

## FACTORS OF LOGISTICS DEVELOPMENT AT THE PRESENT STAGE OF MARKET TRANSFORMATIONS

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The article substantiates the necessity of studying and systematizing the factors which influence development of logistics in Ukraine. The results of research into external factors having impact on the development of logistics allowing for globalization, internationalization and integration in all spheres of social life are exposed. A generalized ordering of the most significant factors influencing the logistics development is performed. The main reasons which caused appearance of factors influencing the development of logistics at the present stage of economic transformations are established.

**Key words:** logistics, factors, market transformations, globalization, internationalization.

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## ЧИННИКИ РОЗВИТКУ ЛОГІСТИКИ НА СУЧАСНОМУ ЕТАПІ РИНКОВИХ ПЕРЕТВОРЕНЬ

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Обґрунтовано необхідність вивчення й систематизації чинників, що впливають на розвиток логістики в Україні. Викладено результати дослідження зовнішніх чинників впливу на розвиток логістики з урахуванням процесів глобалізації, інтернаціоналізації й інтеграції в різних сферах суспільного життя. Виконано узагальнену систематизацію найзначущіших факторів впливу на розвиток логістики. Визначено основні причини, що зумовили появу чинників впливу на розвиток логістики на сучасному етапі економічних перетворень.

**Ключові слова:** логістика, чинники, ринкові перетворення, глобалізація, інтернаціоналізація.

### Statement of the problem

A determinant trend in the evolution of the world economy is globalization, international exchange and integration in different spheres of social life, resulting in the further internationalization of business processes, intensification of international labor division, extension of forms of international economic relations, enhanced interdependence between national economies, generating a single economic organism of global type. This process brings dramatic changes of the world market which necessitate wide application of logistics as an effective tool for ensuring successful entrepreneurial activity economic agents (EA) and its further development, creation of effective logistics systems (LS), search for new forms of logistics application in foreign affiliated entities of the world economy etc.

Scientists and experts have concluded that successful implementation of logistics in the economic activities of EA must necessarily be preceded by a detailed study on the content of factors that affect the extent of its use and further development directly. Provided knowledge of these factors, their content and orientation, reasons for their occurrence only it is possible to build an effective LS and to choose one or the other logistics technology in order to achieve a goal set by the economic agent entity or to resolve a complex of problems. By virtue of thorough study of the factors influencing the development of logistics experts will be able to generate LS correctly, to project logistics processes and subsequently to develop efficient measures for optimization of

logistics costs on logistics activities. Thus, according to the author's point of view systematization of external factors influencing development of the Ukrainian logistics, their detailed description and determination of reasons for their appearance is nowadays a very important task for researchers.

### **Analysis of recent research and publications**

Both foreign and national scientists focus on the issue of studying and analyzing the factors of logistics development. In particular, research in this field was carried out by T.V. Alesinska [1, p. 15–17], B.A. Anikin and his followers [11, p. 23–28], I.I. Bazhin [2, p. 15–19], A.S. Danylenko, O.M. Varchenko, O.V. Shubravska [5, p. 18–20], A.M. Hadzhynskiy [3, p. 29–32], N.M. Zubar and M.Y. Grygorak [9, p. 39–40], L.B. Mirotin and V.I. Sergeev [12, p. 5–6] S.V. Smyrychivska and her colleagues [15, p. 211], O.P. Khromov [18, p. 14–17]. Subject to analysis of publications by these scientists it can be concluded that most of them prefer the following factors influencing development of logistics: 1) development of competition caused by the transition from a “seller's market” to “consumer's market”, 2) complicity of market relations system and increasing demands to quality of product distribution, 3) energy crisis of the 1970s, 4) scientific and technological progress in creating computer-aided production, 5) scientific and technical progress in the field of communication and informatics, 6) development of systems theory and the theory of compromise, 7) harmonization of rules and regulations of foreign economic policy, standardization of technical equipment criteria in different countries, 8) significant amount of time for taking goods from raw material source to the final consumer, 9) increasing share of logistics costs in the cost structure of industries.

