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## **INNOVATIVE DEVELOPMENT IN LOGISTICS AND ITS CONNECTION WITH LOGISTICAL MANAGEMENT AND MANAGEMENT OF LOGISTICS**

*In the article author's classification and grounding of main kinds (directions) of innovative development in logistics have been revealed. Basic differences between processes of logistical management and management of logistics have been defined and their connection with main kinds (directions) of innovative development in logistics has been determined.*

Keywords: innovative development, logistics, kinds, logistical management, management of logistics, connection.

**Setting the task in general form.** Innovative development in entrepreneurial environment is crucial for economic development and supporting competitive positions. Meanwhile it acts as an important object of management and interacts with different functional kinds of activity and management.

Innovative development of logistics provides effective support of innovative process of qualitative transformation in object of labor. Meanwhile it is also connected with management aspects of logistics activity in entrepreneurial organizations. Logistical component in management was and is important object which draws attention. Based on such management enterprises are able to consider current and prospective factors in realization of innovative activity in logistics, to make decisions concerning optimization of logistical processes, to adequately resolve organizational contradictions and so on. In the meantime effectiveness of innovative decisions in logistics is considered along with effectiveness of business activity in general.

Therewith identification of directions in innovative logistics development and the need for precise formulating category apparatus which is connected with management of economic systems based on logistics are quite crucial.

**Analysis of recent research and publications.** Problems of innovative development are the object of great attention for scientists from Commonwealth of Independent States while researchers from other countries nowadays pay more attention to discussion of innovations for development. Besides innovative development was studied by such scientists as S. Illiaschenko [1], O. Bilovodska [1], V. Soloviov [2] and other scientists.

Innovative development in the system of logistics has an insufficient number of studies among Ukrainian and foreign scientists. Meanwhile there are many publications from general development of logistical systems. Besides there are works connected with the problem of logistical innovations and features of meso- and micrologistical systems. They were revealed in publications by V. Alkema [3], I. Karp [4], N. Chuhray [5] and others.

In most studies the process of development in logistics (logistical system) is differentiated and has several components. Thus, according to I. Karp development of logistical systems at micro-level includes such kinds of development as economical, informational, organizational-economical and technical [4]. V. Alkema believes that it is reasonable to distinguish three main components in development of logistical systems. They are organizational-economical, informational-communicative and technical developments of logistics. Besides the scientist claims: "organizational-economical development implies implementation of new or improving

existing principles, methods, methodology and algorithms of managing logistical flows with the purpose of optimization in expenses and provision of planned indexes of efficiency, rationality, effectiveness in realization of functions of the micro-logistics system" [3]. Issues of management in logistics are represented in publications by J. Johnson [6], Ye. Krykavskii [7], M. Oklander [8], V. Sergeiev [9], V. Stahanov [10], J. Stock [11] and others.

Meanwhile most scientists believe that the main potential of contemporary entrepreneurial logistics is in rationalization of managing material flows. However, in economical literature it is possible to come across wider definitions of term "logistics", in which the object of management (research) is beyond the material flow. Difference in definitions of essence of logistics as a scientific discipline is preferably formed by the place in the system of scientific disciplines and number of studies.

According to Ye. Krykavskii the growth of meaning of logistics while forming management activity of enterprise provided grounds to create the term "logistical management". Theoretical development of logistics formed wide meaning of this word. In notion "logistical management" word logistical as an adjective means management but the management which mandatory functions based on logistics [7]. Meanwhile Russian scientist V. Sergeiev believes that logistical management in the company is synergy of main management functions (planning, organization, regulation, coordination, control, accounting and analysis) with elementary and complex logistics activities [9]. But with that Ya. Drobotia, M. Oklander, J. Stock and other scientists and practitioners use such a term as "management of logistics". Along with that the essence of this category is either unrevealed or identified with logistical management [8; 11; 12].

**Previously unresolved issue which is a part of a general problem.** The existing definitions of components of innovative logistics development are incomplete since they consider only changes in material objects and are not connected with rationalistic and providing manifestations of logistics.

