999) stated that in the new competitive environment, logistics must be accorded a high strategic priority and cannot be viewed merely as a cost of doing business.

Some participants verified this statement, but the overall interpretation was that the identification of logistics as a high priority was still in its initial stages.

The recognition of logistics as strategically important was considered rather low but growing.

Treatment of Uncertainty in Logistics:

The overall message found in logistics literature is often about reducing uncertainty as much as possible.

The logistics discipline emphasizes the reduction of uncertainty and striving towards states of equilibrium and stability.

Lambert et al. (1998) emphasize that an effective organization must exhibit stability and continuity.

Lambert and Cooper (2000) state that controlling uncertainty in customer demand, manufacturing processes, and supplier performance are critical to effective supply chain management.

This text above reflects the evolving nature of logistics and the increasing demands from customers, as well as the growing recognition of the strategic importance of logistics within the industry. Additionally, it highlights the emphasis placed on reducing uncertainty and ensuring stability in supply chain management, as noted in the existing logistics literature.

The result soft his study clearly show that a difficult aspect of the logistics manager's job is related to the integration of soft elements with concepts, technology, etc. The participants think that knowledge is an important element, but the main problem is its understanding and interpretation by those involved in logistics activities and other functions.In other words, how does the understanding

and interpretation of individuals and organizations relate to logistics concepts and know-how?Regarding the new paradigm in planning and management along the manufacturing supplychain, Kehoe and Boughton (2001,p. 587)stated the following:

“although organizations will need to fundamentally change the way they do business, the barriers lie with the business processes rather than the technology”

Therefore, the findings of this study point toward a need for the logistics discipline to focus more on complex theories of logistics.

Logistics managers face complicated problems as a result of the events and phenomena with which they are confronted.Another challenge stems from assertions of rising complexity and uncertainty, as well as a need for simple frameworks and concepts. As a result, basic models and frameworks provide a strategy or answer to dealing with rising complexity and ambiguity! Simplified models can drive rationalization and efficiency improvements, but they can also make logistics processes more volatile and vulnerable, potentially limiting further development due to the risk of failure.This might imply that the volatility and sensitivity to details seen in today's linked logistics networks may limit logistics innovation potential. Thus, while the unpredictability of logistics operations may call for gradual changes, rising market demand may necessitate radical reform initiatives in order to achieve a competitive edge. Logistics managers face an efficiency/effectiveness paradox: doing things correctly vs. doing the right things, which might impact their interpretation.Finally, the discovery of information vs. comprehension and sense-making complicates the problem for logisticians. As previously indicated, the change from advocating for greater information and visibility to emphasizing comprehension and sense-making exposes yet another contradictory position. This is connected to the fundamental idea that having more knowledge leads to better comprehension and sense-making. Participants reported that while technology advancements made daily tasks simpler, they also made life more challenging when something uncommon or new occurred. Everyone agreed on one thing: unexpected and novel things happened frequently.As a result,

comments in the literature regarding lowering uncertainty through additional knowledge have two dimensions, which may create contradictory results. However, for logistics everyday labor, the additional information may be significant, since participants stated that they perceive a rising and fast changing complexity in their businesses' surroundings. Thus, unique and unexpected events may occur. As a result, various techniques, possibly with a larger emphasis on comprehending and making sense of information than merely technical and conceptual connected to information, may be applicable.What can be inferred is that modern logistics is not about following a straight line to a set objective, where deviations and disruptions must be resolved in order for businesses to resume normal operations. Logistics may be understood as a paradox of transformational change processes, where the future is full with possibilities, and the only certainty is that it will not be the same as before. Simultaneously, continuity is maintained in the collective; in human-created routines in day-to-day logistical tasks. Logistics management focuses on addressing challenges and issues that arise during the logistics process. Thus, logistics is about people and their perspectives on change.Therefore, logistics is about people and their perspectives on change. Their impressions are based on their comprehension and sense-making of the logistical tasks required for meeting and exceeding client needs on a regular basis.This research initiative produced first, empirically derived justifications for a theory of complex logistics. Companies are growing more diverse in their connections with suppliers and consumers, and given the heightened instability affecting practically all industries, the complexity faced by logisticians is undeniable. The obstacles that logistics managers face in their profession have prompted the development of complicated logistics theories. These difficulties are distinguished by freshness (the problems are contemporary) and paradoxes that are "unsolvable in nature" and can only be addressed by balancing efforts on a daily basis. This complexity must be considered when approaching logistics processes and phenomena in order to provide greater knowledge for those engaged and impacted, as well as for making sense of logistics phenomena.

Moreover, the integration of advanced technologies such as Artificial Intelligence (AI), Internet of Things (IoT), and blockchain has revolutionized the international practice of logistics management systems. These technologies enable real-time tracking of shipments, predictive maintenance of transportation assets, and secure digital documentation, thereby enhancing transparency, traceability, and security across global supply chains.

Here are some key best practices for managing global logistics:

1. Evaluate and determine the right global logistics operating model

Companies that succeed in global logistics evaluate and choose the best logistics operating model, including deciding which logistical services to outsource and which to maintain in-house.They ask themselves: Is it vital to build in-house expertise in logistics network design, sourcing and management, transportation capacity planning, global shipment planning, visibility, and event management? Should organisations outsource some logistical execution services, such as ocean transportation prebooking and booking confirmation, export/import customs clearance and document compliance management, and warehousing and storage?Furthermore, global multi-divisional corporations are establishing a shared-services organisational framework to acquire, plan, execute, monitor, and measure global freight movements. Global logistics organisations are transitioning to "internal 4PL" business models in order to successfully manage and service the demands of several lines of business and geographies.

2. Establish strategic relations with logistics service providers and get alignment on performance metrics

Given global transportation capacity challenges and the necessity for logistics service providers (LSPs) to offer high levels of service, prominent corporations are taking their partnerships with service providers to a new level.

"LSPfriendly" programmes are being designed to improve collaborative pricing negotiation and bidding procedures, give ahead visibility into logistical capacity demands, and provide packaging that is easy to handle. To ease their customs clearance operations, topper-forming firms use customs brokers, freight forwarders, and other third-party vendors.They are developing long-term connections with customs officers. Local expertise can help to minimise delays and ensure correct document compliance.Robust global logistics metrics and key performance indicators (KPIs) are being established and deployed to grade LSP performance, continually monitor performance, and align payment conditions with these metrics.

3. Deploy global visibility and exception management processes and systems

Visibility into the order and shipment life cycles is just as important as third-party partnerships when dealing with the complexities of global logistics execution. Companies can mitigate the negative effects of handoffs and other potentially delaying processes in global logistics by obtaining early visibility into exceptions and proactively alerting the appropriate parties involved.

This visibility and exception-management infrastructure must extend across the various legs and milestones in the global flow of goods. Visibility is not a panacea for resolving all of the complexities of global logistics. However, when combined with intelligent exception management, logistics planning, and execution workflows, this layer of global visibility can be a very powerful tool in managing variability in the global flow of goods.

4. Optimize the global flow of goods through intelligent routing and consolidation

Companies that have expansive shipment volumes in particular locales are taking more noteworthy control of universal transportation arranging forms. Customarily, most companies have had settled trade rules to decide steering for

particular nations of beginning and goal.Given the ought to bargain with transportation capacity issues as well as to maximize utilization of holders, they're presently moving toward a more energetic prepare – one in which they can make decisions on ports and inland modes and carriers, and hunt for solidification openings over their worldwide shipment volumes. Leading companies are powerfully assessing choices for doing merge-in-transit, leveraging centers for pool conveyance, doing trans-loading, and diverting-intransit when suitable to diminish cycle times and costs.