When analyzing the factors the authors give a list of the latter, without opting for grouping them into internal factors and the ones of external origin. As for the factors of internal origin, researchers give explanations of their origin and sometimes describe the mechanism of their formation. But what concerns the external factors most scholars restrict themselves to two, three, or four points, without revealing their content and not giving necessary explanations for causes of their occurrence. However, they do not point to the priority of the studying and analysing the factors influencing logistics with the aim of establishing LS or developing logistics process.

### **The formulation of objectives**

To the author's point of view, owing to intense process of globalization, international exchange and integration in different areas of social life with the purpose of a more efficient and full-scale application of logistics in the activity of economic agents there arises a necessity:

- 1) to review and clarify the list of important external factors that influence logistics development of logistics under conditions prevailing in the market;
- 2) to study the content of external factors, as in the modern context any economic system cannot function without taking into account influence external environment.

### **Presentation of main materials**

Investigation of a large number of logistics-orientated publications and analysis of processes of globalization, international exchange and integration in different spheres of social life, which appears in the further internationalization of business processes, intensification of international labor division, extension of forms of international economic relations, enhanced interdependence between national economies, generating a single economic organism of global type determines the following purposes:

- to identify the most important factors of external origin that have a direct impact on the Ukrainian development of logistics;
- to complete systematics of factors influencing the development of logistics in Ukraine, and to describe the reasons that have provoked appearance of the latter.

The Main Material. Study and analysis of logistics-orientated publications allows classifying external factors influencing the development of logistics on basis of several grounds. Namely, according to their scale these factors should be classified into global and subglobal ones, as for place of origin – into internal and external, as for the content – into economic, technical and technological, political, social, environmental, demographic and national. The necessity for such classification results from urgent need of systematic approach to projecting logistics systems on micro-, meso- and macro-levels that will meet requirements of today's market.

Analysis of a wide range of scientific logistics-orientated literature, learning about recommendations and programmes of international conferences and symposia on the problems of logistics helps to organize external factors influencing development of logistics and to make complete the list of them as well as to describe the causes which have provoked appearance of the latter. Among the external factors there are the following:

1. International Business Development. At present processes of globalization in all area of political, socio-economic development and technological progress very are typical for international business.

Globalization processes have greatly strengthened international bonds and dependence, both between countries and separate societies in economic, informational, political, environmental, immigration and other areas [10, p. 13]. Globalization of the world economy is a process of interdependence between all economies around the world, which is intensified due to growth of goods and services cross-border movement, export of capital, intensive information and technology exchange, labor migration. Globalization is a logical expression of the growing internationalization of economic life in all spheres of social life. Author's of the work [10, p. 17–18] point out that “globalization of production and investment cooperation, as a result of industry and capital internationalization, modifies commodity production: it is based on international technology circuits; the exchange is carried out on new (not international, but interenclave) joints of labor division in the newest products forms (product group, product item, product program). The material basis of globalization process are: technical revolution, entirely new types of communications, transport and new technologies which have made every point of the globe achievable,...., unprecedented opportunities for rapid dissemination of ideas, products, financial resources are created, transportation of cargo and passengers have been accelerated greatly and became cheaper, “economic distance” between countries...” got diminished. In view of the aforesaid it should be noted that under these conditions there appear brand new logistics possibilities. Therefore, understanding of the importance of globalization, international exchange and internationalization necessitates not only a deeper study of logistics possibilities, but also well-directed effort of modern society to make further progress in the development of international logistics tools. It can be argued that development of international business is an important factor in the development of logistics that determines its success, as well as further prospects for social development and progress.

2. Foregrounding the Problem of Increasing Efficiency of International Business. In general, when considering current issues and problems of international business improvement it is essential to focus on economic indicators. As is well-known, there are two such main features: 1) increase of value added which is generated in international business, 2) increasing effect that accrues to an international business expenditure unit. Being guided by these characteristics it is possible to identify the most important opportunities of increasing efficiency of international business. The authors of the monograph [8, p. 45] single out three ways of increasing the efficiency of international business. These are options based on: 1) improvement products' quality and creation of new quality, 2) activity costs reduction, 3) extension of internationalization process and introduction of new internationalization forms.

This second group of possibilities is formed by implementing logistics approach in international trade organisation and, as a result, of international business. As shown by global practice, using logistics will reduce activity costs by a significant percentage which in economic terms will increase the effect that falls on a costs unit of international business.