Besides in domestic and foreign literature logistics very often intersects with a term "logistical management" and "management of logistics" and in separate cases in fact logistics is identified with it. The problem of distinct separation of notions "logistics", "logistical management" and "management of logistics" still remains insufficiently studied in scientific research. Besides, the attention is not paid to dual nature of logistics and its innovative development in environment of management in entrepreneurial activity.

**The main purpose of the article** is to improve classification and definitions of kinds (directions) of innovative development of logistics and differentiation between notions "logistical management" and "management of logistics" focusing on dualistic character of logistics in business as well as the correlation between them.

**Main material.** Scientific research was carried out at two levels. At the first level the process of analysis and cognition of essence and components of innovative logistical development took place. In general interpretation development is irreversible, directed, logical change of material (Latin *Materia* – wood as the building material) and ideal (Greek *ἰδέα* – image, idea) objects [13]. Innovation is implementation of any new or significantly improved product (good or service) or process, new method of marketing or new organizational method in business practice, organization of workplaces or external connections [2].

The process of development in economy takes place owing to innovations [14]. Due to that term "innovative development" has become widespread among professionals.

According to S. Ilyashenko and O. Bilovodska innovative development is a process of management based on constant search for and use of new ways and spheres of realizing the

potential of the company in changing conditions of environment within the chosen mission and acceptable motivation and connected with modification of existing and formation of new marketing outlets [1]. The process of innovative development takes place in the sphere of logistical activity of entrepreneurial organizations. In this way, the development of micro-logistical system is a long-term realization of combinational processes of qualitative and quantitative changes in company's activity which leads to improvement of such a system by means of increasing its potential, adaptation to environment and internal integration [3]. Innovative development in the system of logistical provision of business implies reasonable change of material and ideal objects and it is a manageable process. Besides development of logistics is an important object in management at macro-, meso-, and micro-levels.

Meanwhile the process of development of logistical system is one of the components in development of the economic system. Thereby organizational-economical development of logistics (logistical system) requires profound classification.

Definitions of main kinds (directions) in development of logistics are reasonable to be made considering author's interpretation of essence of its rationalistic and providing types. The main reason for contemporary widening field of application for logistics beyond management of material and other flows is that entrepreneurial logistics today simultaneously develops in two directions: rationalization and provision. Meanwhile in certain cases their approaches of manifestations are used or take place in the integrated way.

Rationalistic logistics is focused on studying scientific principles, formal models and methods of logistical optimization of business activity in business and support of decisions in the system of management. It is a certain development of logic as a science about features and methods of thinking and a part of military logistics (rational organization of transportation and provision of troops) and in such a meaning it is spread in scientific environment. Providing logistics is connected with formation and functioning of different logistics institutions (providers, objects, networks, chains, canals and so on) and logistical operations (processes), which create necessary conditions for carrying out main type of business activity. It is a certain development of military logistics (rear provision of front) and in this sense it is more spread in entrepreneurial environment.

To some extent rationalistic and providing character of logistics is revealed in many interpretations of this word. In addition in "Standards of Logistics and Management of Supply Chains" by the European Logistics Association, logistics is interpreted as planning, execution and control of movement and placement of people and (or) goods as wells as providing actions connected with this movement and placement within the economic system created for achieving own specific purposes [15].

In this definition the object of research is not limited exclusively by the material flow for the meaning is not only about movement but also placement of people and (or) goods. The function of planning implies rationalistic and supporting actions imply provisional nature of such a phenomenon as logistics. Besides the change of material objects more often is the consequence of managing development of providing logistics and ideal objects – rationalistic logistics. According to the author entrepreneurial logistics has five main directions (kinds) of innovative development. They are institutional-objective, informational-communicative, organizational-technological and technical development. Besides methodological development is the clearly defined manifestation of rationalistic, and institutional-objective – providing logistics. Informational-communicative, organizational-technological and technical innovative development to a relatively equal extent are connected with both rationalistic and providing directions of business logistics (fig. 1).