5. Institute a continuous process for ongoing logistics network design and scenario analysis

To maximize the benefits of global logistics, companies must continually evaluate their global logistics networks and evaluate factors such as logistics networks, lane structures, transport modes, and transport capacity requirements

In the past, such exercises were typically conducted annually or every two to three years. However, the fast pace of modern global business requires that logistics network design be evaluated more frequently. By using scenario planning, what-if analysis, and management, today's organizations can benefit and minimize the risks associated with global sourcing.

3.2. Modern know-how in the sphere of the management system of logistics

The continuous adjustment and improvement of processes is a key mechanism for the functioning of the company in modern conditions and a significant competitive advantage. Supply chain management practices impact not only overall organizational performance, but also competitive advantage of an organization (Karimi and Rafiee, 2014).The proper supply chain management is a process that reduces costs and increases the competitiveness of

the company (Kumar et al., 2006). Hence, the logistics needs to respect the process of planning, implementation and control of the procurement, storage, transport and information and with the sole purpose to improve them. Every company should develop an appropriate mission and vision in order to implement its business logistics. The mission of the business logistics is to ensure availability of the right product in the right quantity, on the right place, at the right time and to the right buyer at the right price. The vision of the business logistics is to ensure sustainable development, or to set logistics activities and operations in order to get the final results with the least possible level of coordination, maximum synergy and lowest costs in accordance with all environmental and consumer laws. Mentzer and Konrad's (1991) definition of logistics effectiveness is the extent to which the logistics function's goals are accomplished.

Based on the real-time information, there are several modern approaches and technologies in the sphere of logistics management systems. Here are some key points:Modern logistics management systems are based on the idea of using the latest technology programs to mesh with other physical and digital technologies.This integration helps to redesign logistics processes and improve efficiency.Logistics management systems automate various processes, including order processing, inventory preparation, item packing, and dispatching. This automation reduces manual errors, saves time, and improves overall productivity.Technology plays a crucial role in modern logistics management. GPS tracking systems are used to track vehicles and packages in real-time. This enables better route planning, improved delivery tracking, and enhanced customer satisfaction.Modern logistics involves the use of automated warehouse management systems. These systems optimize warehouse operations, such as inventory management, picking, and packing. They help streamline processes and ensure accurate inventory control.The logistics industry is constantly evolving, and there are several emerging trends that will shape logistics management in the

future. These trends include the use of artificial intelligence, robotics, blockchain technology, and sustainability practices.It's important to note that these are just a few examples of modern know-how in logistics management systems. The field is continuously evolving, and new technologies and approaches are being developed to improve the efficiency and effectiveness of logistics operations.

Logistics implicates to the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements. It comprises the management of raw materials flow to finished goods through an organization. Logistics means planning and organizing activities that ensure that resources are in place so that the process can be effectuated accordingly in efficient and effective manner (Mellat-Parast and Spillan, 2014). The main functions of logistics managers involve organizing and planning of inventory, purchasing, transportation, warehousing activities. The logistic activities can be divided in two categories (Lambert and Burduroglo, 2000):

• Inbound Logistics, that refers to the activities connected with the procurement of material, handling, storage and transportation; and

• Outbound Logistics, that refers to the activities connected with the collection, maintenance and distribution or delivery of the product to the final consumer.

Accordingly, logistics is strategically important in many industries as it is central to achieving competitive advantage (Kenyon and Meixell, 2007). However, companies must respond to changing customer needs, and logistics flexibility is an important part of the response (Zhang et al., 2005). Each company must develop or create its own logistical values that will be incorporated into the product, or its value in use. For customers despite the shape of the product, it is important that it will be accessible to them in the required time.

There are six reverse logistics capabilities that have impact on companies' performance: logistics information management, close-loop capability, supply chain integration, supply chain coordination, conformity capability, and institutional incentives (Vlachos, 2016).

In today's dynamic competitive environment, logistics management strategy plays a significant part in the overall corporate governance, especially in the area of asset management and financial flows of the company. In other words, the use of logistical savings will allow the policy of lower prices, longer payment terms, and higher level of service to customers and therefore, increased operating efficiency

Behind every business there are complex flows of goods, services, data, information, people, money. Carefully monitoring these flows means improving business performance, reducing waste, losses and errors. For this reason, the consultants at Know-How analyze with particular attention the logistics of your business, both the passive and active cycles.

The procurement process includes the interactions that each company has with its suppliers and for which it has the financial outlays: definition of suppliers, analysis of the flow of materials and documents involved in the process of the procurement process, definition of criteria to create statistics and rank suppliers. The active cycle concerns the management of the client data and documents used for the sale of goods or services, up to the delivery and billing or the issuing of credit notes.

While defining the relationship between knowledge management skills of the company and execution of logistic processes, it should be stipulated that these issues can be considered from the perspective of a single company or a supply chain (system of cooperating companies) (Pérez-Salazar et al ., 2019). However, it may be assumed that knowledge management skills of a company have a positive influence on the practices implemented within the framework of the supply chain as well as on the results obtained by the company (Bahar et al., 2020). It is also

emphasized that reaching a competitive position as a result of reducing costs of conducting a business activity depends both on the appropriate exploitation of knowledge resources and technologies applied (Karia, 2018; Bahar et al., 2020). This technology refers both to logistic processes and the issue related to knowledge resources. Therefore, in a conceptual and planned way it must also encompass the issues related to the flow of information in the company/between companies, their forms (form of organizational documentation and databases) (Kivits and Furneaux, 2013) as well as the aspect of employees' access to them and skills of their creation and exploitation (Komańda, 2019). Relationships of this kind also explicitly indicate the issue of the situational context of the implementation of knowledge management solutions.

In today's rapidly evolving business landscape, the management of logistics has become a critical aspect of ensuring operational efficiency and customer satisfaction. Modern technological advancements have significantly impacted the field of logistics management, reshaping the way organizations plan, execute, and optimize their supply chain operations.The integration of cutting-edge technologies, such as Artificial Intelligence (AI), Internet of Things (IoT), and advanced data analytics, has revolutionized the management system of logistics. These innovations have empowered organizations to streamline their supply chain processes, enhance visibility and tracking, and make data-driven decisions to address operational challenges.

From a first-person perspective, I have personally witnessed the transformative impact of modern technologies on logistics management. The implementation of AI-powered predictive analytics tools has allowed companies to forecast demand more accurately, optimize inventory levels, and mitigate potential disruptions in the supply chain. Additionally, IoT-enabled devices have provided real-time insights into the movement of goods, enabling proactive intervention to address delays and improve overall delivery timelines.

From a third-person standpoint, it is evident that the adoption of modern know-how in logistics management has yielded substantial benefits across various

industries. Organizations have leveraged advanced warehouse management systems, automated material handling equipment, and smart transportation solutions to optimize the flow of goods and minimize operational inefficiencies. Moreover, the use of blockchain technology for supply chain traceability has enhanced transparency and trust among stakeholders, contributing to a more secure and resilient logistics ecosystem.

Despite these advancements, it is essential to acknowledge the inherent challenges associated with embracing modern technologies in the management system of logistics. From a neutral perspective, organizations often face complexities related to data integration, cybersecurity threats, and the need for upskilling the workforce to harness the full potential of these innovations. Furthermore, the initial investment required for deploying state-of-the-art logistics technologies may pose financial constraints for some businesses, necessitating a careful cost-benefit analysis and strategic implementation roadmap.

To address these challenges, a balanced approach combining strategic planning, agile implementation, and continuous evaluation is paramount. Organizations must prioritize cybersecurity measures, invest in comprehensive training programs for employees, and collaborate with trusted technology partners to navigate the complexities of modern logistics management effectively.