The above mentioned and other pressing issues and problems defining prospects of international business improve allow not only realizing significance and importance of logistics and its development, but also determining the actual (key) scientific research priorities of its practical application in international business.

3. International Industry Expansion. This factor induces virtually all the large companies to participate in business outside their countries, and especially in fast-growing industry sectors in the European Union (EU), which are now represented through production of electrical and electronic products, chemical, automobile and paper industries. Structural shifts in the EU from heavy industry to more important for end-users industries partly have had impact on the increasing demand for multimodal and air transportation, while the demand for rail and annual transportation has not changed.

In connection with the expansion of markets in Russia and Ukraine by European industrial companies, there arose a global problem – need for continuous and constant search within land and water of the planet for best shipping, storage, distribution and marketing options for products. And they are helped by logistics in solving this problem.

4. Growth of International Trade. Analysing international business and its development, in terms of identifying reasons for the necessity of logistics development a special attention should be paid to international trade. International trade today is defined as business in which a product created in one country can be sold to a buyer in another one [8, p. 30]. Current economic trends of the world market point to rapid development of international trade. This fact was recorded in 1992 by the Action Programme “AGENDA 21”, which was approved by the United Nations Convention on Environment and Development in Rio de Janeiro (Summit “Planet Earth”, 1992) [13]. In this document it is stated that “in recent years, world trade has continued to grow more rapidly than world production. Open, equitable, secure, non-discriminatory multilateral trading system, which agrees to the objectives of constant development, leads to effective distribution of global production and, consequently, to competitiveness, and is beneficial to all trading partners”. The above benefit is nowadays largely enhanced by logistics that integrates the activities of international firms and companies for achieving the highest results.

In recent years, Ukraine has paid much attention to international trade. For example, in 2012, exports of goods amounted \$ 68,809,800,000; imports -\$ 84,658,100,000. Compared to 2011, exports increased by 0.6 %, imports – by 2.5 %. Negative balance made \$ 15,848,300,000 (also negative for 2011 – \$ 14,214,000,000). Imports from CIS countries amounted 40.7 % of the overall volume, from Europe – 32.5 %, including EU countries – 30.9 %, from Asia – 20.2 %, from America – 5.3 %, from Africa – 1 %, from Australia and Oceania – 0.2 % [17]. In January – May 2013, Ukrainian amount of goods exports and imports have made respectively \$ 27,193,400,000 and \$ 29,626,200,000. Compared to the same period in 2012 exports was 96.5 %, imports – 87.3 %. The negative balance of foreign trade was \$ 2,432,800,000 (also negative for January – May 2012 – \$ 5,732,400,000) [7].

A very significant factor in the development of international trade was creation of an integrated European Common Market, which includes more than 320 million consumers. Common European Act, which was passed in 1987, has removed trade barriers between EU member-states and simplified free movement of goods, services, capital and people.

The growing role of the European countries in foreign trade necessitates synthesis and development of the European logistics methods and technologies of generating higher level logistics systems. The nature and structure of foreign trade and leading countries determine the growth of freight, including the ones through the territory of Ukraine.

5. Intensification of The Struggle for Logistics Flows in the Global Market. Geopolitical distribution of trade flows says for the EU freights which are increasingly channeled outside the European countries towards rapidly developing countries. Active development of the economies of China, India, South Korea, the Russian Federation provides new opportunities for EU countries to enhance trade with these countries. According to EUROSTAT, in 2010, combined share of China, Russia, South Korea, Japan, India in the exports structure from the EU countries made 22.7 %, in the structure of goods imports to the EU, these countries accounted for 38, 4 % [14].

The above mentioned shows that under the conditions prevailing in the world market which concern the distribution of material flows it will still be right to turn to such a powerful tool as centralized distribution of material flows. As for this, professor V.K. Hubenko indicates that “the increasing trend of geospatial centralization in distribution of flows requires a good theoretical basis. This need is greatly enhanced by the fact that the theory of flows centralization is a part of the general logistics theory...” [4, p. 3].

