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## ENTREPRENEURSHIP, TRADE AND EXCHANGE ACTIVITIES

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**RECEIVED:**

20 August 2022

**ACCEPTED:**

20 September 2022

**RELEASED:**

20 October 2022

**UDC 330.3:658**

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**DOI 10.26661/2522-1566/2022-3/21-06**

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### ECONOMIC ASPECTS OF THE LOGISTICS SYSTEMS MANAGEMENT IN A SMALL BUSINESS

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**Abstract.** The article analyzes theoretical foundations of enterprises logistics system construction, gives the classification of main entrepreneurial activity subjects in Ukraine, traces key development trends and outlines a role of small business in the national economic system, conducts a comparative analysis of small and medium entrepreneurship specific weight and defines the main key economical aspects of managing their logistics system. The research conducted studies the theoretical foundations of the formation of ways to optimize the movement of goods in the logistics system of a small business entity with the aim of minimizing economic costs. It states that appropriate management decisions due to the optimization of the logistics system of small business entities should be made regarding delivery terms, taking into account costs and revenues, the feasibility of using outsourcing, the type of vehicle, the number of delivery points, their size and locations.

**JEL Classification:** D21, L23

**Keywords:** system, logistics, logistics system, small business enterprises, commodity flow, optimization.

### INTRODUCTION

In the modern conditions of the socio-economic development of Ukraine and the socio-economic crisis caused by the pandemic due to COVID-19, the competitive struggle for the consumer among small business entities is intensifying. Therefore, the use of effective cost optimization tools in order to reduce the cost of production is a key factor in achieving success in the conditions of price competition. Logistics is such a tool today.

### LITERATURE REVIEW

Such well-known scientists as E. Krykavsky (2009), A. Kalchenko (2003), A. Hadzhinsky (2000), A. Semenenko (2009) and other domestic and foreign scientists devoted their scientific works to the problems of the economic aspects of the management of the logistics system of the enterprise.

## PAPER OBJECTIVE

The goal of the article is to study the theoretical foundations of the formation of ways to optimize the movement of goods in the logistics system of a small business entity in order to minimize economic costs.

## RESULTS AND DISCUSSION

Any system is a set of interconnected elements that in close interaction with each other form a certain integrity and have a single goal. The term "systematic" has several meanings:

1) a concept that reveals the fundamental property of the world and convinces that the surrounding world is not a phenomenon and processes isolated from each other, but a set of interconnected and interacting components;

2) the fundamental principle of scientific knowledge, the essence of which is revealed in the application of a complex approach in the study of complex objects and orients the research to the disclosure of their integrity and interaction between them and their reduction into a single system of knowledge (Semenenko A.Y., 2009).

The main features of any system are:

- the presence of a set of constituent elements;
- the presence of subsystems as a result of the interaction of system elements;
- presence of components as a result of interaction of subsystems;
- existence of connections between subsystems and components;
- the presence of a certain level of integrity, the sign of which is that the system, thanks to the interaction of components, receives an integrated result;
- communication with other systems of the external environment.

Therefore, each separate science, scientific activity, enterprise and its subdivisions must be considered as a certain system that has interconnected elements, subsystems, components, defined functions, goals and internal structure.

The well-known foreign scientist A. Hadzhinsky (2000) considers the concept of "logistics system" from the standpoint of a systemic approach and defines such characteristic features as complexity, integrity, structuredness, integration, uniqueness, subordination, mobility, adaptability, divisibility, organization, stochasticity, inertia, multifunctionality, reliability and efficiency. The scientist believes that the logistics system is an adaptive system with feedback that performs certain logistics functions. As a rule, it consists of several subsystems and has developed connections with the external environment.

According to the opinion of the famous Ukrainian scientist-economist, one of the recognized authorities of the Ukrainian school of logistics, E.V. Krykavskiy (2009), the logistics system is an adaptive system with feedback that performs certain logistics functions and operations, consists, as a rule, of several subsystems and has developed connections with the external environment.

Another foreign scientist L.B. Mirotin (2003) characterizes the logistics system as such, the elements of which are material, financial and information flows, on which logistics operations are performed, connecting these elements in accordance with the general goal and performance criteria (Mirotin, 2003).

Ukrainian scientist-economist, academician M.O. Aucklander believes that the logistics system is an organizational and management mechanism associated with achieving the required level of integration of logistics functions due to organizational transformations in the management structure and the implementation of special management procedures, the basis of which is the planning of production support and physical distribution as a single material flow.