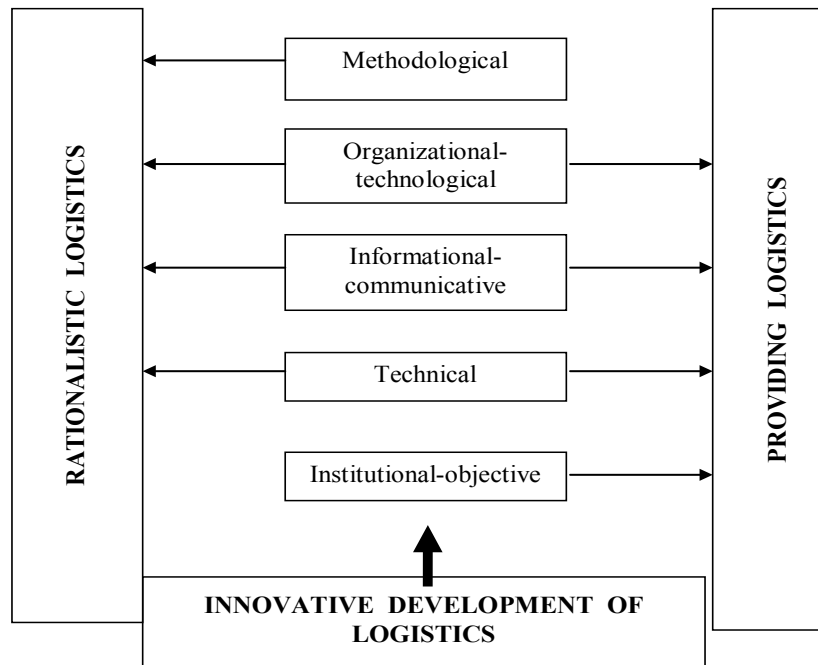


Figure 1 – Main kinds (directions) of innovative development in entrepreneurial logistics

Methodological development of logistics is innovative development which implies improvement of existing concepts, principles, models and methods of formalization and rationalization of separate economical phenomena with the purpose of building optimal flow processes and logistical systems as well as supporting managing decisions. An example of that could be improving of methods of supplying chain management, improvement of planning stocks methodology and so on.

Institutional-objective development of logistics is innovative development of existing or formation of new logistical providers, objects, networks, chains, canals and other formations which are connected with providing processes of business activity. For example formation of logistical operator, improvement of warehousing, development of logistical canals and so on.

Organizational-technological innovative development of logistics is the development which implies implementation of innovations aimed at improving organization of flow processes and technological operations in the system of business provision. For example improving and implementation of logistical systems MRP, DRP, CALS, KANBAN, OPT and others.

Informational-communicative development of logistics is the innovative development which implies improvement in level of rationalization and increase in quality of informational-communicative provision of flow processes in logistical systems. For example improvement in the system of electronic database exchange, electronic remittance and so on.

Technical development is the innovative development which implies improvement of technical means of logistics provision of entrepreneurial activity based on achievements of

scientific and technological advance. For example development of technical capabilities of coding goods, satellite surveillance over location of trucks and so on.

At the second stage features of logistics and its innovative development in the system of management were studied. The reason for semantic crossing and identification of logistics with logistical management is that many scientists consider it as an integral part of management or science about control as well as that all these notions are grounded on systematic approach.

Meanwhile J.S. Johnson believes that logistics is a classic example of systematic approach to problems of business. From business point of view systematic approach means that purposes of the company can be reached due to reasonable realization of correlation between main functional missions of the company (marketing, production, finances). This approach also works in logistics. A manager-logistician should provide balance between all functional missions and prevent each of them from hurting another one [6].

V. Stahanov and V. Ukrainsev believe that best of all logistical dialectics can be traced at the micro-level of economy that is within specific company. Here logistics is symbiosis of manufacturing, marketing, management and finances and dialectics of relations between logistics and management best of all can be studied through logistical management or on the basis of business logistics [10].