6. International Labor Division and Cooperation. “Nowadays the world economy is characterized by increasing internationalization of economy on the ground of the deepening international labour division...” [6, p. 476] and development of cooperation in a fairly large scale. The global market space today is a scene for intensive process of formation of new and transformation of the already existing multinational companies which are forced to use global logistics channels, chains and networks in business, due to the possibilities of improving return on invested capital, using logistic agents in other countries (with lower tariffs) and favorable financial conditions.

7. Need to Ensure Competitive Advantages at the Global Market of Product Distribution. At the end of the XX century, after the collapse of the world socialist economic system, the market type once again became a universal form of international relations’ organisation, and the selective nature of the main regulators of market economy – the law of value and the law of competition, on the one hand, have

increased the economic power of developed countries dramatically, on the other – have weakened the competitive position of developing countries. Thus, the issue of states' and organisations' survival in today's market is first of all a question of competitiveness. The Programme "AGENDA 21" states that "...even more attention is paid to increase the role of business and especially competitiveness of markets through introduction of policies that has provision for competition" [13]. This can be achieved primarily thanks to rapid adaptation of goods producers to market environment conditions and demand for products. Success in achieving a strong competitive position in the market is possible on condition of logistics use. In other words, the organization of logistics activity in enterprises and firms, according to experts in the field of logistics, provides opportunities for strengthening competitive position of the latter on selected market segments through a flexible and timely customer service, significant reduction of costs on delivering products to customers and others.

8. Change in Market Philosophy. Today the global economy has practically overcome the phase of market transformation, namely the transition from "seller's market" to "buyer's market". In Ukraine, this process has just begun. This leads to complications in market economy and increasing demands for quality characteristics of distribution process as well as growing "consumer dictate" with regard to manufacturers and their business partners. This phenomenon is quite painfully accepted by the national producers market. There is a need to adapt to the new business model. And under these conditions the model should be efficient and, moreover, fruitful. To the author's point of view, introduction of logistics as a part of this model will enhance business agents' adaptability to the requirements of customers.

9. Growing Economic Strength of Regions. This process represents bigger opportunities for commodity flow movement due to increased consumption of products. Thus, under these conditions, there appears a need to establish proper logistics systems and structures that will be able to transport large volumes of production quickly and timely. In the strongest areas, formation of Europlatforms, logistics centers and terminals, multimodal and regional transport and logistics centers and systems is becoming of paramount importance; and also their integration with international logistics systems for freight and goods transportation. The experience in the use of such logistics systems and structures in developed countries shows that transport costs are thus reduced by 7–20 %, costs on loading and unloading and storage of material resources and finished products are reduced by 15–30 %, total logistics costs are reduced by 12–35 %, circulation of material resources is accelerated by 20–40 % and stock holding together with finished product stock are reduced by 50–100 % [4, p. 15].

10. Growing Shortage of Resources. The result of this factor's action is sharp deterioration of such problems as population and environment which objectively encourages countries with meagre resources to actively develop and deepen cooperation with resource-saving and resource-possessing states. This somehow leads to appearance of new traffic in different temporal and spatial parameters, formation of international logistics infrastructure.

Lack of resources is a global problem number one. The results of its discussion are reflected in the Programme of Actions "AGENDA 21": "... use of energy, water and other resources by mankind in the gross amount and per capita is increased and their deficiency may occur in many parts of the world..." [13]. The same document stresses that the international community should strive to ensure better management of natural resources, which will take into account needs for development and implementation of more effective: a) manufacturing processes, leading to absence of any waste or to reducing their volume to minimum, b) transport and storage technologies that will improve both period of products storage and the quality and storability within the process of its delivery to end-user.

The countries mentioned in the document are recommended (if necessary assisted by international organizations) to "... develop, apply and implement economic approaches and... new and improved structures that encourage more efficient use of resources".

Apparently, logistics appears, at least in an implicit form, in almost every specified paragraph of the document. Today it is an undeniable fact that in the field of saving resources logistics has enough opportunities which are to be actualized by the so called "new and improved structures" – services and assets logistics in firms and enterprises, logistics companies and others.