3.3. Substantiation of improvement of international transport operations of EPICENTR K LIMITED LIABILITY COMPANY LLC

It is emphasized that contemporary logistic workers should therefore possess skills within the scope of supply chain management, handling of technological solutions as well as interpersonal and managerial skills, including especially communication skills (Gammelgaard and Larson, 2001). These skills seem to be of key significance for shaping behaviors of entities within the framework of the supply chain. This is, in turn, a significant issue for the integration of the chain itself (Yang, 2013) as well as for the development of relationships with clients

(Marra et al., 2012) for the purposes of offer modification with regard to their expectations (Del Giudice et al., 2016). Taking also a broad spectrum of stakeholders into consideration in the studies in the analyzed problem area (at least both suppliers and clients) makes it also possible to capture, in a more visible manner, the relationships between knowledge management and business results achieved within the framework of the supply chain (Wowak et al., 2013). The arrangements made make it possible to state that human resources are one of the main factors shaping the development of logistics, and therefore also conditioning the possibilities for the implementation of knowledge management solutions in this area of company's business activity to a large extent (Durst and Evangelista, 2018). Human resources, however, maintain a dynamic relationship with the remaining pillars of knowledge management which are also important for the performance of logistic tasks in a company. These are the processes and technologies applied (Schniederjans et al., 2020). It is worth stating that the potential of technological solutions is fully implemented only with their proper combination with the solutions in the area of human resources management (Andreeva and Kianto, 2012). However, in this context certain incompatibility appears which is related to practical application of knowledge management solutions in the area of company logistics. On the one hand, a positive relationship between knowledge management application and operating efficiency and organizational results is emphasized (Fugate et al., 2009). It results in the pursuit of implementation and exploitation of knowledge management solutions. On the other hand, some research results point out that despite the existence of the aforementioned benefits from the implementation of knowledge management solutions, there is a lack of proper understanding of this subject among decision makers. They frequently lack knowledge about how to do it in a way adjusted to their own needs (Neumann and Tome, 2009). Unfortunately, the issue of barriers in the implementation of knowledge management solutions in the area of company logistics and the supply chain has not developed with due dynamics in the literature (Cerchione and Esposito, 2016). The outlined conditionings for employees' development

(including logistic professionals) working in the companies that frequently function within the framework of supply chains make it possible to state that the implementation of new technologies and training on how to use them will not be enough (Kianto et al ., 2018).

The attention should also be paid to individual competence gaps and training needs. This entails the introduction of properly prepared evaluations within this scope as well. They should take into consideration the individual employees' context that impinges upon the scope and level of indispensable competencies (Klump et al., 2019). Moreover, two significant aspects should be taken into consideration. These are the aspects that shape prospective solutions within the scope of knowledge management and that, as a result, translate to the possibility of proper support of the course of logistic processes in the company and supply chain. Firstly, it is postulated that, as a consequence of conducted researches, a challenge of taking into account both formal and informal flows of knowledge in the knowledge management should be undertaken. The latter are frequently reduced in the conducted analyses. However, due to organizational culture dominating in a given company, informal flows of knowledge may play a very significant role in efficient knowledge exploitation as well as in obtaining business results (Blome et al., 2014). Secondly, the knowledge that is subject to exchange either within the framework of a company or the supply chain, can be diversified with regard to its substantial content and managerial problems it concerns (Done, 2011). It may also represent various forms which, depending on the accepted knowledge classification model and implemented solutions within the scope of information policy as well as technological solutions, will be a part of specific interpretative and design framework (Sudhindra et al., 2014). It requires the assumption that individual employees play different roles in the processes of knowledge creation and use (Dziubińska, 2017).

To optimize the company's foreign trade operations, it is necessary to take into account not only the planned costs, but also the possibility of unforeseen

circumstances that create the risk of certain financial losses. For the effective use of tools for managing foreign economic activity, you need to know to what goals and problems the enterprise will apply them. So, in Table. 3.1.1 we collected the following 5 risks, which are the most dangerous for the risk-free implementation of export operations of Epicentr-K LIMITED.

Table 3.1.1

Risks of ZTO of Epicentr-K LIMITED and their characteristics

Type of risk	Characteristic
Transport risk	Risk of damage to cargo during transportation
Currency risk	Exchange rate risk
Banking Risk	Risk of payment delay by an intermediary bank
Entrepreneurial Risk	Risk of late delivery of goods
Legal risks	Risks arising as a result of changes in legislative acts

Source: compiled by the author

Basically, Epicentr-K LIMITED is engaged in the export of goods and the supply of goods is most often carried out on the terms of Incoterms-2020 CIP. Under such conditions, if Epicentr-K LIMITED is an exporter, then the company is obliged to pay the costs and transportation necessary to deliver the goods to the specified point of destination. Under the terms of the CIP term, the seller is obliged to clear the goods for export through customs, but the researched enterprise employs professionals with both the same goods, so the risk of incorrect customs clearance is minimal, so we will not take it into account. Epicentr-K LIMITED does not have a risk manager, so the company does not calculate the probability of occurrence of a particular risk situation.

Therefore, thanks to the method of analyzing the existing information

regarding Epicentr-K LIMITED, we compiled Table 3.1.2 with possible costs and the probability of a risk event.

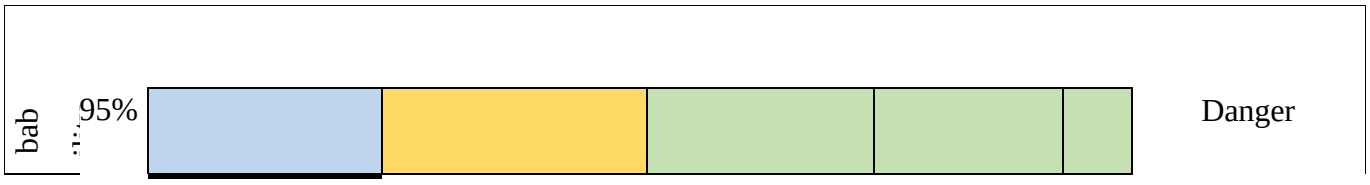
Table 3.1.2

Export risks, their probability and possible costs

Indicator	Costs, USD per unit	Probability
	Ki	Pi
Risks arising as a result of changes in legislative acts	10	0,1
Risk of damage to cargo during transportation	25	0,07
Risk of late delivery of goods for export	30	0,05
Risk of depreciation of the exchange rate	30	0,3
Risk of exchange rate appreciation	0	
Risk of payment delay by an intermediary bank	15	0,48
∑		1

Source: compiled by the author

For a more visual representation of the danger of each risk, I have drawn up a risk map of the researched enterprise (Fig. 3.1.1). The risk map contains 5 main risks that concern the company the most. The abscissa axis shows the score of the amount of losses in the event of a particular risk event (from 1 to 5, where 5 is the largest cost); the ordinate axis depicts the probability of a risk event occurring; Colors indicate the degree of danger.