The lack of unity in the definition of the term "logistics system" indicates the dynamic and rapid development of logistics as a science and, at the same time, insufficient definition of the

Shyshkin, V. and Onyshenko, O. (2022), "Economic aspects of the logistics systems management in a small business", *Management and entrepreneurship: trends of development*, 3(21), pp. 53-61. Available at: <https://doi.org/10.26661/2522-1566/2022-3/21-06>

conceptual foundations of logistics, which requires further research to clarify the essence of the concept.

The principles of the logistics approach require the integration of logistics, production, sales, transport and the transfer of information about the movement of goods into a single system, which should increase the efficiency of work at each stage and cross-industry efficiency. The purpose of the logistics system of a small, medium or large enterprise is to optimize the cycle of reproduction by means of a complex, oriented to the needs of the end consumer, the formation of material and information flows in the production and distribution of finished products.

Today, small business is one of the most promising segments of the country's national economy, primarily because of the opportunities to create new jobs and change the culture of doing business in Ukraine, creating a trend on its own initiative.

A small business is an entrepreneurial activity formed at one's own risk, which does not contradict the current legislation and creates a small number of jobs (up to 50 people). The purpose of starting a small business is both to make a profit and to achieve personal success. The following are the key characteristics of a small business:

- 1) relatively small sizes;
- 2) limited number of employees;
- 3) limited circulation of capital;
- 4) local area of operations and specific direction of work.

Small business plays a significant role in ensuring employment, saturation of the market with consumer goods and services, contributes to structural restructuring of the economy, development of market competition, weakening of monopoly, is a means of self-realization and actively forms the middle class. It is an important source of innovation.

The main functions of a small business are as follows:

- 1) formation of a competitive market environment;
- 2) ensuring the flexibility of the market economy;
- 3) promotion of rapid development of scientific and technical progress;
- 4) absorption of surplus labor force;
- 5) mitigation of social tension;
- 6) formation of the middle class;
- 7) promotion of demonopolization.

According to the law of Ukraine, all business entities are classified into micro-enterprises, small, medium and large enterprises (Table 1).

*Table 1*

*Current classification of business entities in Ukraine*

<b>Type of enterprise</b>	<b>Book value of assets, euros</b>	<b>Net income from product sales, euros</b>	<b>The average number of employees, persons</b>
<b>Micro enterprise</b>	up to 350 thousand	up to 700 thousand	up to 10
<b>Small enterprise</b>	up to 4 million	up to 8 million	up to 50
<b>Medium enterprise</b>	up to 20 million	up to 40 million	up to 250
<b>Large enterprise</b>	more than 20 million	more than 40 million	more than 250

*Source: Compiled by authors according to Economic Code of Ukraine (2018).*

Thus, according to the Economic Code of Ukraine, small enterprises are understood (see Table 1) as:

- natural persons registered in accordance with the procedure established by law as natural persons - entrepreneurs, in which the average number of employees for the reporting period does not exceed 50 people and the annual income from any activity does not exceed the amount equivalent to 10 million euros, determined at the average annual exchange rate of the National Bank of Ukraine;

- legal entities – economic entities of any organizational and legal form and form of ownership, in which the average number of employees for the reporting period does not exceed 50 people and the annual income from any activity does not exceed the amount equivalent to 10 million euros, determined by average annual rate of the National Bank of Ukraine.

The number of small business entities in Ukraine in 2022 will reach more than 1 million enterprises, half of which are employed in the field of retail trade. The share of micro-enterprises in the total structure of economic entities is 96.2%, while the share of small entrepreneurship is 2.85%, medium-sized – 0.9%, and large – only 0.02%. The number of small and micro-business entities over the past 5 years has been characterized by stable growth (Figure 1).