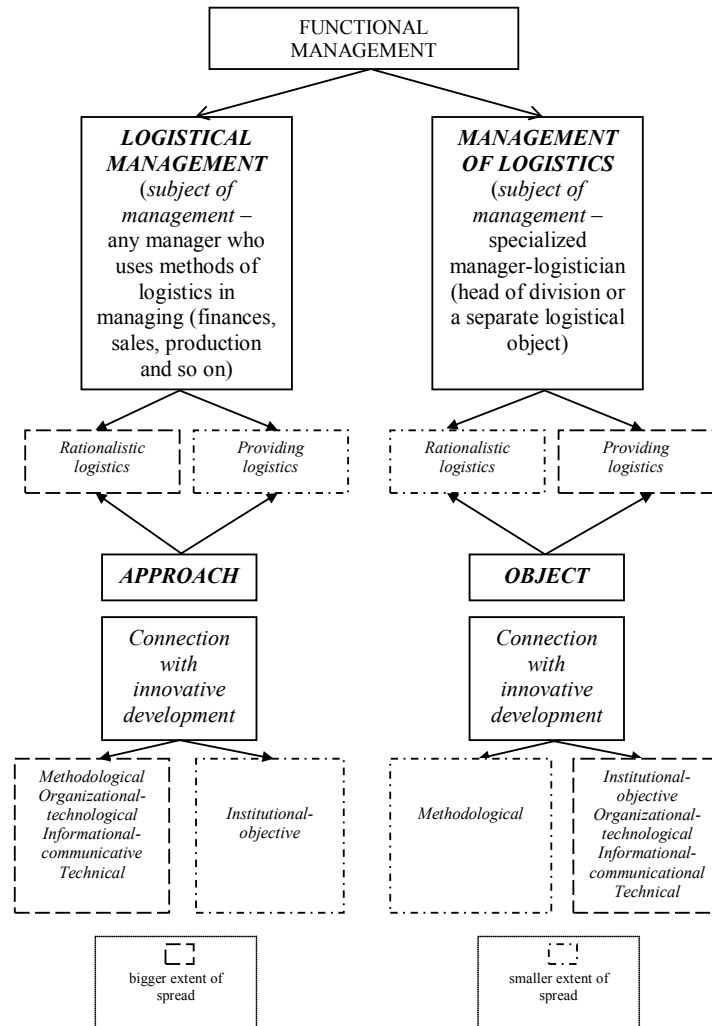
M. Oklander who uses in his study term “management of logistics” considers its main functions: formation and development of system of logistics corresponding to its conceptual principles and conditions; development and realization of strategy of logistics corresponding to company’s market strategy, complex management of enterprise’s logistical system, coordination of interconnected functions of company’s management and so on [8].

Despite essential connection between logistics, logistical management and management of logistics it is important to pay attention to principle gnosiological differences between these notions.

According to the author there is much sense to define modern entrepreneurial logistics as branch of knowledge in the field of economy with the object of study – providing (supply) processes and infrastructure connected with them. Directly logistics is not reasonable to view as a type of management or as a science about control since in modern management other logistical notions are used with specific managing interpretation. Besides in the professional terminology it is management of logistics or logistical management. Logistics itself is either an object of management or form one of the approaches to management (like finances, marketing, production and so on). Here one can observe a dual character of entrepreneurial logistics in the system of management. Dualistic (Latin *duo* – two) – is typical to dualism; dual [16]. As it is known management (in a wider sense) is the influence of the subject of management on the object of management with the purpose of changing its condition or behavior.