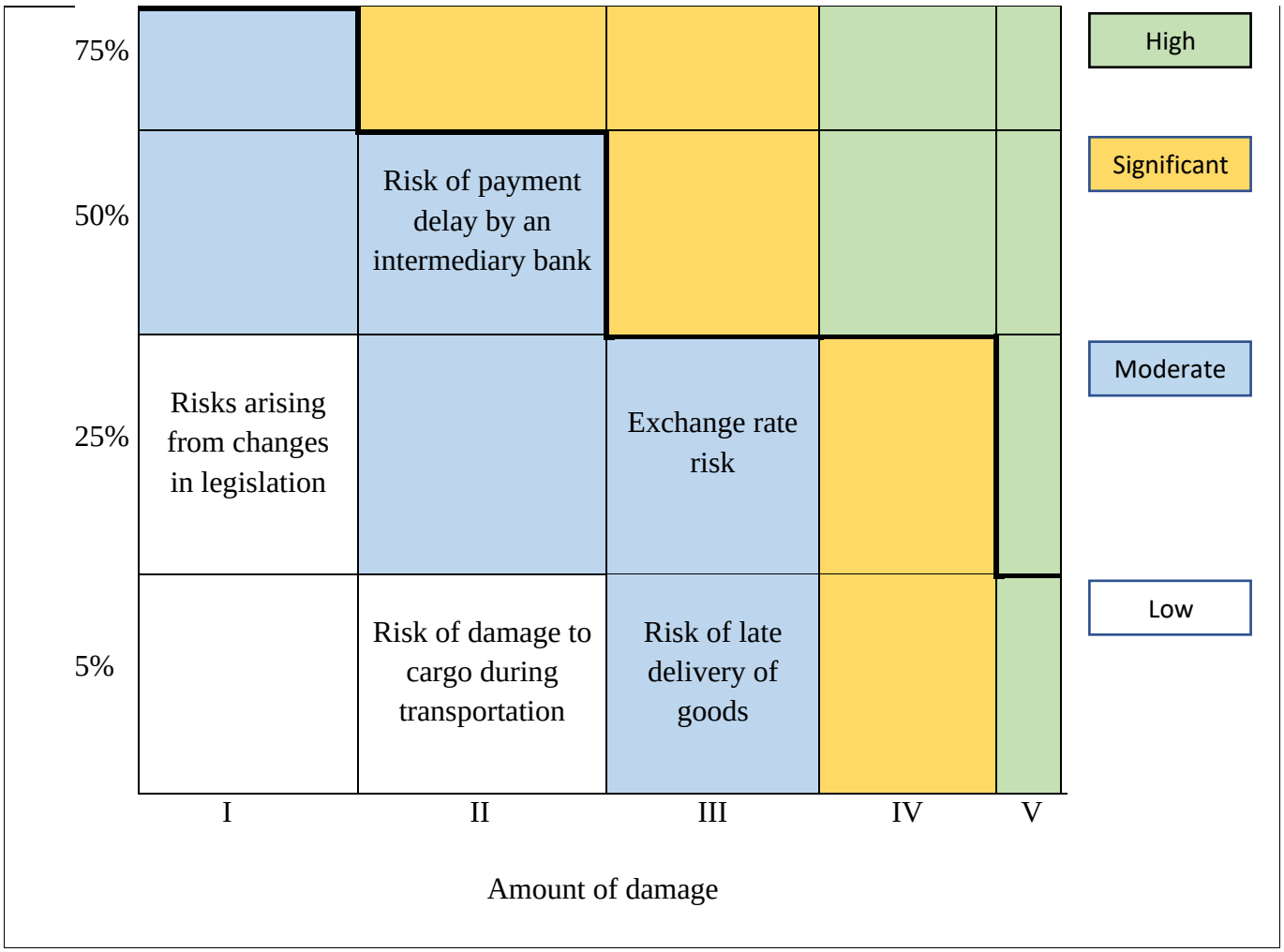


Fig. 2.1.1. Risk map *of* Epicentr-K LIMITED

Source: developed by the author according to the company`s data

The expected value shows the average cost that a company can expect if one of the selected risks is accurate. Of course, the higher this indicator, the more profitable is the company's development strategy. Figure 3.1.1 depicts the risks of export operations under the terms of Incoterms-2020 CIP and measures to minimize them.

Table 3.1.3

Assessment of risks of export operations and measures to minimize them

Types of risks	***Probability***	***Weight***	***Mark***	***Minimization measures***	***Risk mitigation, %***	***New Score***
Risks of changes in legislative acts	0,1	10	1	Self-insurance	50%	0,50

Risk of damage to cargo during transportation	0,07	25	1,75	Property & Raw Materials Insurance	28%	1,26
Risk of late delivery of goods	0,05	30	1,5	Conclusion of additional agreements on the supplier's liability regarding the terms of delivery and determination of the terms of compensation for losses	40%	0,90
Exchange rate risk	0,3	30	9	Hedging in the form of forward contracts	50%	4,50
Risk of payment delay by an intermediary bank	0,48	15	7,2	Impossible	0%	7,20
∑	1	X	**20,45**	X	X	**14,36**

Source: developed by the author according to the company`s data

For each risk, a hazard score was calculated separately, the percentage of risk reduction from the selected minimization measure was taken into account, and a new score was calculated. The new score was calculated using the formula 3.1.1:

$$К_i^1 = К_i^0 \cdot P_i(1 - R_i) \quad (3.1.1)$$

$К_i^1$ – weight (possible costs);

P_i –Probability;

R_i – the percentage by which the risk will be reduced by a risk minimization measure.

Thus, due to the statistical method of determining the weighted average, a new mathematical expectation of the average costs of an export operation was calculated, provided that one of the risk events occurs. The score has decreased by

6.09 and is now 14.36.

To improve transport operations at «Epicentr» LLC, several strategies can be implemented, including adapting blockchain technologies, using vehicles with low fuel consumption, optimizing the collection and picking of orders, and implementing measures to optimize travel routes and reduce idle running.

The implementation of modern communication and navigation technologies is crucial for finding the most efficient and cost-effective traffic routes. GPS navigation systems are particularly important in streamlining traffic.

Additionally, it is important to calculate the necessary vehicle fleet in terms of quantity and carrying capacity, sell unused vehicles, and ensure timely updates to the fleet.A financially responsible system of cargo rates for customers should also be established.The company employs a flexible system of settlements with contractors and utilizes modern personnel motivation systems.

It aims to form a positive image by fulfilling obligations to customers and partners, maintaining responsibility for the timing and quality of services provided, and demonstrating solvency and reliability.

The issue of locating transportation and cargo for both parties persists, despite advancements in internet technology. Furthermore, the lack of cargo control by the owner during transportation has led to the proliferation of smuggling and illicit schemes. Intermediaries are often utilized to address this problem, but this increases transportation costs due to the additional links in the chain. Furthermore, the lack of cargo control by the owner during transportation has led to the proliferation of smuggling and illicit schemes. Furthermore, the lack of cargo control by the owner during transportation has led to the proliferation of smuggling and illicit schemes.

The delivery process is further complicated by the interaction between officials, logisticians, and forwarders. The situation is exacerbated by customs issues and paperwork related to approval documents and the declaration of goods.

The implementation of a blockchain that can revolutionize the transportation of goods can address these issues[12].

The primary benefits of blockchain technology for the enterprise 'A Ukraine' LLC are that it

- allows for reducing the cost of logistics;
- excludes the possibility of falsification of data. A document entered once, for example, a bill of lading, a receipt or a certificate of conformity, remains in the system in its original form forever;
- eliminates unnecessary intermediaries;
- prevents the mislabelling of illegal goods and other fraud attempts;
- allows for a substantial reduction of the time for document workflow, quick finding of the transportation link where a mistake was made, and reduction of business costs due to losses.

The purpose of this implementation is to develop software that creates a unified data field using blockchain technology. To achieve this goal, the following stages of blockchain implementation at 'A Ukraine' LLC have been identified.

- assessment of the possibility of implementing blockchain in the enterprise. At this stage, programmers require the following data about the enterprise: number of employees, turnover, industry, length of the logistics cycle, number of customers, availability of warranty periods, and service conditions. This data is used to calculate the implementation timing of blockchain technologies in the company, as well as its cost, economic efficiency, and risks. Based on the blockchain analysis, the enterprise has decided to implement the technology.