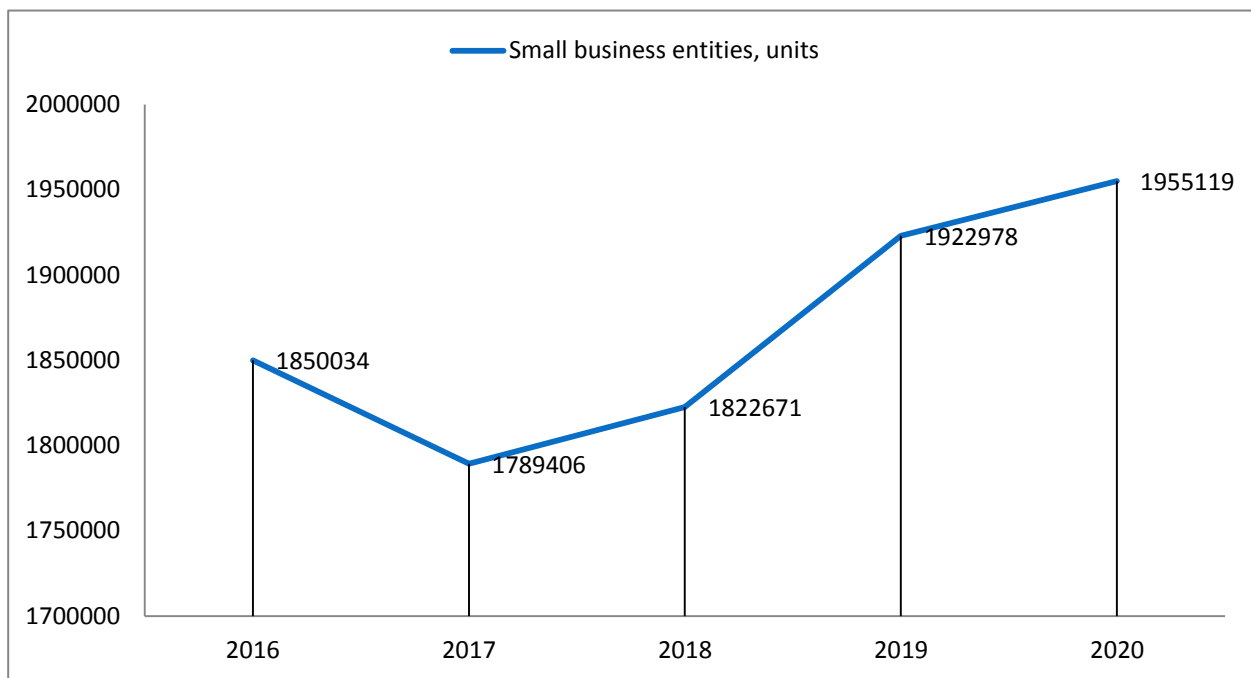


Figure 1. Current classification of business entities in Ukraine

Source: After Statistical collection “Activities of subjects of large, medium, small and micro enterprises for 2020”

As of today, the share of small enterprises in the total number of small business entities is 18.2%, and individual entrepreneurs – 81.8%.

The share of small business entities in Ukraine is growing rapidly – if 8 years ago the contribution of this segment to the country's GDP was only 14%, today it provides every fourth hryvnia (Figure 2).

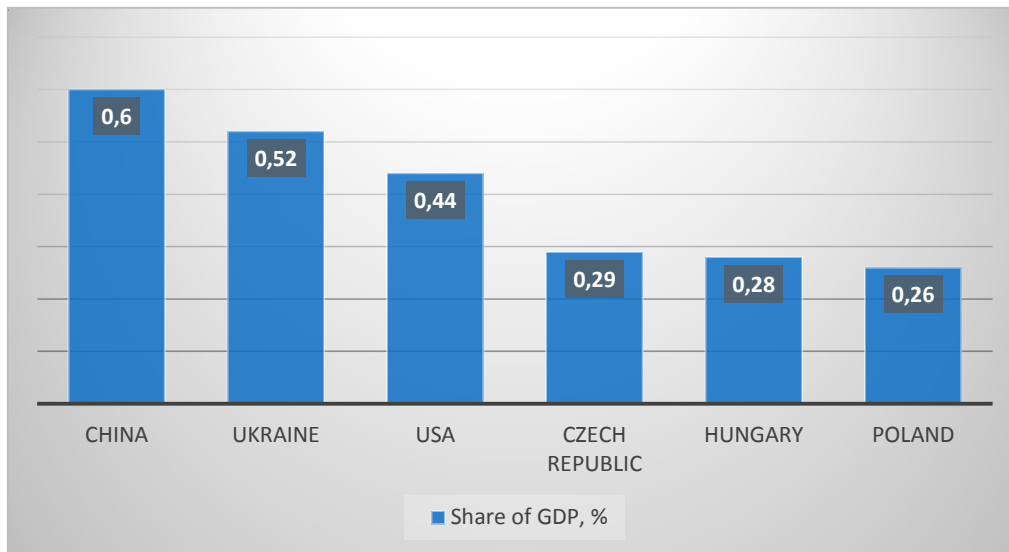


Figure 2. Contribution of small and medium-sized businesses to the economy of Ukraine and other countries of the world

Source: After the World Bank in the European Union, 2020

At the same time, medium-sized enterprises account for more than 27% of the national GDP, and this share has been relatively stable for a long period of time. And big business 8 years ago provided more than 28% of GDP, and today it is only 22.3%. We will provide a comparative analysis of the indicators of the specific weight of medium and small business entities in the general indicators of business entities in Ukraine and individual EU countries (Table 2).