Management implies transformation of information concerning condition of the object into information for order from the subject. Management is purposeful, programmed or unconditioned influence on objects with the sake of achieving ultimate goals with the help of processors, phenomena, processes when the interaction with them is present in the regime of determined or unconditioned program regulations [17]. Concordance (regulation) of managing actions leads to creation of vertical connections with them – subordination that is submission of one to interests of another. Subordination relations differ by some kinds: direct submission, indirect submission, double submission, hierarchic submission and so on. All these kinds of subordination have their own features and certain extent in specific systems of management depending on methods which are used in relations “subject – subject” [18]. According to the author the notions logistical management and management of logistics is principally different

and the difference between them can be viewed through subject-subject relations and features of rationalistic and providing logistics (fig. 2).



**Figure 2 – Dualistic character of logistics and its innovative development in the system of management**

Logistical management is the approach to management of different objects in the system of management using separate approaches and methods of both rationalistic (optimizing) and providing logistics. Meanwhile decisions in logistical management are connected not only with rationalization of material and other flows, but also with the formalization of grounding the supplier's choice, type of transportation, technology or optimal planning of manufacturing or use of resources and so on. Management of logistics is preferable management of processes or objects of logistical provision in manufacturing and delivering goods, services or produce

to customers. In the meantime management of logistics of enterprise implies certain influence (not always logistical) on processes or objects of logistical provision of production activity (for example management of supplies, transportation department, distribution department and so on).

According to N. Chuhrai logistical management of innovations is in realization of main managing functions (planning, organization, coordination, motivation and control) in such a way that it should be most effectively used (considering the costs of innovations) for achieving main goals: corresponding effect form innovations, on the appointed time, in the appointed place, with optimal expenses [5]. Meanwhile logistical management in a bigger extent is focused on methodological, organizational-technological, informational-communicative and technical development and in a smaller extent on institutional-objective innovative development of logistics. Management of logistics to a smaller extent is focused on methodological development compared to other kinds of innovative development of logistics.

**Conclusions.** Innovative development of logistics is an integral part of innovative development at macro-, meso- and micro-level. Main directions (kinds) of innovative development of logistics are methodological, institutional-objective, organizational-technological, informational-communicative and technical developments. Components of logistics development to a different extend are connected with their rationalistic and providing manifestations.

Entrepreneurial logistics is a field of science in the field of economy and it is not a component of managing business or marketing. In the system of management of enterprise logistics has a dualistic character, since it is simultaneously both the approach and the object of management. As the approach to management logistics most often is manifested in the system of logistical management and as the object of management – in the system of management of logistics. The process of logistical management is preferably based on means of rationalistic logistics and management first of all is connected with processes of providing main business activity of a company. Meanwhile logistical management to a smaller extent is connected with institutional-objective, and management – to methodological approach of innovative logistics development. All the mentioned above is reasonable to take into account while forming system of functional management in entrepreneurial environment and in the process of scientific cognition of logistics and management of its innovative development.

**Prospective studies** may be aimed at problems of methodological estimation of innovative logistical development of enterprises.

1. Illiashenko S.M. Upravlinnia innovatsiynym rozvytkom (Management of innovative development) : monograph / S.M. Illiashenko, O.A. Bilovodska. – Sumy : Universytetska knyha, 2010. – 281 p.
2. Soloviov V.P. Innovatsiyni rozvytok regioniv: pytannia teorii ta praktyky (Innovative development of regions: theoretical and practical issues) : monograph / V.P. Soloviov, H.I. Koreniako, V.M. Holovatiuk. – K. : Feniks, 2008. – 224 p.
3. Alkema V.H. Rozvytok mikrolohistychnykh system ta metodyka yogo otsiniuvannia (Development of micro-logistical systems and methodology of its estimation) / V.H. Alkema // Lohistyka: teoriia ta praktyka (Logistics: Theory and Practice). – 2012. – № 1 (2). – P. 5-11.
4. Karp I.M. Teoretychni osnovy mikrolohistychnoi systemy (Theoretical fundamentals of a micro-logistical system) / I.M. Karp // Visnyk Khmelnytskogo natsionalnoho universytetu (Bulletin of Khmelnytsky National University). – 2011. – № 1. – P. 223-227.
5. Chukhrai N.I. Lohistychni suprovid innovatsiinoi diialnosti pidpriemstva (Logistical provision of innovative activity of an enterprise) / N.I. Chukhrai // Lohistyka: teoriia ta praktyka (Logistics: Theory and Practice). – 2012. – № 1 (2). – P. 196-203.