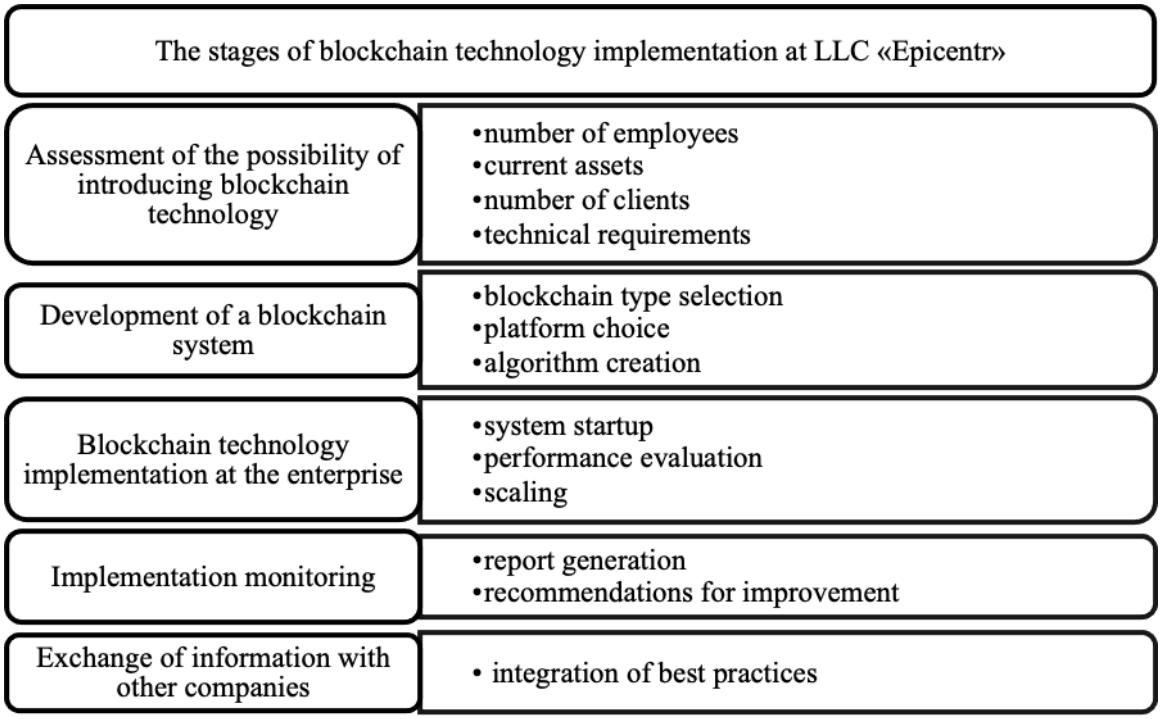
- development of a blockchain system for the enterprise. At this stage, the company has two options. The first option is to use blockchain algorithms that have been developed for each industry and enterprise size, which can be adapted to the specific organization level. The availability of a ready-made program kernel allows for a reduction in implementation costs by up to 70% and accelerates the implementation of blockchain technologies. The second option is to adapt the algorithm by order of the enterprise. The enterprise provides information about the

required blockchain system for the platform administration, which then adapts existing templates for each individual enterprise. The enterprise management chooses the necessary option based on their interests, work specifics, and level of information confidentiality.

The enterprise 'Epicentr' LLC has implemented a blockchain system, which is

- currently being evaluated for its effectiveness and any identified deficiencies or opportunities for improvement are being addressed. The enterprise can generate a monthly report on the implementation of the blockchain technology. Based on this report, recommendations are made for improving the blockchain system and its economic feasibility.
- The enterprise should participate in the blockchain community by sharing implementation results and exchanging information with partner companies in its industry or related fields of activity. The exchange of information can popularize the transport company as a logistics leader and attract new customers, partners, or investors.

Figure 3.1 presents the blockchain technology implementation model at the logistics company «Epicentr» LLC



To implement technology into the existing business model of 'Epicentr' LLC, it is recommended to begin by determining the type of blockchain to be used. For the benefit of the logistics enterprise, a consortium blockchain is preferred over public or private blockchains. Consortium blockchains allow anyone to view the information, but participants can only add information or connect their node with the permission of other participants.

Organizations build blockchains to increase customer trust in their services or the enterprise as a whole. Reliability is achieved through trust between participants and the use of consensus algorithms. To implement the technology, ready-made solutions such as Exonum, a framework for creating decentralized databases based on blockchain technology, should be used.

The "framework" allows the creation of blockchains in which all nodes generating blocks are known in advance. As a result, blockchain administrators can update transaction processing rules. "Exonum" is a flexible tool that allows to create individual blockchain projects and implement turnkey solutions with minimal costs. To ensure the reliability of the stored data and the minimum stability of the system, at least 4 validator nodes integrated into a peer-to-peer network must work simultaneously. In the standard "Exonum" configuration, the number of validators ranges from 4 to 20. Full nodes can run on machines running "UNIX" based operating systems. Preference should be given to "Linux", the latest stable distributions: "Ubuntu", "CentOs". Preliminary analysis suggests that complete nodes can also be deployed on "AltLinux" distributions. Minimum requirements for the computer on which the full node will work:

- Processor with a frequency greater than 2GHz;
- RAM: 4 GB;
- Hard drive: 50 GB;
- A permanent connection to the Internet with a speed of more than 1 Mb/s.

The client node can be launched on a computer running Windows, Linux, Mac operating systems and does not require significant computing resources.

As mentioned in the previous question, the surveyed companies perform an intermediary function. This means that they organize transportation without using their own materials and workforce, with the exception of administrative staff and employees involved in organizational tasks.

Such companies are quite common in the market, but their main disadvantage is that the final transport price of the product is quite high, which most customers cannot afford to pay, forcing them to either look for a company that only deals with transport and takes care of the organizational work, or to find another company that offers the same product at a lower price.

Nowadays, almost all companies prefer to generate income from more than one source of income. This makes it possible to protect against high-risk situations. Therefore, the construction of freight transportation systems occupies an important place in the transportation market.

One of the most important negative factors affecting transportation efficiency is downtime. Vehicle downtime at the border is one of the main reasons for missed deadlines. This is because vehicles have to cross many borders during import/export transportation, which can cause excessive delays in the delivery of goods.

Vehicle downtime at borders can occur for a variety of reasons, but the main ones are

- Insufficient customs capacity;
- Lack of qualified customs personnel; and
- Transition to new customs standards in the country;
- Failure of recipients of imported goods to submit prior notification or prior declaration; - Failure of recipients of imported goods to submit prior notification or prior declaration
- Incorrectly completed documents in customs clearance (incorrect cargo weights in CMR, carnet and Form T); and
- Overloading of vehicles, resulting in road trains not being able to cross the border due to strict restrictions on gross weight or axle load.

The first three of the above are the main causes and require immediate action.

Figure 2.6 shows the dynamics of the causes of vehicle stopping times at the border.

