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**MASTER'S LEVEL QUALIFICATION PAPER**  
on the topic " LOGISTICS ACTIVITIES OF TRANSPORT ENTERPRISES AND  
SUPPLY CHAIN MANAGEMENT IN INTERNATIONAL BUSINESS"  
Specialty 292 "International Economic Relations"

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It is submitted for the Master's level degree requirements fulfillment.

Master's level degree qualification paper contains the results of own research. The use of the ideas, results and texts of other authors has a link to the corresponding source

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## ABSTRACT

of Master's level degree qualification paper on the theme  
« LOGISTICS ACTIVITIES OF TRANSPORT ENTERPRISES AND SUPPLY  
CHAIN MANAGEMENT IN INTERNATIONAL BUSINESS »  
student Miroshnychenko Kateryna Sergeevna

The main content of the master's level degree qualification paper is set out on 50 pages, including a list of used sources of 70 titles, which is placed on 8 pages. The work contains 10 tables, 6 figures, as well as 8 applications, which are placed on 10 pages.

**KEYWORDS:** LOGISTICS STRATEGY, LOGISTICS, COSTS, EFFICIENCY LOGISTICS ACTIVITY, COMPETITIVENESS, SERVICE QUALITY, OPTIMIZATION, MODELING, RISKS, SUPPLY CHAINS, STRATEGIC PLANNING

The purpose of the master's work is research and deepening theoretical knowledge on the formation of logistics strategies, as well as the disclosure of practical aspects of increasing the efficiency of the company's activities.

The object of the study is the process of forming the logistics strategy of the enterprise.

The subject of the study is theoretical, practical, scientific and methodological aspects, practical tools of analysis, formation of the logistics strategy of the enterprise.

During the execution of the master's thesis, the following research methods were used: economic-mathematical, comparative, graphic, etc. The method of generalization and systematization was used to develop recommendations and suggestions for improving activities, the economic-statistical method was used to calculate financial indicators of the company's activity, a set of general and specific scientific methods, such as a systematic approach, methods of economic

and statistical analysis, and grouping. To identify analytical information about the enterprise, data from accounting financial statements and materials of practicing specialists in logistics, which are placed in textbooks and in electronic sources, were used.

The information base of the work is compile monographs, publications in professional periodicals, materials of scientific all-Ukrainian and international conferences on the definition and classification of financial crises; statistics and surveys, including the NBU, the Ministry of Finance, reports of the State Statistics Committee on research and publications, posted on the Internet.

The main scientific results of the work are as follows:

1) All the importance and advantages of logistics strategies, as well as the dangers that companies face if they do not adapt to changes in time. The design of logistics strategies, among which a special place is occupied by the strategy of the integrated supply chain, is connected with the corporate strategy.

2) Strategic planning and design of supply chain is one of the most important logistics processes. Supply chain planning begins with a high-level strategic decision: the mission, corporate strategy, and business strategy are developed. Then functional and logistics strategies are formulated within the framework of making strategic logistics decisions. At the level of tactical decision-making, plans for the use of capacities and generalized plans are developed, the main schedule is built. The construction of short-term schedules corresponds to the level of operational logistics solutions

3) The organization and operational management of flows has a leading role in the operational management of the enterprise, in the timely supply of goods and especially in ensuring the improvement of production efficiency, since all issues related to the use of production resources in time and space are resolved within their framework.

The obtained results are that they are of both scientific and theoretical and practical interest. Theoretical provisions, proposals, recommendations and conclusions formulated in the study can be used: in practical and research activities

of the Ministry of Finance, NBU in macroeconomic forecasting and research of scientific topics related to macroeconomic instability, cyclical economic system; - during the preparation of textbooks and manuals, preparation and conduct of lectures, seminars on the course of economic theory and finance, in the research work of teachers, students, associate professors, cadets and students. The developed method of applying the latest logistics strategies can contribute to increasing the efficiency of the company's activities, reducing costs by providing better solutions for customers regarding the delivery of various cargoes. The developed strategy for providing benefits to the company's regular customers will help to improve the quality of the services provided and strengthen the company's competitiveness in the market.

The results of the approbation of the main provisions of the master's level degree qualification paper were considered at:

1) International scientific-practical online conference "Socio-Economic Challenges", which took place on September 15-18, 2022.

2) Multidisciplinary conference for young researchers "Sustainable development during the war in Ukraine and the world", which took place on November 15, 2022.

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TASKS FOR MASTER'S LEVEL DEGREE QUALIFICATION PAPER  
(specialty 292 " International Economic Relations ")  
student 2 course, group ME.m-11an

Miroshnychenko Kateryna Serhiivna

1. The theme of the paper is «Logistics activities of transport enterprises and supply chain management in international business» approved by the order of the university from 27 October 2022 №0969-VI.
2. The term of completed paper submission by the student is 18.12.2022
3. The purpose of the qualification paper is research and deepening of theoretical knowledge on the formation of logistics strategies, as well as disclosure of practical aspects of increasing the efficiency of the company's activities.
4. The object of the research is the process of forming the logistics strategy of the enterprise.
5. The subject of research are theoretical, practical, scientific and methodological aspects, practical tools of analysis, formation of the logistics strategy of the enterprise.

6. The qualification paper is carried out on materials compile monographs, publications in professional periodicals, materials of scientific all-Ukrainian and international conferences on the definition and classification of financial crises; statistics and surveys, including the NBU, the Ministry of Finance, reports of the State Statistics Committee on research and publications, posted on the Internet.

7. Approximate qualifying bachelor's paper plan, terms for submitting chapters to the research advisor and the content of tasks for the accomplished purpose are as follows:

Chapter 1 THEORETICAL PRINCIPLES OF THE ORGANIZATION OF THE MANAGEMENT OF LOGISTICS ACTIVITIES AT THE ENTERPRISE, to 19.11.2022

Chapter 1 deals with of the organization of management of logistics activities of the enterprise, their supply chains, which are a form of organization of intercompany interaction, and Ukraine in global supply chains are considered.

Chapter 2 STRATEGIC PLANNING AND SUPPLY CHAIN DESIGN, to 07.12.2022

Chapter 2 deals with strategic planning of supply chains, their main stages, and achieving strategic fit in supply chains are considered.

Chapter 3 STUDY OF LOGISTICS ACTIVITIES "NOVA POSHTA", to 12.2.2022

Chapter 3 deals with analysis and evaluation of the effectiveness of the logistics management organization of the company "NOVA POSHTA", their justification of the stages of the implementation of the logistics strategy at the enterprise, and the economic justification of the effectiveness of the proposed measures for "NOVA POSHTA" are considered.

8. Supervision on work:

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1	Shcherbachenko V.O. Senior Lecturer	1 November	19 November
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Research Advisor: \_\_\_\_\_ Shcherbachenko Viktoriia

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## INTRODUCTION

Orientation towards the creation of a market economy requires the formation of a new market infrastructure for Ukraine, which ensures the uninterrupted functioning of the country's economy. In order to invest in the formation of infrastructure, it is necessary to have a clear idea at the country level, which infrastructure links should have the right to exist in the economic system at each stage of the transition to a market economy. Logistics analysis is aimed at this. The main goal of logistics analysis is to identify the "bottlenecks" of functioning and to identify ways of their effective use for optimal functioning of production systems. Due to the weak development of the general concept of logistics, the categories "logistics reserve" and "logistics potential" are quite acceptable.

Today, all enterprises use innovative technologies, and therefore their condition is deplorable in relation to the country's economy. Thus, there is a need to develop methods that can improve their condition, as well as improve sustainability. One of such methods can be considered the activation of the logistics activity of the enterprise, the main basis of which is the logistics potential. An important component of the potential of logistics is logistics management, which has a certain influence on the development of the enterprise. Everything described above makes it possible to create an enterprise development strategy

In the conditions of the transformation of the economy, it is difficult to overestimate the importance of the presence of information about the level of work, costs for the activity of the enterprise, which is the result of this activity. The users of such information are the owners and managers of the enterprise, shareholders, creditors, executive authorities. The goals of logistics management of production (transport, warehouse) processes and the goals of cost management at enterprises are unidirectional. Solving the issues of effective management of the enterprise as the main factor in the formation of the final results of the financial activities of the enterprises should be based on the use of the logistics methodology and tools, which will allow an integrated consideration of the processes taking

place at the enterprises. A combined part of the task of increasing the productivity of each enterprise is the problem of optimizing logistics costs, which is presented as one of the most important aspects of the task of forming supply chains.

Research, review and classification of costs within the supply chain of products of trading enterprises are a key and extremely sought-after issue in the process of forming a logistics chain.

Consideration of costs in logistics systems is one of the most important and popular issues. The formation of logistics, first of all, is determined by the desire to reduce the time and money costs associated with the movement of goods and the formation of effective logistics chains.

However, a number of both domestic and foreign scientists in their works no longer focus on the definition of logistics costs, but on their composition and systematization, due to the high labor intensity of measures that are related to the definition of their total volume and consider the implementation of a large number of accounting and calculation operations. The components of logistics costs and financial ones are the result of logistics processes and are reflected differently in both accounting and management accounting. Their size and composition are influenced by a huge number of factors that consider the diversity and different specificities of existing logistics systems. Quite a lot of works are devoted to issues of managing logistics processes at the enterprise in the information space of Ukraine, which are of a general theoretical and narrowly special nature.

The aim of the thesis is to research and improve the organization of logistics activities at the "Nova Poshta" enterprise. In accordance with the specified goal, the following tasks were set: to consider the theoretical essence of the organization and management of logistics activities at the enterprise; to present the methodology of analysis and evaluation of logistics activities of enterprises; outline scientific approaches to the effective organization of logistics activities at the enterprise; to present the characteristics of the financial and economic activity of the enterprise; analyze and evaluate the effectiveness of the organization and management of logistics activities at the enterprise; analyze the external factors of influence on the

organization of management of the logistics system of the enterprise; to develop improved organizations, logistics activities at the enterprise; evaluate the effectiveness of implementation of the proposed measures. The object of the study is the process of organizing logistics activities at the "Nova Poshta" enterprise.

The subject of the research is the theoretical, methodological and practical provisions of the organization of logistics activities at the enterprise.

Research methods: the diploma work of the master's level of higher education was carried out on the application of general and special research methods: functional-cost analysis, methods of economic and financial analysis; logistic methods.

The practical significance of the work lies in the development of practical recommendations for improving the organization of logistics management at industrial enterprises, as well as the fact that the research results can be used by "Nova Poshta" to improve the organization of logistics process management.

# **CHAPTER 1 THEORETICAL PRINCIPLES OF THE ORGANIZATION OF THE MANAGEMENT OF LOGISTICS ACTIVITIES AT THE ENTERPRISE**

## **1.1 THE ESSENCE OF THE ORGANIZATION OF THE LOGISTICS MANAGEMENT OF THE ENTERPRISE**

The logistic approach to enterprise management is aimed at ensuring the rationalization of flow processes within the managed system from the point of view of a single material chain, the integration of individual parts of which is carried out at the technical, technological, economic, and methodological levels, and the minimization of time and resource costs is achieved by optimizing the end-to-end management of material, information and financial flows.

Thus, logistics management consists in purposeful influence on logistics flows with the aim of synchronizing their interaction and achieving a synergistic effect [1].

Logistics management is the process of formulating a strategy, planning, managing and controlling the movement and storage of raw materials, materials, production stocks, finished products and the formation of information from the point of origin to the point of use (consumption) with the aim of the most effective adaptation and satisfaction of consumer needs [2].

The logistics concept proclaims the need to identify the individual needs of consumers and respond to them, directing available resources to their full satisfaction. The basic idea is that those companies achieve the greatest success, all the productive actions of which in combination make it possible to meet the expectations of consumers [3, c. 114]. Since logistics fulfills consumer requests related to the time and place of product availability, as well as related services, it can be argued that logistics management is customer service management.

Special characteristics of logistics management, as well as management in general, can be outlined: one of the specific types of activity that distinguishes it from other types of activity; the main form of logistics management is the influence of relevant management subjects on its object (logistics system); a type

of activity that is carried out continuously in time and space; is carried out as a process that takes place in a clear structural sequence of its individual stages; always subordinated to defined goals and always characterized by a certain result; management activity requires the rational use of necessary resources and takes place in conditions of risk and uncertainty[4].

The general goal of logistics management is the implementation and coordination of the economic interests of direct and indirect participants in business processes through the most efficient use of resources in the currently existing business conditions.

The main among them are: improvement of processes of physical movement of resources and finished products in all structures covered by logistics management; harmonization of strategic, tactical and operational logistics goals with the general goals and strategies of enterprises or other participants in the logistics chain; directing the integrated activity of logistics chain participants to effective customer service based on the principle of "high benefit - acceptable costs".

In the process of enterprise logistics management, the subsystems of logistics management organization are divided into the following subsystems: supply, warehousing, transportation and production, and sales. The supply subsystem is designed to improve work efficiency by selecting qualified suppliers, optimizing procurement processes, developing procurement management processes, using standard work methods, market research, and forming procurement strategies and tactics.