Table 2

The specific weight of medium and small business entities in the overall indicators by economic entities (data for individual countries)

Country	The number of active economic entities	Volume of sold products (goods, services)	Number of employed workers	Added value based on production costs
Ukraine	99,98	85,5	82,2	66,4
Bulgaria	99,8	68,2	74,1	63,8
Germany	99,5	38,4	58,0	46,9
Poland	99,8	54,0	66,2	50,8

Source: After the World Bank in the European Union, 2020

Although medium-sized businesses are the largest employers in the country, the role of small and micro-businesses is more voluminous, because it is measured not only in the value of manufactured products, but also in the development of entrepreneurial flair - one of the main factors of production in the economy. And sometimes it becomes an environment for the development of large multinational companies, plays not so much a productive economic, but a social role, amortizing the country's economic problems.

The purpose of the logistics system of business entities is to ensure the timely delivery of goods to the right place, in the right amount in accordance with consumer requests, as well as the

planned level of service with minimal costs. The key goal of the company's logistics system is achieved through the following measures (Table 3):

Table 3

*Ways to optimize the movement of goods in the logistics system of a small business entity*

<b>Ways to optimize the movement of goods</b>	<b>Economic aspects</b>
<b>Use of cheaper modes of transport</b>	Choosing a vehicle with the lowest cost per ton of cargo allows you to optimize transport costs in the enterprise's logistics system.
<b>Shipment of goods in large batches</b>	The delivery of goods in a large batch at one time is characterized by significant trade discounts, optimization of time and transport costs, ease of processing documents, as well as a guarantee of delivery by the entire batch.
<b>Timely shipment of goods in the required quantity and quality</b>	In the case of non-compliance with the terms of the quantity, quality, assortment, the company may incur financial costs - a fine for violating the terms of delivery of goods.
<b>Fast fulfillment of orders</b>	Quick response and a high level of logistics service is a powerful means of competition for the buyer, and therefore of maximizing the company's profitability.
<b>Minimizing the level of inventory</b>	From the point of view of the company's sales service, large stocks are a means of competitive struggle for the buyer, since it is insurance stocks that allow to increase the level of logistics service. However, from the point of view of the financial department, large volumes of orders and, as a result, significant stocks mean an increase in the costs of their maintenance, service and financing

*Source: Compiled by authors according to Butenko N.V., 2006.*

According to the specified ways of optimizing the movement of goods, appropriate management decisions should be made regarding delivery terms, taking into account costs and revenues, the feasibility of using outsourcing, the type of vehicle, the number of delivery points, their size and locations (Table 3). Effective inventory management, warehousing and fast order fulfillment play a key role in optimizing the logistics of small business entities. While large business entities may have dedicated logistics directors to manage logistics operations, small business owners usually handle it on their own.

The effectiveness of the logistics system of a small business is largely determined by the types of transport used to transport goods. Unification takes place depending on the characteristics of the cargo and volumes of the transported batches, the urgency of delivery and climatic conditions. An important issue is also the definition of general requirements for ensuring delivery reliability, cargo safety and establishing responsibility for their non-compliance. The next issue after the unification of logistics conditions is the choice of transport for transporting goods. Each has its advantages and disadvantages (Table 4).

Table 4

*Advantages and disadvantages of using different types of transport by small business entities in Ukraine*