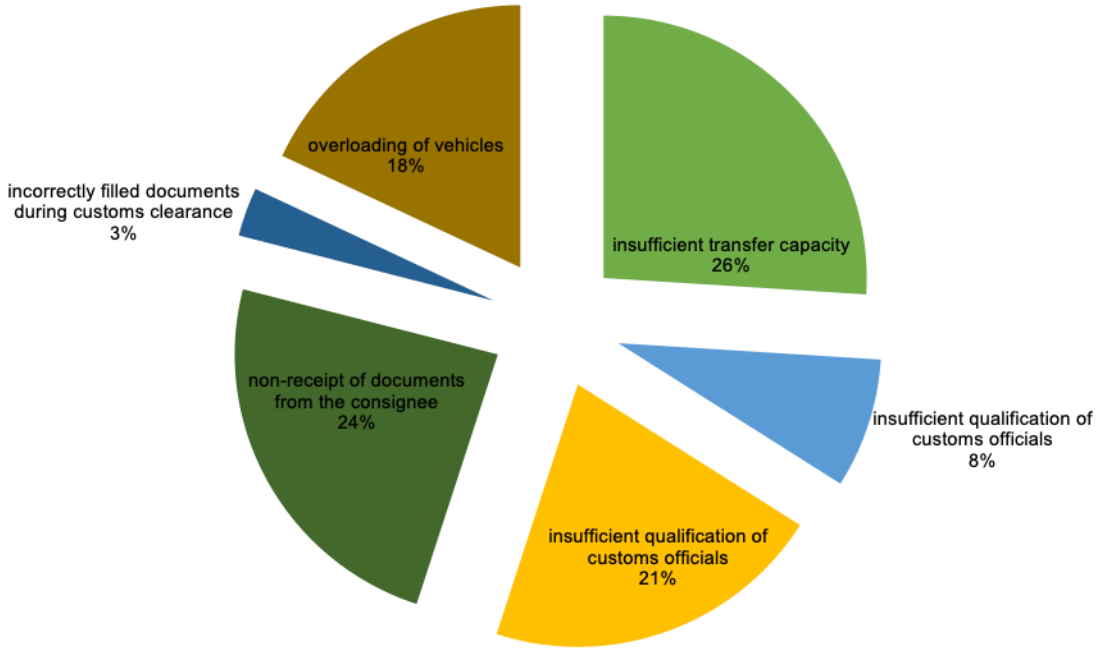


Figure 3.2: Dynamics of the causes of vehicle stopping times at the border

The main cargo operations with Europe at the borders of Ukraine are carried out through the following customs operations:

1. № 85 Yakhodin (Ukraine) - Dorovsk (Poland);

2. №. 86 Rava Ruska (Ukraine) - Hrebenne (Poland);

3. №. 87 Mostyska BCP (Ukraine) - Medica BCP (Poland);

4 № 89 Uzhhorod (Ukraine) - Visne Nemetske (Hungary).

Customs transit numbers are listed according to the IRU (International Route Union) customs transit classification.

Let us analyze transport efficiency. To do this, let us analyze transport efficiency on a single route: Kiev-Rotterdam route.

A Renault car flew on the Kiev-Rotterdam route. The route was Kiev - Lviv - Mostyska - Krakow - Dresden - Erfurt - Dortmund - Rotterdam (Table 3.1).

Table 3.1.

Profitability of transportation on freight routes.

Kiev (Ukraine) - Rotterdam (Netherlands),

Renault 455-31 TS, 168-81 TA

	Order	054/10		
	Freight	**1500 EUR**		**15000.00**
		Within Ukraine	Outside of Ukraine	**In all**
Mileage, km		600	1655	2255
Autodays		4	6	10
Avg. the price of fuel		5,75	1,32EUR	
Quantity of fuel, l.		222	612.35	834.35
Direct costs				
wage (main)				270
per diem		72	0	72
allowances			140EUR	952
accrual (38,16%)				83,95
fuel consumption		1276.5	808.30EUR	9359,5
travel and customs expenses		91,5	35,10EUR	330,18

securing the flight TIR-карнет, insurance		357	0	357
Other expenses ecology, sink		60,45	5,8EUR	99,89
bank commission		6,75	3,95EUR	33,61
opening of visas, permits		316,68		316,68
Car insurance				0
				11874,8
Production costs	8%			473.9
Lising				1840
Insurance				545
				2858.92
Administrative expenses	3%			**85,77**
In all				**14819,49**
PROFIT				**180.51**

Total distance traveled was 2,255 km, of which 1,655 km was outside Ukraine and 600 km inside Ukraine.

Fuel consumption was 834.35 liters, of which 612.35 liters was consumed outside Ukraine and 222 liters inside Ukraine. The average fuel price in Ukraine was 5.75 euros per liter, while outside Ukraine it was 1.32 euros per liter.

These indicators can be used to calculate fuel consumption of vehicles.

Ukraine.

Avgpru = Fin * Avgpr = 222 * 5.75 = 1276.5 uah ,

where: Avgpru – The average price of used fuel in Ukraine;

Fin – The amount of fuel used by a car in Ukraine;

Avgpr – Average price of 1 liter of fuel in Ukraine.

Outside Ukraine:

Avpcout = Amfuout * Avglout = 612,35 * 1,32 = 808.30EUR = 8083 uah,

де: Avpcout - The average price of fuel used outside of Ukraine;

Amfuout – The amount of fuel used by the car outside Ukraine;

Avglout – The average price of 1 liter of fuel outside Ukraine.

Total price of fuel C = Avgpru + Avpcout = 1276.5 + 8083 = 9359,5 uah.

Let's change the direction of the route.

Kiev - Livne - Ustyrg - Lublin - Wroclaw - Berlin - Bremen - Rotterdam, calculate fuel consumption.

Across Ukraine:

Avgpru = Fin * Avgpr = 173,9 * 5,75 = 999, 925 uah.

Outside Ukraine:

Avgpused = Amfuout * Avglout = 579,05 * 1,32 = 764,346 EUR = 7643,46 uah.

Total price of fuel C = Avpcout + Avgpru = 999, 925 + 7643,46 = 8643,385 uah.

Table 3.2

Profitability of transportation on freight routes.

Kiev (Ukraine) - Rotterdam (Netherlands),

Renault 455-31 TS, 168-81 TA

1	2	3	4	5
	Order	054/10		
	Freight	**1500 EUR**		**15000.00**

Continuation of Table 2.9

1	2	3	4	**5**
		Within Ukraine	Outside of Ukraine	**In all**
Mileage, km		470	1565	2035
Autodays		4	5	9
Avg. the price of fuel		5,75	1,32EUR	
Quantity of fuel, l.		173,9	579,05	752,95
Direct costs				270
wage (main)		72	0	72
per diem			140EUR	952
allowances				83,95
accrual (38,16%)		999, 925	579,05 EUR	8643,385
fuel consumption		91,5	35,10EUR	330,18
travel and customs expenses				
securing the flight		357	0	357
TIR-карнет, insurance				
Other expenses		60,45	5,8EUR	99,89
ecology, sink		6,75	3,95EUR	33,61
bank commission		316,68		316,68
opening of visas, permits				0
Car insurance				**11158,7**
	8%			461,38

Production costs				1840
Lising				545
Insurance				**2846,38**
	3%			**85,39**
Administrative expenses				
				14090,47
In all				
				909,535

This rerouting reduced the distance traveled by 220 km, 130 km within Ukraine and 90 km outside Ukraine. As a result, fuel costs decreased by UAH 276 inside Ukraine and UAH 229.25 outside Ukraine. This increased the profit by UAH 729,025.

Let's analyze the cost of a round trip from Dortmund to Kharkov with the same vehicle. The route was as follows: dortmund - Hanover - Berlin - Wroclaw - Wroclaw - Krakow - Krakowiec - Lviv - Kiev - Kharkov.

The total distance traveled was 2363 km, of which 1316 km were outside Ukraine and 1047 km inside Ukraine.

Total fuel consumption was 874.31 liters, of which 486.92 liters were consumed outside Ukraine and 387.39 liters inside Ukraine. The average fuel price inside Ukraine was 5.75 euro per liter, while outside Ukraine it was 1.32 Euro per liter.