The warehouse subsystem ensures the improvement of warehouse processes by implementing warehouse technology, improving warehouse service quality, standardization and rational layout. The transportation subsystem ensures the formulation of reasonable supply plans, transportation routes, optimization of transportation loading, the unification of transportation processes with production and storage processes, and transportation accounting.

The production subsystem implements methods such as inventory management, production planning, production support, material flow accounting, production cycle compliance, and product quality improvement. The sales subsystem aims to conduct systematic market research, speed up the registration and processing of orders, improve the level of logistics services, and reduce complaints and fines.

The task of logistics lies in the complex control of continuous material flow; it is advisable to start the company logistics system from the supply area, because it organizes the entrance of logistics into the logistics system.

As the main subsystem of the entire enterprise management system, logistics management aims to achieve the strategic and tactical goals of enterprise development. Investment in activities, logistics management of innovation, production, finance, human resources and information departments contribute to the realization of strategies and full-process processes in the chain "resource procurement - transportation - production - warehousing - implementation - end-user service" - tactical goals of the enterprise.

The activity of a company as a logistics system, that is, one that is subject to logistics management, can be divided into three stages [5]:

- supply logistics, understood as the complex planning, management and physical handling of material flow, raw material flow, component flow and the corresponding information flow from suppliers to the original production warehouse;
- production logistics, including process management from the start of production to the delivery of the product to the sales room;
- sales logistics includes managing the transportation of finished products to customers.

A distinctive feature of logistics management is the systematic, holistic approach to organizing and implementing the movement of materials and finished goods along the entire route from production to final consumption. The

logistics approach can view the transportation of goods from suppliers to consumers as a system composed of interacting logistics chains.

Logistics management is carried out on the basis of general management principles, taking into account the specific circumstances of logistics activities. Among the principles of logistics management, the following points can be picked out [6]:

- systematic and complex, including the control of all processes in the interaction and the coordination of individual business process steps to optimize the entire logistics system;
- harmonize the criteria for evaluating the operational effectiveness of the various links in the logistics chain at the micro and macro levels;
- organization of cost accounting to manage material and related information, financial and service flows throughout the logistics chain;
- more active use of information technology and modern modeling methods in logistics systems management, etc.

With traditional management, each link in the logistics chain has its own management system based on its own goals and performance standards. The output material flow of the previous link in the logistics chain is formed under the influence of the management system of this link, taking into account its objectives and standards; it is the input of the next link.

The resulting logistics of the entire logistics chain is the output flow of the last link. Its parameters are the result of independent management actions that are consistently carried out in each link of the logistics chain. Therefore, from the point of view of general management objectives, they are spontaneous.

In terms of logistics, management measures are added to a new object through a single logistics management system - an end-to-end material flow. These measures are formed taking into account the overall objectives and efficiency criteria of the logistics chain studied, so that the parameters of the initial logistics are predictable.

## 1.2 SUPPLY CHAINS AS A LOGISTIC FORM OF ORGANIZATION OF INTERFIRM INTERACTION

The efficiency of the logistics activities of national enterprises is directly dependent on the logistics chains formed by them.

The supply chain is primarily a set of certain organizations, business units, which are organized by flows and processes, emphasizing the spatial dimension of the supply chain.

According to the supply chain, the links of the logistics system (LLS), organized by flows (commodity-material, commodity-intangible, financial (F), information) form logistics chains, schematically presented in fig. 1.1.

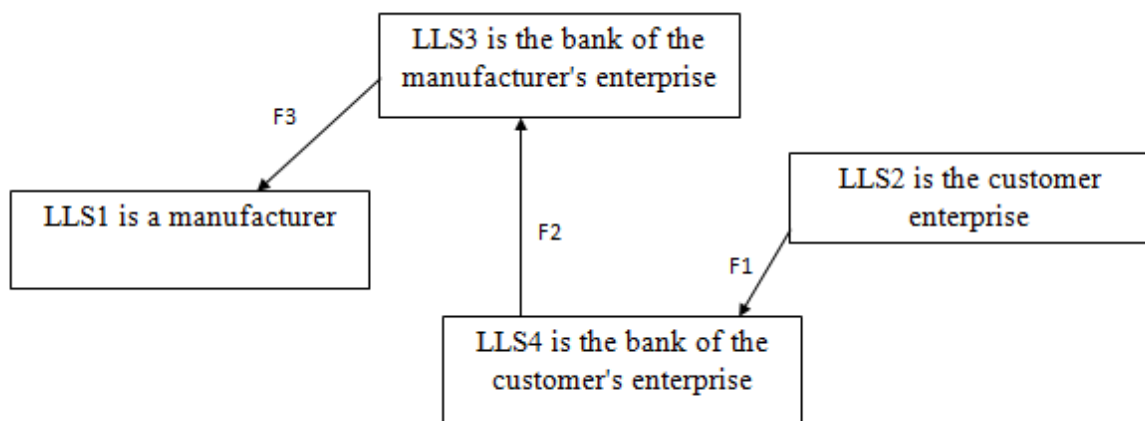


Fig. 1.1 Schemes of financial flows between the links of the logistics system [7]

This approach reflects the object presentation of supply chains, the essence of which is to consider the logistics chain as a logistics system consisting of subsystems, links and elements that are interconnected according to the principle of nesting (each subsequent element is a collection of many smaller components) or networks and channels that meet the requirements for the construction of logistics infrastructure in terms of the implementation of goods movement functions.

The object-spatial representation of the supply chain has an important advantage, because it allows you to determine the physical and market boundaries



of the supply chain as a metal-logistic system, but at the same time, to a certain extent, such important aspects of the functioning of supply chains as the processes for which they are formed and the relationship between participants are ignored to some extent. Thanks to which their formation is realized.

The process approach to the definition of the supply chain is more progressive than the object approach, because it connects the concept of the supply chain with the concept of supply chain management (SCM), which, according to the definition of J. Stock, D. Lambert, is the integration of key business processes: managing relationships with consumers ; customer service; demand management; fulfillment of orders; production/operations; supply; product development and bringing it to commercial use; management of returnable material flows [8].

The process approach to defining the concept of a supply chain takes into account the advantages of SCM, but does not take into account an important aspect of the formation of supply chains, namely, the need to build a system of relationships between participants in supply chains.

In order to deepen research on the theoretical foundations of the definition of the concept of "supply chain", a morphological analysis of this concept was carried out (Table B.1);(APPENDICES B), which allowed us to identify key words in the most common definitions of the supply chain [9]:

- a physical network, or a spatially ordered sequence of organizations;
- an integrated process covering logistics or business processes;
- a certain system of relations between business entities, characterized by cooperation and integration.

The purpose of the supply chain is to [10]:

- product development, supply, production, physical distribution and provision of after-sales services;
- deliveries implemented by external providers of proposals;
- delivery to the final consumer of a full range of products and services, a specific batch of products;

- bringing the external material flow from one logistics system to another or to the final consumer;
- creating value for both the client and the enterprise; satisfaction of demand for products or services;
- formation of international supply chains;
- integration and coordination of activities of supply chain links in "space-time" coordinates.

The shortcoming of the considered definitions of the supply chain is the lack of substantiation of the connection between the formation of supply chains and the need to improve the efficiency of the logistics activities of their participants. The participants of supply chains get an increase in the efficiency of logistics activities thanks to the additional effect of integration and cooperation, namely, the synergistic effect [11].

Obtaining a synergistic effect in supply chains and, based on this, increasing the efficiency of the logistics activities of enterprises - links of supply chains is the main goal of the formation of such logistics chains.

Supply chain management can be considered from the main positions: as a business concept; as an independent scientific direction; as an environment of information interaction of enterprises.

New hybrid relations of cooperation/competition between the participants of logistics chains put forward new requirements for cooperation and trust, as well as for the use of principles of synergism, that is, the awareness that the effectiveness of management can be greater than the total effectiveness of its component elements. The main features of the formation of modern logistics chains are given in the table C.1 (APPENDICES C).

The Internet and information technologies are widely used for the integration of participants of meta-markets in order to ensure connections between various structural elements of the network [12].

The nearest prospect of development in the field of supply chains is the integration of its participants based on models of risk management in supply

chains, which include tools for identification, assessment and monitoring of risks, in order to improve the efficiency of the use of resources throughout the supply chain [15].

The logistics approach to managing the economy and transport and logistics systems has changed radically over the last decade. Logistics and the concept of supply chain management have become highly developed innovative areas of the industry, including the area of production and delivery of products. This became possible thanks to the emergence and development of new economic relations that arose between producers, suppliers and consumers of products under the joint management of resource supply processes based on the use of forms of partnership cooperation and the latest information technologies [16].

The global economy is characterized by an additional effect arising from the elimination of geographical, industry and intra-corporate barriers - through systemic integration and cooperation. Today's scale of partnerships between formerly competitive corporations and companies is driven by the need to reduce uncertainty and risk in supply chain interactions. This factor is dominant and plays a strategic role in the functioning of supply chain security management systems [17].

It is important to pay special attention to obtaining synergistic effects in supply chains thanks to the integration, cooperation and partnership of all links of regional logistics systems - production and infrastructure enterprises, organizations and state authorities.

### **1.3 UKRAINE IN GLOBAL SUPPLY CHAINS**

Effective logistics is key to the development of the competitiveness of countries around the world. Logistics is especially important for Ukraine, where international trade makes up a significant part of GDP. The location of Ukraine at the intersection of main transport routes from Europe to Asia and from the

Scandinavian countries to the Mediterranean region creates unique opportunities for the development of transit services [18].

An important condition for the participation of Ukrainian enterprises in global supply chains is the ability of production systems of enterprises to diversify with minimal loss of development dynamics [19]. For this, it is necessary to use the possibilities of strategic marketing, logistics, supply chain management concepts, in particular with the aim of determining such diversification directions that will allow preserving or even optimizing the existing logistics infrastructure.

The rationalization of the management of material and accompanying flows in Ukraine largely depends on the organization of the effective functioning of supply chains that combine the processes of production, consumption and recycling.

One of the aspects of logistics policy is related to monopolistic tendencies in this field. Competition usually leads to market dominance, with certain players gaining monopoly power. Such dominance calls into question some public interests, such as access (smaller actors do not have access to infrastructure), affordability and price (a monopolist can set high prices) [20]. Other reasons for government intervention include the desire to limit foreign presence in such a vital industry due to fears that the system will be sidelined to serve foreign interests. In recent years, globalization has strengthened the interaction of logistics at the international level [21]. But at the same time, it led to the emergence of large players who manage strategic portfolios in the field of logistics at all levels. More recently, environmental standards and control measures have been approved in response to the growing awareness of the impact of logistics on the environment [22].

The main directions of the development of logistics systems in Ukraine in the context of the economic and theoretical foundations of the development of the national logistics system should be considered: types of influence of logistics on economic systems; economic return on investments in logistics systems; logistics as an economic factor of economic growth. Economic and social possibilities of

logistics for the development and growth of the state's economy: tools and changes in the nature of economic interventions (logistics infrastructure, non-tariff barriers, international standards, formation of world-class labor resources, financing of logistics, significance of key performance indicators); development of niche logistics: "sustainable" logistics (certification according to "green" logistics standards), cold logistics, reverse logistics, city logistics, last mile logistics.

Non-tariff barriers in logistics, such as redundant licensing requirements, can further weaken a company's competitiveness and reduce its ability to participate in global and regional logistics supply chains. Non-tariff barriers in logistics lead to an increase in costs, and are also characterized by higher unpredictability (compared to tariffs). The unpredictability leads to the fact that other downstream parties are forced to keep expensive stocks in their territory for a long time, which is associated with unacceptable "resonance effects" for the entire supply chain. In the conditions of the global market, the recipients of goods require a high degree of confidence in when and how deliveries will be made. This is much more important than the speed of delivery.

Export and import functions are closely related to border crossing time and predictability, even though there are additional factors beyond procedures that affect international trade, such as logistics infrastructure and the internal organization of customs and border services. One of the most serious obstacles for developing countries is logistics costs. Today, non-tariff costs (freight, insurance, and other fees associated with conducting foreign trade activities) can significantly exceed any retained import tariffs, as the movement of products occurs at various stages of production. These logistics costs have both a monetary aspect (transportation, insurance and other fees) and a more material aspect: information costs, non-monetary barriers (regulation, licensing, etc.) and low quality logistics management, which leads to uncertainty. These various obstacles in logistics can be expressed in the equivalent of an ad valorem tariff at a certain rate. There are a wide range of tools and resources that can be used to help countries create more favorable conditions and minimize non-tariff barriers in logistics.

Another critical factor necessary for participation in logistics supply chains is the ability of enterprises to implement international standards. Final products must meet the standards of the country where these products will be sold. Therefore, all components of such products must also meet these standards. As a result, those logistics service providers who cannot reliably demonstrate the ability to consistently meet the required standards at low costs are not even considered as a partner. Standards-related requirements are a significant barrier to participation in global supply chains. To fulfill these requirements, knowledge and technical "know-how" are needed, which training is not always available. In addition, even logistics service providers that comply with such quality requirements do not always have the opportunity to undergo mandatory testing and certification in a timely and cost-effective manner to demonstrate compliance.