11. Development and Opportunities of Global Use of Information and Communication Technologies (ICT). This factor is one of key features of modern economic relations development of ES which conduct their business activities in the territories belonging to different countries. The use of ICT in business has led to a reduction in prices for transmission of information, databases in huge quantities around the world. The introduction of technologies for digital data processing and convergence (integration) of communication and computational techniques allow to transport large flows of information in the shortest possible time at a low cost. This allows to quickly search for customers, suppliers, dealers, partners; to bring information about existing products to different markets in a relatively short period of time; to conclude contracts; to follow the movement of trade flows and so on. Experts note that the along with wide introduction of ICT trade sector is undergoing revolutionary change: e-commerce is developing, which allows manufacturers to find trading partners in wholesale and retail trade and so on. "Modern ICT give the possibility to operate in all world markets simultaneously in real time 24 hours a day, which increases the speed of capital movement several times. Due to development of ICT there appeared new financial services and products" [10, p. 19]. All this leads to an intensification of material and attendant flows – information and financial (sometimes service), which affects the increase in transportation and warehousing, customs and other logistics processes and operations. So, the development of ICT makes drastic changes in orientation and content of development of logistics and forms of its application.

12. Development of Infrastructure as a System Derivation in the Global Economy. According to the fundamental work of national researchers [6, p. 173] "infrastructure is the basis, foundation, substructure of the economic system and its subsystems, its internal structure, which ensures integrity. Due to infrastructure movement of goods and services flows from sellers to buyers." This is modern logistics infrastructure that significantly reduces time of client's order execution with preserving a given quality rate of commodity production with minimal costs, and provides great opportunities for creation of additional utilities and values for customers that are geographically located in different points of the globe. This is possible only if there is a sufficient number of warehousing facilities and a strong transport component of the global infrastructure.

13. Growth of Production Output and Related Cost Increases in Circulation Areas. Receipt of products and services is associated with huge costs for operations on goods transportation within the global market. These operations are becoming more expensive and complicated than in national markets: they make up 25–35 % of sales charge of export and import products, compared to 8–10 % of goods cost oriented on consumption in the domestic market. External transport accounts for 5 % of the total waste of time. In these countries, the share of gross domestic product generated due to industries engaged in the goods transportation, is about 20 %. In the cost structure of these industries about 44 % accrues to the costs spent on storage of raw materials, semi-finished and finished products, 16 % – to warehousing and freight forwarding, 23 and 9 % respectively – to main and technological cargo transportation. Eight remaining percent stand for expenditures for ensuring sales of finished products [16, p. 84].

The author believes that the noted factors are the most significant in their effect on the development of logistics in Ukraine, and therefore should be considered, especially when planning, organizing and carrying out logistics activities by world's economic agents. In addition, the analysis of reasons for the above factors allow professionals to adjust properly not only logistics strategy of enterprises, firms and companies, but also the overall strategy of their further development and functioning in selected segments of the world market.

### **Conclusions**

1. In the current conditions of market relations in Ukraine further development of logistics is one of the important conditions for strengthening the economy. Logistics as one of the effective tools of modern business, will promote creation of competitive potential in the global market.

2. The analysis of current trends in the evolution of the world economy, results of investigations conducted by foreign and national scientists has revealed key factors in the development and further improvement of logistics in Ukraine and allowed to fulfill their systematization.

3. Study and analysis of external factors in the development of logistics proves a real possibility and, at the same time, the urgent need for increased attention to it, not only on the side of scientists but also of the state as long as running Ukrainian business in the global market today is impossible without the use of powerful tools of logistics and its potential in the international exchange of goods.

#### Prospects for further research

The obtained study results on the taxonomy of external factors having a rather strong impact on the development of logistics, will be useful for further development of the theory of logistics, development of modern logistics technologies for economic agents that operate not only in the domestic market of Ukraine, but also beyond it, designing more flexible and adapted to market changes logistics systems on micro-, meso- and macrolevels.