Based on these figures, the cost of fuel for a vehicle can be calculated.

Across Ukraine:

Avgpru = Fin * Avgpr = 387,39 * 5.75 = 2227,5 uah ,

where: Avgpru – The average price of used fuel in Ukraine;

Fin – The amount of fuel used by a car in Ukraine;

Avgpr – Average price of 1 liter of fuel in Ukraine.

Outside of Ukraine

Avgpused = Amfuout * Avglout = 486,92 * 1.32 = 642,70 EUR = 6427 uah,

where: Avgpused - The average price of fuel used outside of Ukraine;

Amfuout – The amount of fuel used by the car outside Ukraine;

Avglout – The average price of 1 liter of fuel outside Ukraine.

Depends on the NBU exchange rate on the day of travel 1 EUR = 10 uah.

Total price of fuel C = Avgpru + Avgpused = 2227,5 + 6427 = 8654,5 uah.

Change the direction of the route and shorten the distance by 77.6 km.

Dortmund - Dresden - Wroclaw - Lublin - Ustyrg - Livne - Kiev - Kharkiv. The total distance traveled is 2,285.4 km, of which 1,395 km outside Ukraine and 890.4 km inside Ukraine.

Total fuel consumption is 845.59 liters, of which 516.02 liters is used outside Ukraine and 342.39 liters inside Ukraine.

Let's calculate the fuel consumption:

Across Ukraine:

Avgpru = Fin * Avgpr = 342,39 * 5,75 = 1968,7 uah.

Outside of Ukraine Avgpused = Amfuout * Avglout = 516,02 * 1.32 = 681,15 EUR = 6811,5 uah.

Average price of fuel C = Avgpru + Avgpused = 1968,7+ 6811,5 = 8780,2 uah.

Table 3.3

Profitability of route transport

Dortmund (Germany) vs Kharkov (Ukraine)

Renault 455-31 TS, 168-81 TA

1	2	3	4	5
	Order	072/10		
	Freight	**2100EUR**		**21000**
		Within Ukraine	Outside of Ukraine	**In all**
Mileage, km		1395	890,4	2285,4
Autodays		5	5	10
Avg. the price of fuel		1.32 EUR	5.75	
Quantity of fuel, l.		516,02	342.39	845.59
Direct costs				
wage (main)				
per diem				260,5
allowances		0	94	94
accrual (38,16%)		155 EUR		1054
fuel consumption				99,4
travel and customs expenses		681,15 EUR	1968,7	8780,2
securing the flight		120,10EUR	98,5	915,18
TIR-карнет, insurance				
Other expenses		0	357	357

ecology, sink				
bank commission		15,2EUR	25,3	128,66
opening of visas, permits		0	3,5	3,5
Car insurance				
				0
Production costs				**11692.00**
Lising	8%			935,4
				1860

Continue table 2.10

1	2	3	4	5
Insurance				545
				3340,4
Administrative expenses	3%			**100, 2**
In all				**15033,00**
Insurance				
				5967,17

Table 3.4

Profitability of route transport

Dortmund (Germany) vs Kharkov (Ukraine)

Renault 455-31 TS, 168-81 TA

	Order	072/10		

	Freight	**2100EUR**		**14280**
		Within Ukraine	Outside of Ukraine	**In all**
Mileage, km		1316	1047	2363
Autodays		5	5	10
Avg. the price of fuel		1,32 EUR	5,75	
Quantity of fuel, l.		486,92	387,39	874,31
Direct costs				
wage (main)				260,5
per diem		0	94	94
allowances		155EUR		1054
accrual (38,16%)				99,4
fuel consumption		642,73EUR	2227,50	2870,20
travel and customs expenses		95,10EUR	98,5	745,18
securing the flight				
TIR-карнет, insurance		0	357	357
Other expenses				
ecology, sink		15,2EUR	25,3	128,66
bank commission		0	3,5	3,5
opening of visas, permits				

Continue table 2.11

1	2	3	4	5
Car insurance				0
				5612,44
Production costs	8%			469,1
Lising				1860
Insurance				545
				2874,1
Administrative expenses	3%			**86,22**
In all				**8824,11**
Car insurance				
				5455,89

The calculations show that the total number of kilometers traveled decreased by 77.6 km, but fuel costs increased. This is due to the fact that the number of kilometers traveled inside Ukraine decreased, while the number of kilometers traveled outside Ukraine increased. Also, fuel and road maintenance costs are much higher in Europe, so costs are correspondingly higher.

This leads to the conclusion that reducing the number of kilometers traveled does not necessarily lead to an increase in profit.

Therefore, in order to increase profits, transport routes need to be chosen rationally.

CONCLUSIONS AND PROPOSALS

The modern stage of development of economic relations requires consideration of an industrial enterprise in constant interaction with suppliers of production resources and consumers of finished products. In the conditions of growing competition, the success of the enterprise depends on the speed of response to constant changes in the environment. Therefore, an industrial enterprise must have management mechanisms that allow for adaptation to market conditions. The implementation of this approach means that it is the consumer who must determine the direction of development of the industrial enterprise. In this connection, there is a need to find such ways of development that will ensure the competitive functioning of the enterprise in the conditions of the market economy. Logistics is one of the effective tools for managing economic activity and ensuring the adaptability of market subjects.

In most cases, road transportation costs are competitive with rail, but trucks usually offer a higher level of efficiency in terms of service. Heavy trucks with van type bodies are mainly used for freight transportation between countries.Some vans are equipped with refrigeration equipment, which allows to transport perishable goods on international highways. Road transport can be used to transport different goods from different shippers or groupage consignments consisting of different goods. If the cargo is to be loaded onto more than one vehicle or different loads or consignments are to be transported, the number of waybills must correspond to the number of vehicles used or the number of consignments to be transported.

Thanks to the second form of logistical support, the organization of supplies of logistical resources, the need for which is irregular and in small batches, is carried out. The specified features of demand are an objective reason for the possibility of increasing costs associated with the delivery of these resources. Optimization of delivery costs is ensured by using certain methods of their organization - transit or warehouse delivery. Cost reduction is also facilitated by the possibility of suppliers using elements of the market infrastructure.

When planning cargo transportation and choosing a vehicle, a number of circumstances must be taken into account.Factors influencing the choice of transport mode in international freight transportation

1) Type of cargo. Cargoes can be divided into general, liquid, and special

regime cargoes. General cargoes include various bulk cargoes (packaged and oversized. By weight, they are divided into light and heavy (each unit of cargo weighs 5 tons or more).Bulk cargoes are cargoes that have a certain structural weight and are transported in large quantities without packaging. They include liquid (oils, fats,alcohol), bulk (ores, concentrates), bulk (grain, sugar) and timber.

Special regime goods include goods that are stored and transported under special rules (dangerous goods, perishable goods).

2) Transportation distances and routes When choosing a vehicle, the place of origin of the cargo and the final point of transportation are also determined.

Rail, pipeline, road and air transport are used for intra-continental transportation, and sea and air transport are used for intercontinental transportation.

3) Time factor. Air transportation is the fastest way to deliver goods.However, air transportation costs are high. Therefore, it is used only when the cargo needs to be delivered as soon as possible (for example, food, flowers).

Information on the types of vehicles most commonly used in international practice for the transportation of goods

International maritime transportation accounts for a significant share of the world's foreign trade turnover - almost 60 percent. Liquid bulk cargoes, such as crude oil, petroleum products, iron ore, coal and grain, make up the bulk of international maritime cargo flows. Other general cargoes include industrial products, semi-finished products and food.The maritime fleet includes bulk carriers, container ships, lighter ships,roll-on/roll-off ships, ferries and tankers.Currently, more than 10% of the world's cargo is transported by air. This mode of transportation is becoming increasingly important.