The main benefits of such a system for logistics companies are to increase the mobility of skills, reduce uncertainty in the hiring process, fully attest the qualifications of employees and, most importantly, to strengthen the sense of pride among certified employees, which forms a culture of continuous learning and development. Participation in global supply chains provides an opportunity to increase the pace of economic development and benefit from increased employment and technology transfer. To maximize such benefits, it is important that local businesses, as well as those created with foreign direct investment; participate directly and indirectly in global and regional supply chains.

One of the most important ways policymakers can strengthen logistics is to improve the overall business climate. The starting point for determining priorities when working on improving the business climate is quite suitable for the ratings of individual indicators used by the World Bank in the "Doing Business" study and the World Economic Forum for the preparation of the global competitiveness rating [23]. Foreign direct investment can open up many opportunities for local companies to participate in global logistics supply chains. At the same time, foreign direct investment policies and the benefits enjoyed by foreign investors sometimes do not foster linkages with domestic industry or may even put domestic

companies at a disadvantage if they want to become suppliers to participants in global and regional supply chains. This occurs when special economic zones (or other economic benefits) are restricted to companies with foreign investors. In such a situation, it is cheaper for the company to purchase raw materials and components from another foreign company than from a domestic company that does not enjoy such advantages and, thus, is unable to compete. One way to address this problem is to take special measures to encourage inward investment by giving domestic exporting companies the same or similar benefits as companies created with foreign direct investment. Another strategy to encourage the transfer of knowledge and the development of linkages in logistics systems without adverse effects on competition is to require foreign companies to provide training to domestic companies (in exchange for any benefits they receive). It helps domestic companies acquire the knowledge and skills they need to compete for logistics contracts and introduce foreign companies to the capabilities of domestic companies.

Regardless of the framework used, assessing Ukraine's competitive position and analyzing how to expand its participation in global and regional supply chains should become an ongoing process. Every year there are changes in technology, infrastructure, economy and political environment that affect logistics policy. In addition, since global and regional supply chains are ultimately connected to business, it is important that these assessments and selection of policy options and priorities are carried out in partnership with the private sector and public authorities responsible for logistics, promotion of exports, imports and foreign direct investment.

Significance of key performance indicators (KPI). Once measures to support Ukraine's participation in value chains have been determined and priorities have been established, it is extremely important to formulate KPIs. This will allow Ukraine to determine "where it is now" and measure the progress achieved [24]. Without KPIs, it is very difficult to measure progress and evaluate results. KPIs also provide important motivation for participants, allowing them to measure their

achievements and the impact of their work. Many key indicators of logistics performance can be taken from international indices, such as the World Bank's Business and Logistics Survey.

The goals of the national policy proposed by the World Bank and possible corresponding performance indicators can become the basis of the program for the development of logistics systems in Ukraine: elimination of obstacles at the border; strengthening the connections of the domestic market with foreign markets based on the development of global and national supply chains; strengthening of the determining factors for investments in logistics systems; improvement of the domestic infrastructure of logistics services and the structure of the logistics market; stimulation of social modernization using the goals of sustainable development and sustainable logistics; creating conditions for a fair distribution of opportunities and results. However, one should not be limited only to these recommendations, it is necessary to strive to determine the key indicators of the effectiveness of logistics activities that best correspond to the situation in Ukraine and national ideas

After determining the priorities, it is very important to set KPIs for each strategic goal in the logistics policy. Key performance indicators help countries ensure motivation and accountability of logistics process participants. In addition, KPIs allow policymakers to measure the effectiveness of their decisions so that, if progress is not made, plans can be adjusted to reallocate funds to more successful initiatives.

Despite the importance and potential of logistics services, Ukraine's capacity is underutilized, the infrastructure and services available to shippers and logistics service providers are below standards found in EU countries, and logistics costs faced by end users are high [24].



## CHAPTER 2 STRATEGIC PLANNING AND SUPPLY CHAIN DESIGN

### 2.1 STRATEGIC PLANNING OF SUPPLY CHAINS

Strategic supply chain planning is a comprehensive, comprehensive, integrated planning process to achieve supply chain competitiveness by increasing added value and improving service parameters that provide the greatest customer satisfaction, anticipating their future needs for service quality and optimal management of supply resources.

The key components in the strategic planning of supply chains are [25]:

- human resources (labor market, level of knowledge, competencies);
- organizational and network solutions (network configuration of supply chains, organizational structure of chain management, production and logistics capacities, etc.);
- technologies and processes (availability, market condition of service organizations, outsourcing, innovations);
- financial resources (sufficiency of funds to implement the supply chain planning process).

As the dimensions of supply chain goals increase, the number of possible options for distributing functions and business processes by resources increases rapidly.

There are a number of requirements for supply chain planning (Table 2.1).

Table 2.1 Supply chain planning requirements [26]

Requirement	Characteristics
Implementation	The plan must be implemented in the conditions of real reality
Goal attainment	The plan must ensure the achievement of the set goal
Analyzability	The plan and its structural elements must be analyzed
Controllability	The plan as a whole and its sections should be subject to control by executives and managers.
Regulation	The plan should be able to be adjusted and adapted
Synchronization	The plan must coincide with the specified implementation dates in reality

The main task in the formation of a strategic plan of the supply chain is to establish a balance between the most important indicators of the chain - total costs and the level of service, in order to assess the possibility of improving the service taking into account the set restrictions on costs throughout the supply chain.

Supply chain planning is carried out to make decisions about the allocation of resources and the coordination of the actions of the partners of the chain. At the same time, it is necessary to develop the configuration of the supply chain and the planning system in such a way as to control and minimize possible risks [27].

In general, the following strategies can be implemented in the supply chain:

- 1) Comprehensiveness;
- 2) Focus on sales channels;
- 3) Individualized customer service;
- 4) Operational dynamics.

The strategy of comprehensiveness is focused on ensuring product availability and is used in conditions of predictability of demand for products. The supply chain is responsible for ensuring that the product is available at the right place at the right time. The essence of this strategy is the organization of an extensive sales system, largely focused on brands.

The disadvantages of the strategy are that [27]: its implementation is associated with high costs of the distribution network; managing multiple distribution channels leads to unnecessary complexity and organizational stress. Companies often offset the additional costs by increasing sales and pricing their brand, especially if it is the market leader.

A channel-focused strategy aims to deliver products in the optimal form for the distribution channel. In this situation, the sales channel assumes responsibility for the sale of products. The main disadvantage of the strategy is the lack of communication between the producer and the end consumer.

This strategy is based on financial costs and - service, requires an efficient functioning of the supply chain capable of meeting the expectations of the sales channel.

The strategy of individualized customer service is aimed at increasing consumer value. Businesses can increase the cost per value provided, thereby increasing the average price per unit of output. Within this strategy, companies interact with each consumer. To serve such a differentiated supply chain market, it is common to transfer certain end-to-end functions and operations to the last structural elements of the supply chain. In this way, a wide assortment is provided; inventory is reduced [28].

When using this strategy, companies may face such problems as: significant costs for the organization of the supply chain when interacting with specific consumers (but they can be compensated by reducing investments in stocks and reducing the volume of obsolete products); confidentiality requirements of buyers and use of information collected in the course of this sales method.

The strategy of operational dynamism focuses on the development of commodity indicators of goods in the supply chain to meet consumer demand. Enterprises in this situation focus their attention on receiving a markup for the fact that they were the first to appear on the market with a new product.

Most companies that choose this strategy outsource certain functions of the supply chain and concentrate on the development of new products and their promotion to the market. The choice of supply chain strategy should be based on the optimal ratio of potential and limitations of supply chain counterparties to achieve strategic effectiveness.

Many supply chain performance indicator systems have been developed. Most of them measure the satisfaction of consumer needs, because specific configurations of supply chains owe their existence to consumer demand for goods.

One of the most common is a system that includes the following parameters of the supply chain: speed, reliability, flexibility and costs. It is constructive to use the visibility of the BCG matrix to demonstrate the dynamics of supply chain parameters during the product life cycle [29]. In this way, it is possible to reflect

the complex evolution and prioritization of the requirements that a product imposes on the supply chain configuration.

At the same time, each stage of the product's life cycle imposes certain requirements on the supply chain (Table 2.2).

Table 2.2 Priorities of requirements for supply chain parameters [29]

Stage of the life cycle of the product according to the BCG matrix	LP priority parameter	Parameter definition
"Question Marks"	Flexibility	The ability to adapt the supply chain in a timely manner in accordance with the changing demands of the consumer. Good indicators of flexibility are the level and position in the chain of commodity stocks and the frequency of cases of absence of goods in the retail part of the chain
"Stars"	Speed	The length of the cycle from the purchase of raw materials and materials by the supplier of the product to the actual receipt of the finished product by the consumer. Chain speed is sometimes called supply chain length and is measured in days
"Milk cows"	Reliability	The degree of compliance with the established delivery terms
"Dogs"	Costs	The total cost of operating a supply chain, which consists of the costs of production, procurement, transportation, warehousing, insurance, write-offs of obsolete and spoiled stocks, chain financing and many others

In order to analyze the supply chain and understand exactly how it works, it is necessary to have a way to describe in detail the operations that take place in the supply chain; a mechanism that helps to list individual activities and demonstrate the dependencies between them.

Business processes are a set of internal steps (types) of activity that begin with one or more inputs and end with the creation of products needed by the client and satisfying him in terms of cost, quality and service [30]. The main approaches to the distribution of business processes in supply chains are shown in the table D.1 (APPENDICES D).

The methods of improving indicators include drawing up process maps, progression diagrams, and execution maps of many types of activities

The easiest way is to make a process map. There are several types of process maps, but they all start with the fact that the analyzed process is broken down into separate activities.

This gives a general picture of the process, but does not allow understanding it in detail. A more useful approach begins with a description of all activities [31]:

- operation: something is actually done;
- movement: products are moved;
- storage: products are waiting when they are needed;
- delay: products expect something to happen to them;
- inspection: checking the level of product quality.

Then you can make a series of activities and describe exactly what happens during them. For this, six stages should be used (Table 2.3).

Table 2.3 Compilation of the process map [31]

Stages	Content of the stage
I	List all types of activities in the right sequence - from the beginning to the end of the process
II	Classify each activity as operation, movement, inspection, detention, or storage. Determine the time and distance required for this
III	Summarize all activities, set the total time, intensity of each activity and get any other information you need
IV	Critically analyze each type of activity, asking, for example, the following questions: Why is this activity carried out in this way? Can this type of activity be eliminated? How can it be improved? Is it possible to combine activities?
V	Now review the entire process to reduce the number of activities, their time, move products a shorter distance, and more
VI	Review new procedures, prepare to implement changes, train staff, perform other necessary actions, and implement changes

The first three stages provide a detailed description of the current activities, stages I, II are usually performed during observations, and stage III - using calculations. The last three steps are aimed at improving the process.

A flow diagram can be used to describe the supply chain. Graphically, it consists of a network of circles denoting types of activities and arrows showing dependencies between them. For example, a very simple operation has two

activities: A and B; type A must be finished before B begins. You can represent these types of activities in the form of two circles, and the dependence - as an arrow, as shown in Fig. 2.1.

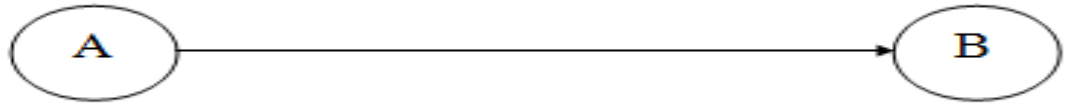


Fig. 2.1 Precedence diagram view [31]

This method can then be applied to more complex supply chains. Map of performance of many types of activities. It is often useful to see what each employee or piece of equipment is doing at any given time. The easiest way to do this is to use the activity map. This map shows the due date in the left column and all participants and equipment units at the top. The time during which each participant is involved in the process is also indicated here [31].

## 2.2 MAIN STAGES OF SUPPLY CHAIN DESIGN

The current stage of development of the national economy is characterized by a significant impact on the level of its competitiveness of formed supply chains. This determines the relevance of the study of the problems of using modern methodological and methodical approaches to the design of supply chains.

In the practice of logistics activity, two main approaches to the design of the supply chain have been formed. The first approach, more general, involves describing the design process in the form of a sequence of certain steps to create a supply chain (Fig. E.1) ;( APPENDICES E). This approach involves the formation of alternative options for the structure of the supply chain, their evaluation and the selection of the most optimal one.

The second approach is more specific. The algorithm for building a supply chain involves an iterative procedure taking into account the interrelationship and mutual influence of transportation blocks and inventory management and warehousing logistics [33]. The iterative procedure means that the intermediate result obtained at each stage is, on the one hand, the starting option for the next stage in each considered block (transportation or stock management and warehousing), and on the other hand, the starting option for solving tasks in the "neighboring" block (Fig.F.1 );(APPENDICES F).

The simultaneous use of different approaches is not contradictory and does not create a conflict, since it is advisable to use different approaches for different classes of tasks and objects in logistics management [34].