<b>Type of transport</b>	<b>Advantages</b>	<b>Disadvantages</b>
<b>Automobile</b>	<ul style="list-style-type: none"> <li>- high speed of delivery;</li> <li>- an opportunity to use different routes;</li> <li>- high availability;</li> <li>- the possibility of supplying small batches directly to the final consumer;</li> <li>- great maneuverability and flexibility of delivery;</li> <li>- a wide selection of carriers</li> </ul>	<ul style="list-style-type: none"> <li>- high cost of transportation;</li> <li>- insufficient level of cargo security;</li> <li>- low level of road network development in different areas;</li> <li>- low quality of the road surface;</li> <li>- low technical and technological level of cargo terminals, as well as their insufficient number;</li> <li>- urgency of unloading (high cost of downtime)</li> </ul>
<b>Railways</b>	<ul style="list-style-type: none"> <li>- the possibility of transporting different volumes of cargo under any weather conditions to any distance;</li> <li>- regularity of transportation;</li> <li>- fast delivery over long distances,</li> <li>- high loading efficiency unloading works</li> </ul>	<ul style="list-style-type: none"> <li>- low maneuverability;</li> <li>- worn-out rolling stock and unsatisfactory condition of locomotives;</li> <li>- geographic limitation of routes and difficulty of delivery to points of consumption;</li> <li>- the need for road transport to deliver goods to the final consumer</li> </ul>
<b>Water (river) transport</b>	<ul style="list-style-type: none"> <li>- high throughput on deep-water rivers and reservoirs;</li> <li>- low cost of transportation;</li> <li>- low capital intensity;</li> <li>- environmental friendliness</li> </ul>	<ul style="list-style-type: none"> <li>- limited transportation;</li> <li>- significant delivery times;</li> <li>- dependence on the topography of the river bed;</li> <li>- seasonality of functioning;</li> <li>- low geographical availability</li> </ul>
<b>Water (sea) transport</b>	<ul style="list-style-type: none"> <li>- low freight rates and high throughput</li> </ul>	<ul style="list-style-type: none"> <li>- significant delivery times;</li> <li>- strict requirements for packaging and fastening of goods;</li> <li>- low frequency of shipments.</li> <li>- high dependence on weather and navigation conditions;</li> <li>- the need to create a complex port infrastructure;</li> <li>- the need to combine with other modes of transport</li> </ul>
<b>Air transport</b>	<ul style="list-style-type: none"> <li>- speed of delivery;</li> <li>- wide geographical coverage</li> </ul>	<ul style="list-style-type: none"> <li>- high freight rates;</li> <li>- high level of dependence on meteorological conditions;</li> <li>- the possibility of transporting only small volumes of cargo</li> </ul>
<b>Pipeline transport</b>	<ul style="list-style-type: none"> <li>- high speed of delivery;</li> <li>- the most economically beneficial way of transporting oil, gas, liquids and suspensions</li> </ul>	<ul style="list-style-type: none"> <li>- narrow specialization;</li> <li>- frequent emergency situations;</li> <li>- losses due to theft and impossibility of protection;</li> <li>- large capital expenditures for diagnosis of defects, modernization of equipment, reconstruction and construction of new pipelines</li> </ul>

Source: Own compilation

The key task of logistics for a small business is to choose the optimal route for moving goods from the original source to the final recipient with minimal time and financial costs.

The difference in the cost of the goods, which arises due to transport costs, can reach 20% of the total amount. Taking into account the fact that such logistics costs are often much higher for small businesses, it is necessary to resort to specific methods of building transport chains, which are followed by the consolidation of several market participants. Each individual market participant in the small business segment requires relatively small volumes of transportation, which in turn increases transportation costs. In this regard, the joint development of logistics schemes, which will be common to all participants in the logistics chain, is becoming popular.

## CONCLUSION

Therefore, after analyzing the main economic aspects of the optimization of the logistics system of small business entities, appropriate management decisions should be made regarding delivery terms, taking into account costs and revenues, the feasibility of using outsourcing, the type of vehicle, the number of delivery points, their size and locations. In order to minimize economic costs in the logistics system, small businesses need to carry out a set of the following measures:

- organization of general transport chains and systems;
- joint planning and combination with production aspects of a single transport and warehouse process;
- development of rational traffic routes;
- selection of vehicles that are best suited for solving the tasks.

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## **ЕКОНОМІЧНІ АСПЕКТИ МЕНЕДЖМЕНТУ ЛОГІСТИЧНИХ СИСТЕМ В МАЛОМУ ПІДПРИЄМНИЦТВІ**

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У статті проаналізовано теоретичні засади побудови логістичної системи підприємства, наведено класифікацію основних суб'єктів підприємницької діяльності в Україні, простежено ключові тенденції розвитку та окреслено роль малого бізнесу в національній економічній системі, проведено порівняльний аналіз питомої ваги суб'єктів середнього та малого підприємництва, а також визначено ключові економічні аспекти управління їх логістичною системою.

**Ключові слова:** система, логістика, логістична система, суб'єкти малого підприємництва, товарорух, оптимізація процесів.