Trucks are steadily gaining market share in international transportation.This mode of transportation is very flexible in terms of routes and schedules.Trucks can transport goods from door to door, saving shippers from wasteful transportation. Trucks are a cost-effective mode of transportation for transporting expensive goods over short distances. In most cases, the cost of road transportation is competitive with rail, but trucks usually offer a higher level of efficiency in terms of service.

The main tasks of the logistics management process are:

• determining the need of enterprises and their structural divisions in material resources;

• studying the sources of providing material resources;

• organization of delivery of material resources to the place of consumption;

• rational and economic use of material resources;

• development of ways to improve the use of local raw materials and materials, production waste;

• organization of proper storage of material values;

• optimization of the supply of material and technical resources [3]. constantly analyze the market in order to find the most effective sources of supply.

At the "Epicenter K" enterprise, continuous market monitoring is carried out by the marketing department, which reports to the commercial director.

In the process of monitoring, the following is carried out:

* analysis of incomes and purchasing power of the population of the region;

* identification of unfilled market niches;

* research of market segments;

* study of quality characteristics that are guided by the consumer when making a purchase;

The experiment, as a method of studying demand, is used when studying the demand for a novelty product, for example, for new models of winter shoes.

Surveys of customers in "Epicenter K" stores are carried out quite often (approximately once every three weeks) on the basis of questionnaires. A questionnaire has been developed, which usually contains:

Composition of consumers of these goods (by age);

Consumer behavior when buying;

Factors influencing purchase decisions.

The enterprise's profitability indicators demonstrate positive progress and are deemed highly satisfactory.The sales profitability is a reflection of the commercial activity's efficiency, which has increased by 63 percent.The efficiency of commercial activities increased by 63.54%.Similarly, the level of product profitability demonstrated a positive trend. Product profitability indicates the efficiency of current expenses, and it increased by 79.09%.

The return on assets ratio exhibited an increase of 64.6%, which is a favorable trend for the company.The rise in the return on equity ratio suggests a growth in the level of return on equity.Thus, the analysis of the financial and economic activities of Epicenter-K LLC

"Epicenter-K" for the period 2019-2020 allows us to conclude that

The considered enterprise is developing and has positive tendencies.

The company is attractive for investment.

" Epicentr " company, in order to timely fulfill customer orders and save its own funds, concludes contracts with product suppliers. As a rule, there are several suppliers for each type of product.

Logistics management affects a large number of different objects: a wide range of goods, a large number of buyers and suppliers, various cargoes, etc. At the same time, the entrepreneur receives non-equivalent results from these objects.

Annual costs of Epicenter LLC for stock storage as a percentage of the average stock value are 19%, with a stock norm of 20 days. However, they can be reduced as a result of the application of differentiated stock norms after dividing the assortment into groups A, B, C using the ABC method - analysis.

Analysis - ABC is used for the purpose of reducing the amount of stocks, the number of movements in the warehouse, the overall increase in profit at the enterprise, etc.

The turnover of Epicenter LLC is UAH 60,000 thousand. for a year. The number of working days in a year is 250. The company's annual costs for stock storage as a percentage of the average stock value are 19%, with a stock norm of 20 days. Inventory storage costs can be determined by calculating storage costs (Formula 2.3) and one-day turnover (Formula 2.4)ABC analysis shows the value of each group of goods. Typically, 20% of all inventory items account for 80% of all costs. Based on this, for each of the three groups of goods, a different degree of detail is assumed during planning and control.

Based on the received data, we determined that the level of logistics service of the company is provided by 79%, and, in turn, indicates a fairly good level of the company, but still needs significant improvements.

The company " Epicentr " does not provide all the services that it can provide in the process of selling its products. Therefore, in order to improve the level of logistics service, it is necessary to add to the list of company services those services that the company did not use before. This will significantly increase the level of logistics service and increase the company's rating among competitors.

To assess the level of logistics service, the most significant types of services are selected, the provision of which is associated with significant costs, and the absence of which is associated with significant losses on the market.

Starting from 70% and above, the cost of service grows exponentially depending on the level of service, and after reaching the level of 90%, the increase in the volume of logistics service becomes unprofitable. At the same time, a decrease in the level of service leads to an increase in losses caused by the deterioration of service quality.

On the other hand, a decrease in the level of service leads to an increase in losses caused by the deterioration of service quality.

The logistics activity of each enterprise requires constant development and improvement, but at the same time a deep study of all possible factors of influence and individualization of each innovation. Science is developing, new technical inventions appear, which are successfully applied in logistics, which significantly

simplifies production and increases the efficiency of the company's logistics activities. In logistics, there is always a conflict: money or time (trade off), while due to innovations in logistics, you can achieve the effect of "trade up" - reduce both money (costs) and time, and also add added value to the client. Innovative introductions at the enterprise will make it possible to strengthen the competitive position of stronger enterprises and eliminate weaker ones from the market, which will also have a positive effect on the quality of products, which is positive for the buyer.

Logistics innovations, as a direction of logistics activity, consider innovations in the entire logistics complex, and in this connection provide for the addition of existing and the development of new tools (methods, criteria, indicators) in the field of methodological support of logistics used in the organization and management of material production and the sphere services, as well as improvement of operations and procedures used in logistics business processes.

Thanks to the introduction of innovations, " Epicentr " will be able to carry out its own commercial activities more efficiently and, in turn, will receive more profit.

The task of the study was to generalize approaches to the assessment of the development of the logistics function in a strategic aspect, to form an integrative approach to such an assessment, and to develop proposals for the assessment of the logistics system on the example of the private enterprise "EPICENTR K LIMITED LIABILITY COMPANY".

After conducting research on the chosen topic, the following conclusions can be drawn.

Today, the priority areas of the company's activities are business optimization (budgeting, consolidation, financial, managerial, regulatory and operational accounting), implementation and maintenance of accounting and tax reporting systems, consulting and support of business processes.

"EPICENTR K LIMITED LIABILITY COMPANY " provides the entire range of services in any part of the country. We successfully work with all companies from any industry - from small firms to huge corporations with a branch structure.

The company is developing rapidly, as evidenced by its production volumes.

" EPICENTR K LIMITED LIABILITY COMPANY " company implements the practical implementation of logistics management through the application of logistics functions.

The level of logistics service of the company is provided by 79%, and, in turn, indicates a fairly good level of the company, but it needs significant improvements.Starting from 70% and above, the cost of service grows exponentially depending on the level of service, and after reaching the level of 90%, the increase in the volume of logistics service becomes unprofitable. At the same time, a decrease in the level of service leads to an increase in losses caused by the deterioration of service quality.

The task of the logistics department is to find the optimal level of service. During the calculations, it was found that out of four suppliers of the same type of products, one can be singled out, thanks to the rating. This rating allows you to make effective management decisions regarding the choice of the optimal supplier. Also, it was determined that the company spends a significant amount of money on inventory storage (about UAH 912,000). However, they can be reduced as a result of the application of differentiated stock norms after dividing the assortment into groups A, B, C using the ABC analysis method. After carrying out the relevant calculations, it was found that the costs can be significantly reduced (by approximately UAH 629.28 thousand).

The logistics system of the company must be constantly improved by introducing innovations.

Thanks to the introduction of innovations, "EPICENTR K LIMITED LIABILITY COMPANY " will be able to carry out its own commercial activities more efficiently, will receive more profit and, in turn, will develop.

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