The design of supply chains is primarily a process that has inputs and outputs and consists of operations, functions that are regular, meaningfully repeated, which determines the appropriateness of using a process approach.

The design of supply chains requires the implementation of a large number of operations grouped into certain functions that need to be fixed by specific performers. This determines the use of a functional approach. In addition, supply chain design can be considered by enterprises as an organizational innovation project. G. A. Doroshuk [35] emphasizes that such a project has a beginning and an end in time, aimed at achieving organizational changes regarding the implementation of new business methods; organization of workplaces, external relations; subject to limitations in resources and terms; quality requirements and acceptable level of risk. This ensures the successful development and strengthening of positions on the market, determines the use of an innovative approach.

An integration approach is of particular importance in the design of supply chains, the use of which provides opportunities for obtaining synergistic effects in supply chains thanks to the integration, cooperation and partnership of all links of regional logistics systems - manufacturing and infrastructure enterprises and organizations, as well as state authorities.

The need to use a structural approach to the design of supply chains stems from their classical definition as a connected structure of business units united by the relationship "suppliers - focal (main) enterprise - consumers" in the process of creating and selling goods that have value for the end consumer, in accordance with market requirements [36].

The marketing approach to designing the supply chain aims to enable the enterprises included in the chain to work with the end consumer according to a new scheme and to transform traditional supply and distribution channels into vertical marketing systems. Such systems combine several companies consistently located on the path of material resources, which should act as a single organism, increasing their profitability due to the coordination of joint efforts [37].

Thus, in the design of supply chains, it is important to use modern methodological and methodological approaches, which are interconnected and form a theoretical basis for the design of supply chains that meet the requirements of the modern competitive market [38].

### **2.3 ACHIEVING STRATEGIC FIT IN SUPPLY CHAINS**

Implementation of organizational changes in a system consisting of a whole set of organizations requires detailed study, serious time and financial investments. Continuous improvement of processes in the supply chain requires an effective business strategy in a competitive market.

Organizational change management in supply chains can be implemented based on four main approaches: fast decision analysis (FAST) methodology; benchmarking process; process redesign; process reengineering (Table G.1); (APPENDICES G).

Supply chain planning is a form of regulation and management of processes occurring within a separate supply chain through the development of time



parameters of these processes. Such parameters indicate how and when processes should be executed. There are three levels of planning [40]:

- strategic – long-term planning (10-15 years);
- tactical – medium-term five-year planning;
- operational – current short-term planning (monthly, quarterly, annual).

These three levels of planning correspond to the goals set within the supply chain: strategic, tactical, and operational level goals.

Supply chain planning begins with a high-level strategic decision: the mission, corporate strategy, and business strategy are developed. Then functional and logistics strategies are formulated within the framework of making strategic logistics decisions. At the level of tactical decision-making, plans for the use of capacities and generalized plans are developed, the main schedule is built. The construction of short-term schedules corresponds to the level of operational logistics solutions.

For most companies, the supply chain looks like a set of interactions between suppliers, consumers, and various counterparties, united by various connections into a single structure. Given the fact that the supply chain is configured by the scheme of interaction between suppliers and consumers and involves the participation of channel intermediaries, there is talk of a kind of network structure of supply chains, in which each company (enterprise or its separate division) supplies products or services along the line of interaction, adding a certain value to the product. The general scheme of the network structure of the supply chain is presented in Figure 2.2.

The format or configuration of the network structure of supply chains is determined based on the following parameters [40]:

- boundary and structural dimensions of the network;
- participants of the supply chain;
- types of business relationships between supply chain participants.

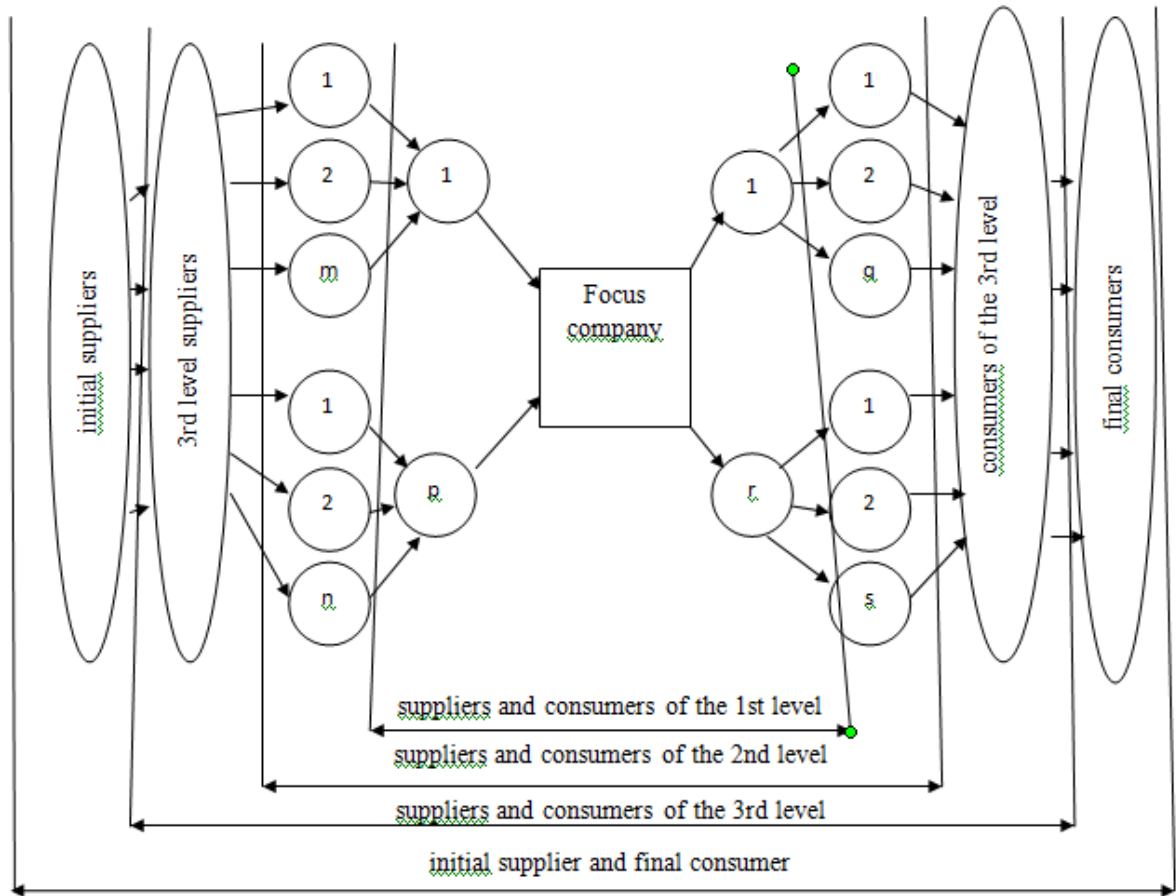


Fig. 2.2 Diagram of the network structure of supply chains [41]

In other words, the construction of a network structure of supply chains includes the identification of participants and logistics processes of supply chains, between which it is necessary to establish connections, the degree of integration in relation to each of them, their position relative to the focal company, as well as the boundaries and structural dimensions of the network.

The network structure of supply chains is implemented through a set of flow processes, which have their own boundaries - the beginning and the end. For any single logistics process within supply chains, the boundary is established by the beginning, that is, the primary entrance. These inputs are at the source supplier of the supply chain and further through the suppliers of the following levels lead to the focal company. The process ends with an output that gives the result to the end user. There are also secondary inputs and secondary outputs. They come as by-

products of the process and are not the main purpose of the supply chain. Secondary exits usually initiate other, including non-logistic, processes.

The size of the supply chain network should be limited by the degree of control by the focal company, so it should first be carefully examined to what extent the established boundaries of the network structure are optimal from the point of view of increasing the ability to produce values.

When configuring, three structural dimensions of the network are considered [41]:

- 1) The position of the focal company relative to the boundaries of the network structure of supply chains. The center of the network structure can be shifted towards suppliers, when the focal company is located closer to the beginning of the primary source of supply, closer to the final consumer, and also to be in the middle between the starting and ending points of all chains;

- 2) Vertical network structure of supply chains. It characterizes the number of levels of suppliers and consumers in supply chains. Obviously, the more levels in a supply chain, the longer it is, and conversely, the fewer levels, the shorter it is. For example, a supply chain may consist of an initial supplier, a focal company, and an end customer, and thus have only a first-level supplier and customer. Or the supply chain may consist of suppliers or consumers of several levels;

- 3) Horizontal network structure of supply chain. It is determined by the number of suppliers or consumers at each layer: a supply chain can be a narrow horizontal structure with a few companies at each layer, or a wide horizontal structure with many suppliers or consumer.

The configuration allows various combinations. For example, a long and wide network structure of the supply chain on the supplier side with a shifted focal company towards the end consumer can be combined with a short and narrow structure on the consumer side

When configuring the network structure, the participants of the supply chain should be established by identifying the manufacturer (as a rule, the manufacturer is the "core" of the supply chain and it is he who becomes the focal company), and

the others - by distributing them according to their function: suppliers, including the initial supplier, consumers, including final ones, and intermediaries who provide various services. Participants include all companies with which the focal company either interacts directly or interacts indirectly, that is, through suppliers or consumers at various levels - from the initial to the final.

All actors in a supply chain are divided into key (primary) actors and secondary actors, based on how one or the other actor affects the consumer's value to the product.

Supporting participants in the supply chain include [42]:

- banks and other credit organizations that provide credit resources to key participants for conducting business activities;
- payment systems (VISA, MasterCard);
- insurance companies;
- forwarding and transport organizations;
- security structures;
- companies that lease warehouse, production and retail space;
- leasing companies;
- consulting firms;
- state authorities in the form of tax, customs authorities, etc.

The difference between key and supporting roles is not always obvious, as the same company can perform both key and supporting roles. For example, a company that leases storage or manufacturing space can act as a supplier to a focal company for raw materials and suppliers, or as a buyer of finished goods, a consumer. However, a differentiated approach to the definition of participants as key or auxiliary allows to streamline and, therefore, to simplify the management of logistics processes within supply chains.

Participants of supply chains, interacting with each other, establish economic ties. Types of business relationships between supply chain participants are presented in Figure 2.3.

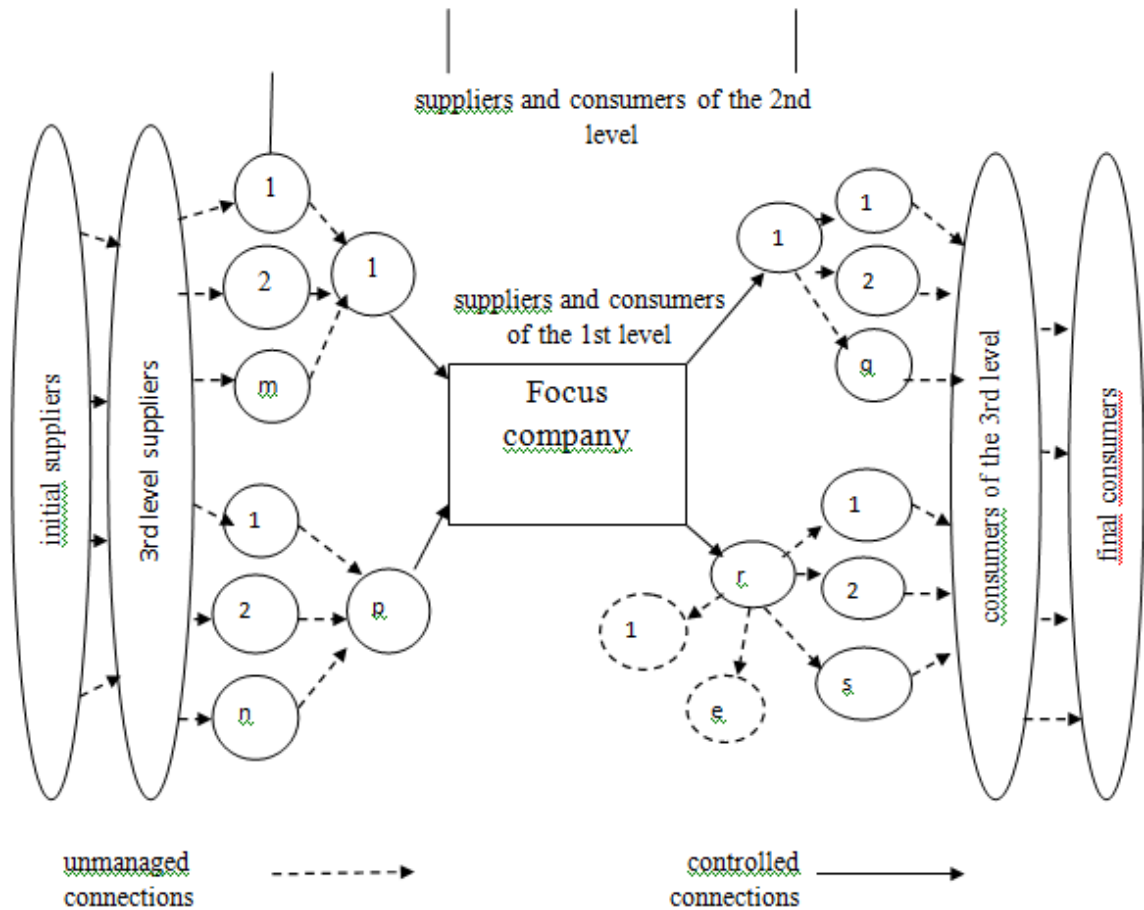


Fig.2.3 Types of business relationships between supply chain participants [41]

There are four types of business process connections between supply chain participants [43]:

- managed relationships, including close cooperation, especially with suppliers and consumers of the first level;
- traceable communications, such as requesting data from the second tier to the original suppliers and providing information to the second tier consumers;
- unmanaged connections between supply chain participants are connections that the focal enterprise cannot or considers impractical to manage or monitor because it either fully trusts other participants to manage these connections, or due to limited resources, cannot control;

- links with objects that are not part of the supply chain are the connections between the focal enterprise and objects that are not part of the supply chain, but can affect the efficiency of its operation.