1. Алесинская Т.В. Основы логистики. Общие вопросы логистического управления / Т.В. Алесинская. – Таганрог: Изд-во ТРТУ, 2005. – 121 с. 2. Бажин И.И. Логистика: [компакт-учебник] / И.И. Бажин. – Харьков: Консум, 2003. – 240 с. 3. Гаджинский А.М. Логистика: [учебник для высш. и средних спец. учебных зав.] / А.М. Гаджинский. – 7-е изд., перераб. и доп. – М.: ИТК “Дашиков и К<sup>0</sup>”, 2003. – 408 с. 4. Губенко В.К. Логистическая централизация материальных потоков: теория и методология логистических распределительных центров: [монография] / В.К. Губенко. – Донецк: НАН Украины, Институт экономики промышленности, 2007. – 495 с. 5. Даниленко А.С. Логістика: теорія і практика: [навч. посіб.] / [А.С. Даниленко, О.М. Марченко, О.В. Шубравська й ін.]. – К.: Хай-Тек Прес, 2010. – 408 с. 6. Економічна теорія: Політекономія: [підручник]; за ред. В.Д. Базилевича. – 2-ге вид., випр. – К.: Знання-Прес, 2003. – 581 с. 7. Економіка України за січень-червень 2013 року. [Електронний ресурс]. – Режим доступу: <http://ukrurier.gov.ua/uk/articles/ekonomika-ukrayini-za-sichencherven-2013-roku/>. 8. Економіка знань: Інтернаціоналізація і систематика інновацій: [монография] / [Б. Мельникас, А. Якубавичус, М. Виллис и др.]. – Вильнюс: Литовский инновационный центр, 2013. – 703 с. 9. Зубар Н.М. Логістика у ресторанному господарстві: [навч. посіб.] / Н.М. Зубар, М.Ю. Григорак. – К.: Центр учбової літератури, 2010. – 312 с. 10. Крамаренко В.И. Управление внешнеэкономическими рисками в условиях глобализации: [монография] / [В.И. Крамаренко, К.Н. Онищенко, Н.И. Твердохлебов]; под общ. ред. д.э.н., проф. В.И. Крамаренко. – Симферополь: ДИАЙПИ, 2010. – 354 с. 11. Логістика: [учебник] / [Б.А. Аникин, В.В. Дыбская, А.А. Колобов и др.]; под ред. Б.А. Аникина. – 3-е изд., перераб. и доп. – М.: ИНФРА-М, 2003. – 368 с. – (Серия “Высшее образование”). 12. Основы логистики: [учебн. пособ.] / [Л.Б. Миротин, В.И. Сергеев, М.П. Гордон и др.]; под ред. Л.Б. Миротина и В.И. Сергеева. – М.: ИНФРА-М, 1999. – 200 с. 13. Програма дій “Порядок денний на ХХІ століття” (“AGENDA 21”): ухвалена конф. ООН з навколиш. середовища і розвитку в Ріо-де-Жанейро (Самміт “Планета Земля” 1992 р.): [пер. з англ.]. – [2-ге вид.]. – К.: Інтелсфера, 2000. – 359 с. – (Нам жити на цій Землі). – (ПРООН Програма розвитку Організації Об’єднаних Націй). 14. Собкевич О. Щодо перспективних напрямів співробітництва України з країнами ЄС у реалізації потенціалу транспортної системи України. Аналітична записка / О. Собкевич, О. Смельянова. – Нац. ін-т стратегічних досліджень при Президентові України // [Електронний ресурс]. – Режим доступу: <http://www.niss.gov.ua/articles/579/>. 15. Смерічевська С.В. Маркетинг і логістика: концептуальні основи та стратегічні рішення: [навч. посіб. у схемах і таблицях] / [С.В. Смерічевська, М.В. Жаболенко, С.В. Чернишова та ін.]; за ред. С.В. Смерічевської. – Львів: Магнолія 2006, 2013. – 552 с. 16. Сумец А.М. Логистика: теория, ситуации, практические задания: [учебн. пособ.] / А.М. Сумец. – К.: Хай-Тек-Пресс, 2008. – 320 с. 17. Товарна структура зовнішньої торгівлі України за 2012 р. [Електронний ресурс]. – Режим доступу: [http://ukrexport.gov.ua/ukr/vnishno\\_t\\_balans//7034.html](http://ukrexport.gov.ua/ukr/vnishno_t_balans//7034.html). 18. Хромов О.П. Логістика: [навч. посіб.] / О.П. Хромов. – Харків: БУРУН КНИГА, 2012. – 224 с.