Economic ties between supply chain participants create prerequisites for integration; integration, in turn, ensures the stability of chains.

There are three main stages of achieving strategic compliance of supply chains [44].

Stage I. Formation of the supply chain uncertainty list. In the activity of any economic system, one way or another, there is an element of uncertainty. In the supply chain, uncertainty depends both on objective factors related to consumer demand and on the uncertainty that arises when organizing work with business partners. Therefore, it is necessary to analyze and evaluate the uncertainty of the supply chain taking into account the corporate strategy.

Stage II. Assessment of supply chain potential. At this stage, it is necessary to solve the problem related to how the satisfaction of customer demand will be achieved, taking into account the available resources. The main characteristics of the supply chain are considered in the focus of finding a compromise between total costs and the degree of consumer satisfaction with the quality of the finished product and the service provided. This trade-off in supply chain management theory is called the "reactivity/efficiency" trade-off.

Reactivity of the supply chain (SCR) - the ability to promptly respond to external changes in the environment [44]:

- reaction to the necessary breadth and depth of the product range;
- willingness to reduce the order fulfillment time;
- creation of innovative products and the appropriate level of service;
- management of the supply process in changing conditions.

The efficiency of the supply chain (SCE) is determined by the total costs in the supply chain from product development to its delivery to the end consumer and after-sales service. It is advisable to place the projected supply chain on the SCE/SCR spectrum.

Stage III. Achieving strategic fit. At this stage, the results of the previous stages are recorded in the strategic matrix (Table 2.4). The relationship between "SCE/SCR" parameters and the degree of certainty forms options for several strategies for the supply chain.

Table 2.4 An example of a list of estimated uncertainty [45]

<b>Reactivity</b>	Comprehensiveness strategy	Strategy of operational dynamism
<b>Efficiency</b>	Channel Focus Strategy	Strategy of individualized customer service
	<b>Anticipated demand</b>	<b>Unpredictable demand</b>

The result is the development of a strategic plan for the supply chain, which includes the following points [45]:

- determination of general goals and objectives of all participants in the chain;
- configuration of the supply chain, with the selection of the central company;
- a system of performance indicators for strategy implementation (KPI);
- assessment of the required level of information exchange.

The following main characteristics of the strategic plan are distinguished:

1. The strategic plan defines the prospective directions of the enterprise's development, which allows linking the enterprises of various spheres of activity (production, distribution, supply, transport) into a general system.
2. Sets goals and objectives for each member of the supply chain, which are interconnected with the overall strategy for the development of the supply chain.
3. Ensures coordination and integration between all participants in the supply chain.
4. Stimulates enterprises to objectively assess their advantages and disadvantages from the point of view of competitors and environmental changes.
5. Determines alternative actions of enterprises in the long-term period.
6. Indicates the importance of practical application of the key functions of planning, organization, management, and control.

A company's ability to strike a balance between reactivity and efficiency that meets consumer demand is key to achieving strategic fit. A central company faces a number of obstacles in deciding where this balance lies on the SCE/SCR spectrum.

1. Depth of assortment. Currently, the consumer market is characterized by an increase in demand for goods and services made to order. The expansion of the range of products complicates the design of the supply chain due to the fact that demand can be difficult to predict for some product groups. Increased uncertainty often leads to increased costs and reduced supply chain responsiveness.

2. Reduction of the life cycle of products. As the assortment increases, the product life cycle shortens as new products displace existing products from the market. Hence, the supply chain must adapt to dynamically evolving changes.

3. Customer requirements. Consumer demand is characterized by increasing requirements for the logistics activities of manufacturing companies, i.e. there is a need for high quality while maintaining a certain price level and for quick order fulfillment. In this situation, supply chains must provide a larger list of logistics services in order to remain competitive in the market.

4. Horizontal integration of the supply chain. The supply chain integrates various enterprises that differ in specialization, form of ownership, and organizational structure, which complicates the process of managing the entire chain.

5. Globalization. Taking into account the activity of globalization processes, the participants of supply chains can be located far from each other, this affects the difficulties of coordinating their activities that arise [46].



## **CHAPTER 3 STUDY OF LOGISTICS ACTIVITIES "NOVA POSHTA"**

### **3.1 ANALYSIS AND EVALUATION OF THE EFFECTIVENESS OF THE MANAGEMENT ORGANIZATION OF LOGISTICS ACTIVITIES AT THE ENTERPRISE**

Today, a large number of Ukrainian enterprises actively participate in foreign economic activity, this is directly related to the fact that the domestic market of Ukraine is not able to satisfy the consumption of all goods and services offered by manufacturers, so enterprises are forced to expand their markets.

"Nova Poshta" enters foreign markets, where competition from foreign companies is very strong. In order to occupy a certain niche in the foreign market, it is necessary to determine strategic directions of development, improve export activities, improve the quality of services provided - this will allow achieving a long-term competitive advantage.

The main goal of the formation of the structure of management of foreign economic activity in "Nova Poshta" is to obtain the maximum profit in the long term from participation in international business. This structure at the enterprise requires constant development and improvement, adaptation to constant changes in the external environment and management. Forms and methods of managing foreign economic activity at "Nova Poshta" must constantly change.

An enterprise seeking to implement effective foreign economic activity should improve the marketing component of its activity [47, p.172]. For this, it is necessary to conduct more effective marketing activities (Fig. 3.1).

In order to find ways to improve the efficiency of the enterprise's foreign economic activity, "Nova Poshta" needs to [47]:

- to study the dynamics of the development of the enterprise's foreign economic activity;
- analyze the rational use of all resources, consumer interest in the company's services and products on the foreign market;

- to investigate the problems of increasing the efficiency and development of foreign economic activity;
- to determine directions for improvement of the system of management of the enterprise's foreign economic relations;
- improvement of organizational and economic measures to increase the competitiveness of export goods and services;
- assess the level and quality of the company's fulfillment of obligations under contracts with foreign partners, determine the effectiveness and benefits of such cooperation;
- to determine the method of analytical evaluation of the effectiveness of a separate export operation.

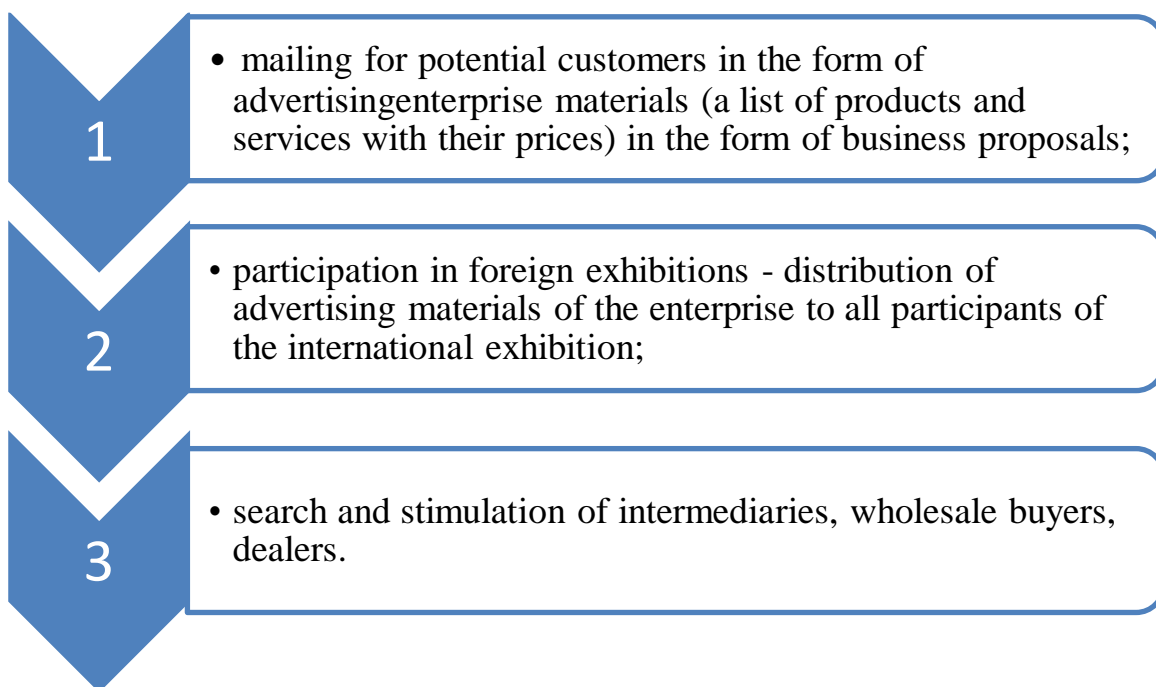


Fig.3.1 Marketing measures for the implementation of effective foreign economic activity of the "Nova Poshta" enterprise [48]

One of the possible ways to improve the export services of "Nova Poshta" is to find new partners, that is, to find a better buyer from an economic point of view. One of the important steps for any business is choosing a contractor. In some cases, this is the main way to improve export operations. The choice of a foreign

partner depends on a combination of factors that collectively reflect the essence of the enterprise's entry into foreign markets, Fig. 3.2.

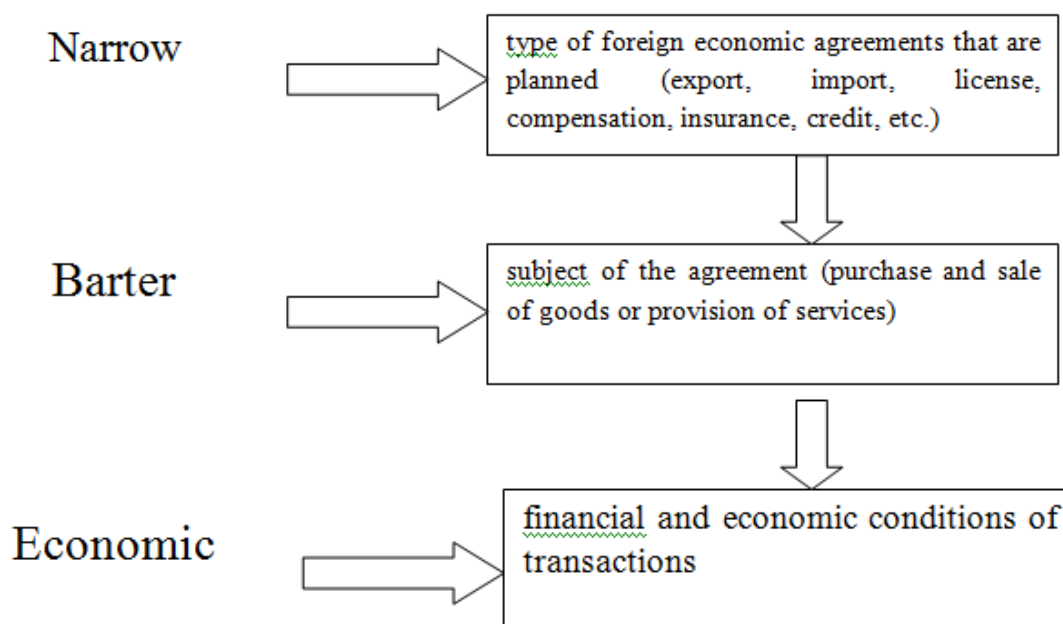


Fig. 3.2 Factors that affect the choice of partners when conducting foreign economic activities of the company "Nova Poshta" [49]

The following factors also influence the choice of a partner [49]:

- prices for services and goods;
- technical level of the company's products;
- organization – research and development works and their cost;
- organization of enterprise management, including foreign economic activity;
- financial situation of the enterprise;
- current norms and rules governing cooperation with a potential partner in this country.

The following characteristics can be used to evaluate the partners of "Nova Poshta" [50, p.91]. The business reputation of the enterprise determines how well it fulfills its obligations, what is its experience in a specific field of business, its ability to negotiate.

The degree of solidity of a potential partner is determined to a greater extent by performance indicators, the scale of performed operations, and solvency. Comments from existing customers or those firms with which the company has cooperated in the past.

The level of the company's positioning in foreign markets. If the company is an intermediary, then a more serious investigation must be conducted. First of all, the financial situation is investigated, it is necessary to check the volume of sales for a certain period, the presence of own trade networks and their quality.

The number of possible directions for improvement of the foreign economic activity of "Nova Poshta" is quite wide. The company needs to choose the most realistic and achievable directions from all possible options for the development of foreign economic relations. The foreign economic activity of the enterprise is closely related to transportation, which is one of the important components of the process of organizing the delivery of goods from the place of their production to the place of consumption.

Therefore, the main task of increasing the efficiency of the export activity of the "Nova Poshta" is to improve the logistics activity of the enterprise; selection of the most profitable routes of international road freight transportation; concluding an agreement with a foreign transport forwarding or postal company on joint activities.

In general, the market continues to show high growth rates by global standards, which attracts more and more new players and thus increases competition [51].

The assessment of the efficiency of logistics activity involves the selection of the main areas of analysis of the indicators of "Nova Poshta". The main direction of the company's activity is transportation and warehousing services, therefore, the system for evaluating the functioning of the logistics system should include indicators characterizing work in these areas [51].

As mentioned, the main focus in the enterprise's logistics activities is on reducing costs for all types of logistics operations, improving the flexibility of the logistics system and efficiency [52].

Let's consider the dynamics of the volume and structure of logistics costs of "Nova Poshta" table 3.1.

Table 3.1 Dynamics of the volume and structure of logistics costs of "Nova Poshta" in 2020-2021 [53]

Indicator	2020	2021	Deviation	%
Cost of goods sold	10504342	12877086	2372744	22,59
The share of logistics costs in the cost of services, %, thousand UAH	80	70	-10	-12,50
Administrative expenses, thousand UAH	1244681	1469141	224460	18,03
The share of logistics costs as part of administrative costs, %, thousand UAH	35,5	30,2	-5	-14,93
Sales expenses, thousand UAH	337 356	416 263	78907	23,39
The share of logistics costs in sales costs, %	65	50	-15	-23,08
Other operating expenses	488 313	768 703	280390	57,42
The share of logistics costs in the composition of other operational costs, %	4	4	0	0,00
Total costs	8 864 920	9 488 472	623552	7,03

The analysis showed that the largest specific weight by share in the structure of logistics costs falls on the costs of the implementation of services. This figure was 80, and 70% of all implementation costs were attributed to a number of logistics. Such a large share is directly related to the field of activity of the enterprise.

Table 3.2 Logistics activity indicators of "Nova Poshta", 2018-2021 [53]

Indicator	Year			
	2018	2019	2020	2021
Average stock in the warehouse, pcs	6530	8000	14000	18000
Speed of turnover	2	2	2	2
Time of circulation of goods	5	5	5	5
Ready for delivery	0,99	0,99	0,99	0,99
Share of stocks in circulation	45	50	52	60

As can be concluded from the data given in table 3.2 , the goods in the warehouses are never delayed for more than 2-3 days in general functioning and 5 days in extraordinary situations, and also a very well-established system of returns, redirections and postponement of delivery dates, all this gives the quality of service is at a level higher than 98%, and the punctuality is 93%, which is an unprecedentedly high result in the market, taking into account the volume of turnover, because on average, about 8 thousand shipments pass through the delivery service terminal per day. Table 3.3 describes these indicators in more detail.

Table 3.3 Indicators of the efficiency of logistics activity of "Nova Poshta"[54]

Indicator	2019	2020	2021
Indicators characterizing the efficiency of the logistics system			
Turnover of logistics assets	25,00%	25,10%	22,20%
Return on investment in the logistics system	6,00%	8,10%	9,90%
Reliability of supplies	0,98	0,985	0,99
Readiness for delivery	0,96	0,97	0,98
Indicators characterizing the productivity of the logistics system			
The number of unloading/shipments per 1 worker	120	130	200
Indicators characterizing the flexibility of the logistics system			
Flexibility of execution, order	0,99	0,99	0,99
Payment flexibility	1	1	1

The main indicator that characterizes the efficiency and reliability of the enterprise's work is profit. After analyzing the impact of each element of the logistics system on the change in profit, it is possible to assess their significance, which will allow building a rational improvement model. The second stage is the selection and analysis of indicators characterizing the efficiency, productivity and flexibility of the company's logistics activities. From the entire range of indicators, we will highlight those that are most significant for the further construction of the model.

### **3.2 JUSTIFICATION OF THE STAGES OF IMPLEMENTATION OF THE LOGISTICS STRATEGY AT THE ENTERPRISE**

In order to classify logistics processes and implement logistics management in the daily activities of "Nova Poshta", it is necessary to create an independent division in the organizational structure of the logistics service company, which is directly subordinated to the management of the company.

A key prerequisite for the implementation of the theory of integrated supply chain management is the organization of business processes at the enterprise at a high level, since supply chain management is the integration and management of key business processes in the supply chain.

Unlike warehouse inventory, it takes a long time to increase or decrease production capacity. These risks can be reduced through greater flexibility, i.e. using the same production facilities to produce different types of products. The main goal of production optimization is to form the best production plan, assembly process and even implement a smart location of the equipment based on the overview and forecasting of the demand.

Excessive storage reserves can negatively affect financial performance. In this case, it is necessary to consolidate stocks, make common components for different types of products and postpone the final stage of production until all orders are received. Therefore, in order to effectively manage reserves, we must first ensure its transparency, and then establish a close relationship regarding the management of reserves (including warehouse) with other divisions and contractors of the company.

Optimization of logistics, first of all, consists in reducing losses. In the process from production to the buyer, the quality of the product actually decreases steadily, and the task of supply chain management is to change the attributes of the product to a minimum. To this end, the supply chain must respond quickly to constantly changing conditions, ensure a rapid flow of goods, transparent

information and facilitate close integration between the company and its partners and contractors. At the initial stage, "Nova Poshta" should focus on improving internal processes and functions [55].

At a later stage, the evolution of the supply chain will expand to a cross-functional level. If the previous logistics in "New Post" was reduced to warehousing and transportation, then at the new stage of logistics formation, it will also become a general system of logistics planning, management and control. During this period, logistics began to take on more and more functions that were previously performed in the sales department. This is due to the complexity of cargo transportation and the need to use special knowledge and logistics methods. The management will understand the effectiveness of the new standard and will try to spread it to "Nova Poshta". The main focus is on improving the process of supplying products and services in each supply chain. For this purpose, certain areas of activity are automated and special information technologies are introduced (warehouse management, transportation). The procurement strategy is focused on establishing tactical relationships with a narrow circle of contractors. At this level, the main factor is the accurate forecasting of demand management, which is the key to effective planning of sales and operations.

A barrier to the transition to the third level can be the mistrust of "Nova Poshta" management towards external partners and reluctance to share information with them. Management that has overcome these stereotypes is taking the company to the next modern level with maximum transparency and collaboration. At this level, procurement is done by several main contractors. Business partners participate in the planning of the company's activities and develop new products and services. The logistics department establishes tactical cooperation with qualified 3-PL suppliers and implements information systems in them to increase the transparency of information exchange and cargo flow between supply chain partners. Marketing and sales participate in the formation of the supply chain, ensuring the participation of key customers in the configuration of services through an interactive Internet portal. The combination of modern special technologies of



collaboration and information exchange (CRM, SRM, e-commerce, e-commerce) allows the company and its external partners to achieve a high degree of transparency in each supply chain, thereby reducing order processing time, service delivery time and efficiency of physical resource management [56].

The facts proved that increasing the efficiency of the supply chain is the key to the further formation and competitiveness of "Nova Poshta". The use of modern special technologies for integrated logistics management plays an important role in building the right supply chain to ensure the highest consumer satisfaction.

A modular structure of departments and groups of logistics services can be used in a micro-logistics chain operating in the conditions of various production and economic activities of an enterprise or organization. In "Nova Poshta", it is recommended to use the option for industrial enterprises with a full production cycle, mass consumption of material resources and a wide variety of services.

This option involves the use of the spatial structure that it forms, and is a process of much iteration performed in the following order (using iteration) [57]:

- a number of logistic functional blocks were implemented, the number of which depends on the activity of business entities;
- according to the number of employees and the amount of material and technical resources used, a department or group of logistics service is formed;
- the principles of forming the organizational structure for each department or group of the logistics service are established;
- the functions of the logistics service department and group are determined in accordance with the full range of logistics business carried out by the enterprise in the direction of production and economic activity
- calculate the number of employees required for each department or group of logistics services, based on the volume of logistics operations performed;
- material and information flows are formed during interaction between logistics services and other organizational structures of the enterprise. The proposed structure allows parallel distribution of unique functions throughout the management of material flows at the enterprise.

A mandatory working document reflecting the composition of information in the object is the logical information scheme (LIS) of the object (Table H.1); (APPENDICES H), which allows displaying a list of all information about the circulation in the sales department (input, output, link standard) , and by object. The main types of work performed in the group.

The form of a particular document usually depends not only on the labor costs of the workers who compiled those documents, but also on the labor costs of the personnel who research, analyze, and use those documents for reference.

If a company has an efficient logistics system compared to its competitors, it can maximize this advantage by serving customers whose costs are most important or whose needs are the most complex.

The costs of servicing different customers can vary significantly in terms of [58]:

- volume of the order;
- distribution system (channel) - direct sale and through a distributor;
- the time required to implement the order;
- regularity of receipt of orders from the point of view of planning and logistical goals;
- sales costs,
- expenses of expulsion;
- needs for product customization or modification.

This strategy can be interpreted as the main strategy of a particular enterprise or also as a type of core strategy (for example, the strategy of supply of spare parts) or another strategy aimed at service differentiation. It may also be suitable for serving a niche market. A priority element or a set of the most important, in particular standardized elements, determines the level of service offered by the company. The level of customer service is often measured by the percentage of availability of products from stock or the degree of readiness for delivery, as well as other important elements and standards of service in this market, for example,

delivery time. The level of service must be set according to the real needs of customers; it can be neither too low nor too high.

The strategy involves the skillful use of relationships between costs and revenues from sales. At the same time, the company tries to achieve such a level of logistics service that maximizes profit, that is, provides the largest difference between sales growth and additional costs for its achievement - it requires the application of an offensive and risky service strategy (the strategy of low costs and high service standards), which is based on high logistics skills and analysis of competitors' achievements.

In the short term, competitiveness depends on costs, in the long term - on the core of skills, that is, on the ability to ensure quick adaptation to changing market conditions.

After customers determine the elements of service that are essential from their point of view, the firm can start developing a system of indicators of the quality of pre-sale, during-sale and after-sale service. At the same time, certain persons should monitor these indicators, and the results of monitoring should be regularly provided to their managers, who analyze deviations and adjust actions to improve customer service.

All indicators can be generally divided into three groups: indicators of availability, indicators of capacity and indicators of quality.

1. The availability of the product at the time needed by the consumer can be measured in different ways, for example, as a percentage of orders sold from stock, in units of products, or in relation to assortment items. For example, 95% of the units of a certain product in stock are able to satisfy 95% of the demand for the ordered units of this product at the time the customer places the order.

2. Capacity indicators include: delivery time, flexibility of the distribution system, damage and errors in the process of manipulation and distribution. For example, delivery time in days, or % of orders sent and received within 2 weeks. The type of indicator depends on the goals of control and priorities - what we want to pay attention to.

3. Service quality indicators relate to information and after-sales service (technical information service for the client). Example; the availability of spare parts, the readiness of the staff to provide information on the fulfillment of the order and the availability of stocks, etc [59].

With the growing instability of the environment, the need of companies for strategic management is growing. Strategic management is possible as result-oriented management. The company's logisticians must manage strategically. They should constantly monitor the situation with the help of the following tools [60]:

- to simulate the logistics situation;
- determination of market changes and the need for changes;
- development of a change strategy; application of scientific methods of change;

An integrated logistics system should easily adapt to changes in the internal and external environment. The axiom of strategic management is that in order to survive and succeed, the company's management must adhere to aggressive operational and competitive behavior. Only in this case, the company will be able to satisfy the variability of demand and various market opportunities. The strategy defines an important approach that is chosen to achieve the goal.

Logistics strategy: decision-making rules and relationships that determine the development of the company's logistics system. Employees of the logistics service follow these rules in their logistics activities; A generalizing model of actions necessary to achieve set goals through coordination and distribution of company resources.

"Nova Poshta" company strategy: Resolute protection of business through aggressive marketing and reduction of overall costs. Investment in new areas and long-term construction. Careful monitoring of new competitors. Implementation of the attack strategy within the company thanks to the brand management system and the targeted allocation of resources for marketing and technology development. Transferring the methods of successful companies to larger brand departments.

Recommendations for the development of a logistics strategy [61]:

- when developing and implementing strategic measures in the field of the company's logistics activities, give priority to those that ensure the long-term improvement of the company's competitive position.
- a clear, thought-out and consistently implemented logistics strategy gives the company a good reputation and recognition on the market.
- investing in creating sustainable competitive advantages for business.
- using an aggressive marketing attack to gain a competitive advantage.

It must be remembered that aggressive actions aimed at capturing a part of the competitors' market can provoke an aggressive response in the form of an arms race and/or a price war in the market. This leads to a decrease in the level of profit of all market participants. Aggressive moves to increase market share lead to fierce competition, especially when the market suffers from high levels of inventory and overcapacity.

When using a differentiation strategy, it is best to identify key customer service gaps. Small differences in logistics services of competitors can be perceived by consumers and they, in turn, can give them significant importance [62].

### **3.3 ECONOMIC SUBSTANTIATION OF THE EFFECTIVENESS OF THE PROPOSED MEASURES FOR "NOVA POSHTA"**

We will conduct an economic justification of the proposed measures, the implementation of the FMS-T system at the LLC "Nova Poshta" enterprise (GPS tracking and fuel control system) and the "1C: Enterprise. TMS Logistics. Transport management".

We will determine the required amount of initial costs for the implementation of the FMS-T system and the "1C: Enterprise" system at "Nova

Poshta". TMS Logistics. Transport management" and enter the data in the table 3.4 [63].

Table 3.4 The cost of initial costs when implementing the FMS-T system and the 1C: Enterprise system at "Nova Poshta". TMS Logistics. Transport management", thousand UAH [64]

Cost item	1 year of implementation	2nd year of implementation	In total
FMS-T system			
Installation of sensors for cars	3100	1200	4300
Installation of sensors for trucks	4200	3100	7300
The cost of the software	6800	5400	12200
System "1C: Enterprise. TMS Logistics. Transport management"			
Purchase of licensed software	15 000	2 000	17 000
Software installation	1000	-	1000
Service	2000	1300	3300
Training of system users	1500	800	2300

So, the most expenses in the FMS-T system will be the cost of software - UAH 6,800 thousand. The initial cost of the FMS-T system for 2 years of implementation will be UAH 23,800,000, and the "1C: Enterprise. TMS Logistics. Transport management" - 23,600 thousand UAH, of which the most expensive is the purchase of licensed software, as much as 15,000 thousand UAH in the first year of implementation [65].

We will analyze the economic feasibility of the proposed systems and present the results in the table 3.5.

Table 3.5 Distribution of completed options [66]

Indicator	FMS-T system	System "1C: Enterprise. TMS Logistics. Transport management"	Total revenue from services
Change in net income (revenue) from the sale of services, %	1,5	0,9	2,4
The absolute value of net income (revenue) from the provision of services, thousand UAH	$5833 \cdot 0,015 = 87,5$	$5833 \cdot 0,009 = 52,5$	140

Analyzing the table 3.5, it can be seen that the rate of change in net income from services of the FMS-T system is greater than in the system "1C: Enterprise.TMS Logistics Management of Transportation", by 0.6%, and is 1.5%. This means that the implementation of the FMS-T system is more profitable for the company than the system "1C: Enterprise. TMS Logistics. Transport management". But, if we consider the two projects together, then the indicator of the absolute value of the net income (revenue) from the provision of services will increase by UAH 140,000, and the indicator of the change in the net income (revenue) from the provision of services will increase by 2.4% [67].

The financial results after the implementation of both systems are listed in the table 3.6.

When new documents and programs are approved at the enterprise, it is necessary to make an economic evaluation of this document.

Table 3.6 Financial results after the implementation of the FMS-T and "1C: Enterprise" systems. TMS Logistics. Transportation management" at the enterprise "Nova Poshta" [68]

Indicator	FMS-T system	System "1C: Enterprise. TMS Logistics. Transport management"
Net income from services, thousand UAH	87500	52500
Cost of services provided, thousand UAH	23800	23600
Gross profit, thousand UAH	63700	28900
Operating expenses, thousand UAH	9500	3300
Profit from the implementation of the provided services, thousand UAH	54200	25600
Enterprise income tax (15%), thousand UAH	290,5	65,5
Net profit, thousand UAH	53909,5	25534,5
Profitability of implementation, %	53	47

Having calculated the financial results after the implementation of the FMS-T and "1C: Enterprise" systems. TMS Logistics. Transportation management" at the company "Nova Poshta", it can be seen that the net income from the implementation of the 1st system is 87,500 thousand UAH, and the 2nd - 52,500 thousand UAH. The net profit of the FMS-T system is UAH 53,909.5 thousand,

"1C: Enterprise. TMS Logistics. Transport management" - UAH 25,534.5 thousand. At the same time, operating costs amount to UAH 9,500,000 and UAH 3,300,000, respectively [70].

So, it can be concluded that these projects are profitable and effective; therefore these projects should be implemented at the "Nova Poshta" enterprise.



## CONCLUSIONS

A "logistics process" is a system framework for decision-making that combines transportation, inventory, warehouse space, material handling systems, packaging, and other related activities that include costs and service from supplier to consumer.

It is important to create a normal living and working microclimate in teams, which contributes to job satisfaction, encouragement for the originality of the decisions made, for conscientious work and dedication to the company. Economic and simulation models should be easily accessible to company employees and developed in the form of computer programs. Compliance with the previously listed standards also plays a significant role in increasing the efficiency of the company's logistics service management. By comparing them with the obtained results in quantitative terms, by comparing them with the planned ones, the activity of the employees of the logistics service is evaluated. Thus, the factors and indicators for evaluating the effectiveness of the functioning of logical systems were considered, as well as the main problems of optimizing logistics activities were determined. Control of logistics costs requires that the activity of the enterprise be evaluated as a whole. In order to understand the business, you need to have an idea of the performance of all its functional areas. When controlling only the costs generated within one separate business in the logistics chain, it cannot be said that logistics costs are really under control. Control over logistics costs requires, at least, that all costs are known and the process of their formation is clear.

Summing up, it can be argued that the application of the principles of logistics management would enable the enterprise to ensure the high competitiveness of its products and services through cost optimization, the most complete satisfaction of consumers in quality goods and services. This effect is achieved by significantly reducing stocks of material resources and finished

products in the areas of production, supply and sales, reducing the duration of the production cycle and the cycle of fulfilling customer orders, introducing flexible automated and robotic productions that allow you to quickly switch to the production of new types of products, creating distribution channels sales, etc.

Therefore, the final goal of conducting a comprehensive analysis of the company's logistics system is to identify reserves and search for ways to improve the logistics system, among which the main areas are: optimization of flows of material resources, transportation of goods and finished products; ensuring correspondence between the strategy, tactics and operational goals of the logistics strategy and the general goals and strategy of the enterprise; creation of a rational algorithm of interaction between all participants of the logistics chain, with the aim of providing high-quality customer service based on the principle of increasing quality and reducing costs.

It was determined that the organization and operational flow management have a leading role in the operational management of the enterprise, in the timely supply of goods and especially in ensuring the improvement of production efficiency, as all issues related to the use of production resources in time and space are resolved within their framework.

The facts proved that increasing the efficiency of the supply chain is the key to the further formation and competitiveness of "Nova Poshta". The use of modern special technologies for integrated logistics management plays an important role in building the right supply chain to ensure the highest consumer satisfaction. A modular structure of departments and groups of logistics services can be used in a micro-logistics chain operating in the conditions of various production and economic activities of an enterprise or organization. In "Nova Poshta", it is recommended to use the option for industrial enterprises with a full production cycle, mass consumption of material resources and a wide variety of services.

It is quite natural that the information needed to control the document flow of the company will be significantly different from the information about the progress of the general system of the program functioning at the enterprise. The

same can be said about the necessity of compliance of the control system with the position of the official carrying it out.

In addition, the system of control in the system of "Nova Poshta" is completely different from that in small and medium-sized companies. The very nature of control indicates that the more its system takes into account the specific content and structure of the plan, the more effectively it will satisfy management requirements. The conclusion follows: since the control of the system aims to ensure the execution of the plan, it must be clearly tied to it. Business processes under control should also correspond to the organizational structure, because the latter is a means of clearly placing personnel in the enterprise and helps to distribute responsibility for the effective implementation of the plan. In this connection, the control system should be comparable to the organizational structure

One of the ways to improve logistics service, one of the factors of increasing export activity is information provision. For this, the implementation of the "1C: Support" system was implemented. TMS Logic" – a product for automation and expansion of interaction with customers. The expediency of introducing these products to the enterprise was economically substantiated. According to the obtained results, the implementation of these projects gives a positive result and they can be proposed for their further implementation at the enterprise.

It was determined that the organization and operational management of material flows have a leading role in the operational management of the enterprise, in the timely supply of products and especially in ensuring the improvement of production efficiency, since all issues related to the use of production resources in time and space are resolved within their framework. The application of material flow management systems in the practice of "Nova Poshta" is explained by the need to reduce the time intervals between the receipt and delivery of goods to the end consumer.

To achieve the goal, the following tasks were solved: the logistics system of the enterprise was studied; organizational structure and distribution management were studied; aspects of inventory management, as well as aspects of the information system, were studied. To improve the management system of international transport forwarding operations of "Nova Poshta", it is proposed to introduce a GPS system for tracking and controlling fuel according to standard costs - the FMS-T system, which is an effective means of reducing the cost of services, and therefore reducing the prices for services of enterprises.

This equipment option is mostly used on cars with gasoline engines, because installing a fuel level sensor is either impractically expensive or technically impossible.

Therefore, it can be concluded that these implementations are profitable and effective; therefore these projects should be implemented at the "Nova Poshta" enterprise. As a result, it can be concluded that the work is economically sound, profitable and with a short payback period and a business process. The projected increase in costs is low, but productive. The final results of the calculation of economic efficiency indicators showed that this project is feasible to implement.

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## APPENDICES A

### SUMMARY

Мірошніченко К.С. Логістична діяльність транспортних підприємств та управління ланцюгами постачань в міжнародному бізнесі - кваліфікаційний документ магістра. Сумський державний університет, Суми, 2022.

Дисертація кваліфікаційного магістра присвячена дослідженню логістичної діяльності міжнародних підприємств та поглиблення теоретичних знань щодо управління ланцюгами постачань, а також розкриття практичних аспектів підвищення ефективності діяльності на прикладі підприємства.

**КЛЮЧОВІ СЛОВА:** ЛОГІСТИЧНА СТРАТЕГІЯ, ЛОГІСТИКА, ВИТРАТИ, ЕФЕКТИВНІСТЬ ЛОГІСТИЧНОЇ ДІЯЛЬНОСТІ, КОНКУРЕНТОСПРОМОЖНІСТЬ, ЯКІСТЬ ПОСЛУГ, ОПТИМІЗАЦІЯ, МОДЕЛЮВАННЯ, РИЗИКИ, ЛАНЦЮГИ ПОСТАВОК, СТРАТЕГІЧНЕ ПЛАНУВАННЯ.

Miroshnychenko K.S. Logistics activities of transport enterprises and management of supply chains in international business - master's qualification document. Sumy State University, Sumy, 2022.

The thesis of the master's degree is devoted to the study of the logistics activities of international enterprises and the deepening of theoretical knowledge about the management of supply chains, as well as the disclosure of practical aspects of increasing the efficiency of activities on the example of an enterprise.

**KEY WORDS:** LOGISTICS STRATEGY, LOGISTICS, COSTS, EFFICIENCY OF LOGISTICS ACTIVITIES, COMPETITIVENESS, QUALITY OF SERVICES, OPTIMIZATION, SIMULATION, RISKS, CHAINS OF SUPPLY, STRATEGIC PLAN.

## APPENDICES B

Table B.1 Morphological analysis of the concept of "supply chain" [9]

Keywords	Definition within a keyword	Specification of the definition	Purpose within the concept
Physical network	passes from the original supplier to the customer	covers organizations	product development, supply, manufacturing, physical distribution and after-sales services; deliveries implemented by external providers of proposals
	interrelated organizations	involves in various processes and actions	delivery of a full range of products and services to the final consumer
		related to the movement and transfer of goods	
	three or more economic units, individuals or legal entities (suppliers, manufacturers, intermediaries, etc.)	performs logistics operations directly participates in logistics processes	bringing the external material flow from one logistics system to another or to the final consumer bringing a specific batch of products to the consumer
external and internal supplies of products, services, finances and/or information from the source to the consumer			
Integrated process	characterized by its own, specific structure of partial processes	covers all processes	implementation of orders; customer service; warehousing and inventory management; preparation of product implementation; agreement of goals and formation of movement systems
	sequence of flows and processes that take place between different counterparties (links) of the chain	combines processes	satisfaction of consumer requirements in goods and services, delivery of products or services to the end user, satisfaction of demand for products or services
	an interconnected set of resources and processes	begins with the receipt of raw materials and ends with the delivery of products / services	
	a set (sequence) of all types of business processes	combines processes	performing processes

Continuation of table B.1

A system of relationships	participants in space and time	forms an integrated logistics flow	formation of an integrated supply function from material resources to intermediate and final finished products
	business entities, local authorities, infrastructure organizations, etc	consists of elements	international supply chain
	suppliers, carriers, warehouse enterprises, intermediaries, manufacturers, subcontractor manufacturers, enterprises and organizations of the distribution network, consumers	similar to the cluster concept	regional integration
		is formed on the basis of cooperation	joint coordination of activities in "space-time" coordinates

## APPENDICES C

Table C.1 Features of the formation of modern global supply chains [14]

The peculiarity of supply chains	The influence of logistics chain participants on enterprises - links of the logistics chain
Use of in sourcing	Presupposes the unification of related species and the division of functions of production activity within the framework of one organization. This kind of integration is typical for enterprises of the fuel and energy, construction, agro-industrial complex.
Internalization of supply chains	The advantages of forming supply chains based on internalization are: increased control over system participants; management of intra-company flow processes from a single logistics center mainly on a commodity-free basis; ensuring stability and reliability of economic relations and supplies.
Externalization	Distribution of the functions of production activity between different enterprises with the subsequent synchronization of their activities with the help of partnership agreements (outsourcing). To the greatest extent, this way of development of relations in the supply chain is characteristic of enterprises of the automobile industry, where most of the components are produced at outsourced enterprises. The synergy of outsourcing results is enhanced as a result of network integration with partners within the framework of corporate alliances. This form of strategic integration should be attributed to extractive systems that are weakly structured
Creation of so-called "brand companies"	The activity of these companies consists in the development of a product (service) and the transfer of all components of the "supply - production - sales" process to external partners: suppliers and consumers. The released capital of the brand company is directed to the development of new products. Such integration in the supply chain is based on the outsourcing of key competencies and the virtualization of counterparty activities. The interaction of counterparties in this field creates a kind of network of external structures of the "value-added society" (VAS) around the brand companies.



## APPENDICES D

Table D.1 Business processes in supply chains [30]

Approach to distribution	Types of business processes	The essence of business processes
Depending on the creation of value for the consumer	basic	The processes of the current activity of the company, the result of which is the development of outputs needed by the external client
	Auxiliary	Ensure the existence of basic processes
By scale	Strategic	Complex higher-level processes that combine and coordinate all business processes in the logistics chain
	Tactical	Business processes corresponding to logistics functions/phases and logistics management functions
	Operative	Business processes corresponding to logistics operations
Stock-Lambert model	Management of relations with consumers	Identifying who the key customers and key customer groups are - that is, those who have a critical impact on the success of the organization's business
	Customer service	Helps the parties to transmit and receive information on the planned delivery dates of products, on their availability and on the operations carried out during production and distribution
	Demand management	Includes actions aimed at determining what and when consumers will buy
	Order fulfillment management	Satisfying consumer needs according to the "due date"
	Production/Operations Management	Movement of products at the enterprise in the "extraction" mode, which is driven by consumer requests
	Supply management	Obtaining the necessary information from the supplier at the beginning of the development process.

Continuation of table D.1

	Product development and commercialization using	In order to reduce time to market with new products, it is necessary to include consumers and suppliers in the process of its development
	Management of returned material streams	Preventing the return of products, reducing the volume of material movements in the direct direction in order to reduce the flow and in the reverse direction, ensuring the reuse and reprocessing of materials

## APPENDICES E

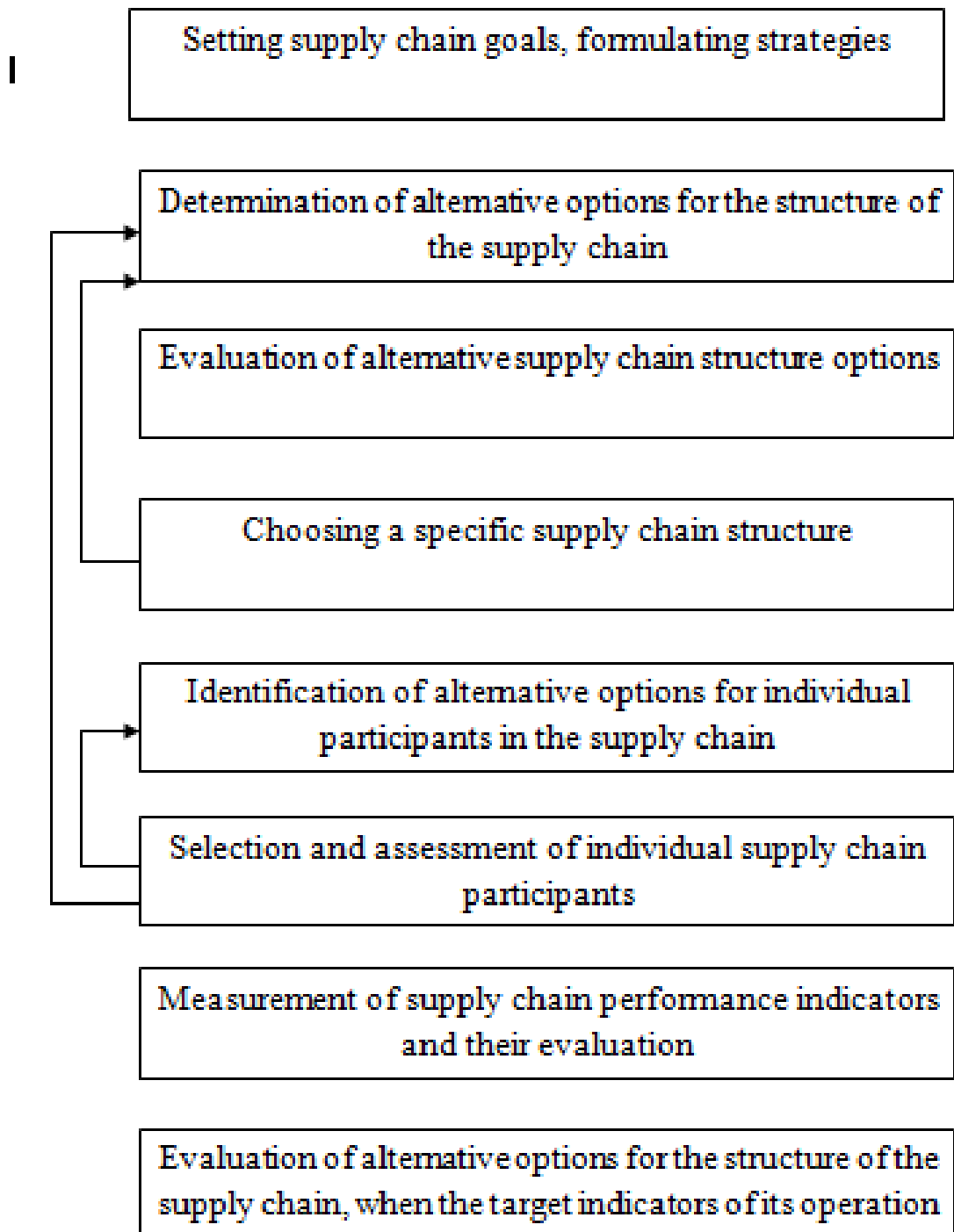


Fig. E.1 Supply chain design algorithm [32]

## APPENDICES F

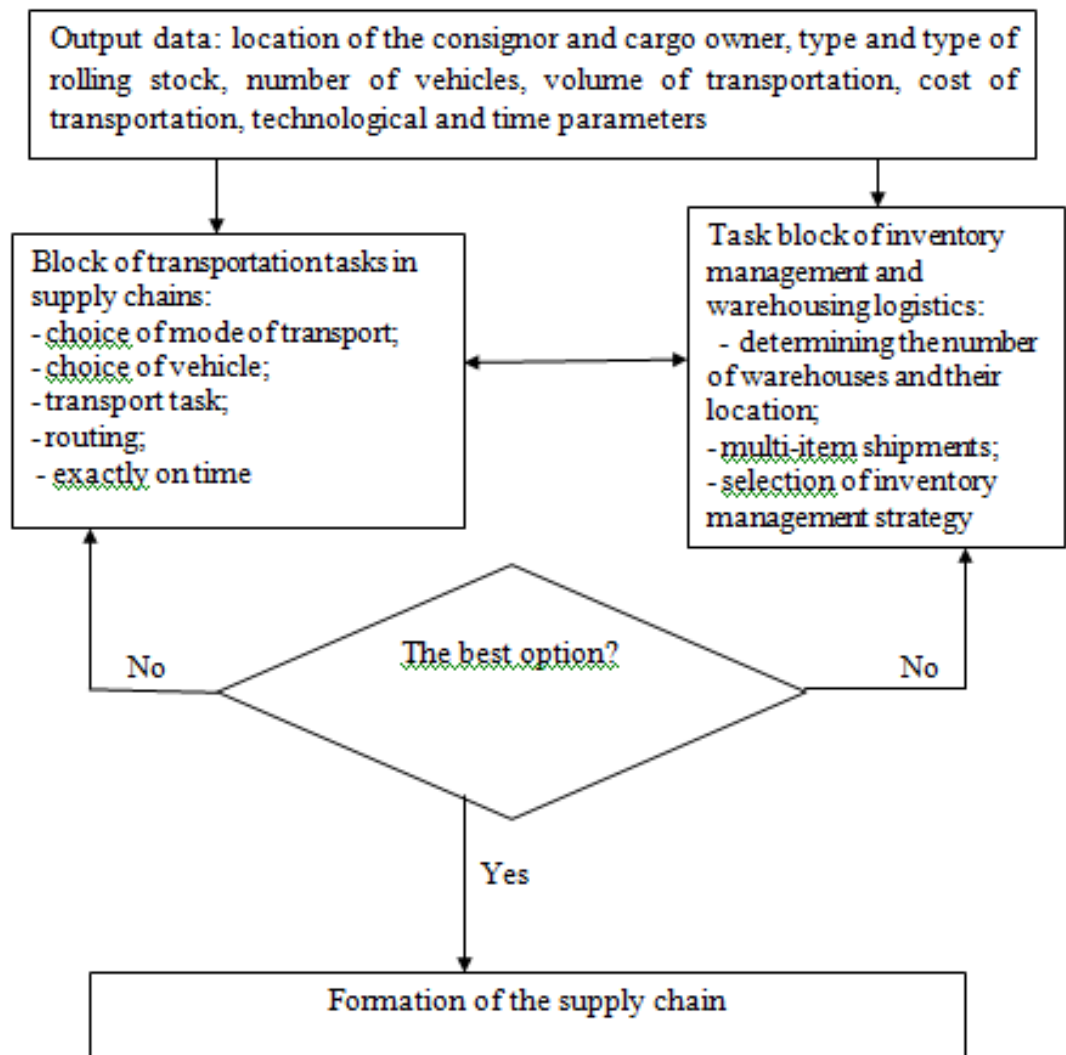


Fig. F.1 Generalized supply chain design algorithm [32]

## APPENDICES G

Table G.1 Methods of managing organizational changes in supply chains [39]

The essence of the methodology	Reduction in the number of errors, costs, cycle time	The deadline for making changes	Conducting procedure	The main result
Methodology of rapid solution analysis				
Is an approach that focuses a group's attention on a particular process to identify ways in which that process can be improved	By 5 - 15%	Short-term period (up to three months)	First, the problem is defined; then a group of specialists is created, which, within one or two days, develops a generalized block diagram of the process and a plan of measures capable of improving the process indicators.	Reduction in the number of errors, costs, cycle time
Benchmarking				
Comparison of performance indicators of their processes with performance indicators of the processes of another organization, that is, using best practices	By 20 - 50%	A period equal to 4-6 months	Key processes are identified and compared to similar best practices to identify unwanted discrepancies. Based on the comparative analysis, several organizations are identified that perform better than the organization conducting the research. The other organization's processes are then evaluated to determine	Allows to reduce costs, cycle time and error rate, increase process productivity

Continuation of table G.1

Redesign				
Improvement of an already existing process. It is applied to those processes that work quite successfully	By 30 - 60%		A simulation model of the current state of the company is being built, in the implementation of which the modernization of the process takes place due to the use of automation, mechanization, application information technologies	Duplication of functions is eliminated, standardization is taking place and simplification of methods; the duration of the cycle is shortened; the process is protected against errors
Reengineering				
Is an approach to improving the organization's business processes; based on the development of a new process; is the most radical way of introducing structural changes using innovative technologies	Reduction of costs and cycle time by 60-90% and error rate by 40-70%	Consumable in terms of time resources	Development of the image of the future enterprise. At this stage, the company builds a picture of how to develop the business to achieve strategic goals. Analysis of existing business. A study of the enterprise is conducted and schemes of business processes of its functioning at the moment are drawn up. Development of new business. New and/or changed processes and supporting information system are developed,	Allows to ensure maximum improvement of outdated processes

## APPENDICES H

Table H.1 – Logical and information scheme of the sales department [58]

List of procedures	Performers				Input information	Output information	Normative reference information
	Manager for work with consumer enterprises	Manager of work with regional representatives	Store managers	Managers for work with the private sector			
Making a decision about working with a consumer and choosing a consumer	+	+	+	+	Application from the consumer for the purchase of products	Warehouse application for product availability	Methodology of consumer choice
Sending a request to the warehouse about the availability of products	+	+	+	+	Application from the consumer for the purchase of products	Request about the availability of the necessary products	
Registration of product delivery	+	+	+	+	Application for the purchase of products	Order and its copies for the purchase of products	Guidelines based on the Tax Code
Sending products to the consumer	+	+	+	+	Invoice for product delivery	Consumer's confirmation of receipt of products	
Receipt of payment made by the consumer for the received products	+	+	+	+	Invoice for product delivery	Receipt for payment by the consumer	