**О.П. Величко. Інноваційний розвиток у логістиці та його зв'язок з логістичним управлінням і управлінням логістикою**

6. Dzhonson Dzh. S. Sovremenniaia lohistika (Modern logistics) / Dzh. S. Dzhonson, F. Vud Donald, D. L. Vordlou, P. R. Merfi. – M. : Izdatelskiy dom «Vilyams», 2005. – 624 p.
7. Krykavskiy Ye.V. Lohistyka. Osnovy teorii (Logistics. Basics of theory): textbook / Ye.V. Krykavskiy [2-he vyd.]. – Lviv : Natsionalnyi universytet «Lvivska politehnika», «Intelekt-Zakhid», 2006. – 456 p.
8. Oklander M. Kontury ekonomicheskoi lohistiki (Contours of economical logistics) / M. Oklander. – K. : Naukova dumka, 2000. – 174 p.
9. Serheev V.I. Menedzhment v biznes-logistike (Management in business logistics) / V.I. Serheev. – M. : Filin, 1997. – 722 p.
10. Stakhanov V.N. Teoreticheskie osnovy lohistiki (Theoretical basics of logistics) / V.N. Stakhanov, V.B. Ukrainsev. – Rostov-n-D : Feniks, 2001. – 160 p.
11. Stok Dzh. Strategicheskoe upravlenie lohistikoy (Strategic management of logistics) / Dzh. Stok, D. Lambert / per. s 4-ho izd. – M : INFRA-M, 2005. – 797 p.
12. Drobotia Ya.A. Upravlinnia lohistykoiu materialnykh zapasiv ahrarnykh pidpriemstv (Management of logistics in material inventory of agrarian enterprises) : candidate's thesis : 08.00.04 / Drobotia Yana Anatoliivna. – Poltava, 2011. – 292 p.
13. Rozvytok (Development) [Electronic recourse]. – Access mode: // <http://uk.wikipedia.org/wiki/Розвиток>.
14. Katz J.S. Web indicators for complex innovation systems / J.S. Katz, V. Cothey // Research Evaluation. – 2006. – V. 15 (№2). – 83-85 p.
15. Standards of Logistics and Supply Chain Management / European Logistics Association. – 2004. – 15 p.
16. Suchasnyi tlumachnyi slovnyk ukrainskoi movy: 65000 sliv (Contemporary Explanatory Dictionary of the Ukrainian Language: 65000 words) / for editorial V.V. Dubichynskii. – Kh. : VD «Shkola», 2006. – 1008 p.
17. Upravlinnia (Management) [Electronic recourse]. – Access mode: <http://uk.wikipedia.org/wiki/Управління>.
18. Malynovskiy V.Ya. Derzhavne upravlinnia (State administration) / [Electronic recourse]. – Access mode: [http://www.pravo.vuzlib.net/book\\_zl181\\_page\\_7.html](http://www.pravo.vuzlib.net/book_zl181_page_7.html).

**О.П. Величко  
Інноваційний розвиток у логістиці та його зв'язок з логістичним управлінням і управлінням логістикою**

*У статті наведено авторську класифікацію та тлумачення основних видів (напрямів) інноваційного розвитку логістики. Установлено основні відмінності між процесами логістичного управління та управлінням логістикою, а також визначено їхній зв'язок з основними видами (напрямами) інноваційного логістичного розвитку.*

Ключові слова: інноваційний розвиток, логістика, види, логістичне управління, управління логістикою, зв'язок.

**А.П. Величко  
Инновационное развитие в логистике и его связь с логистическим управлением и управлением логистикой**

*В статье представлена авторская классификация и толкование основных видов (направлений) инновационного развития логистики. Установлены основные отличия между процессами логистического управления и управлением логистикой, а также определена их связь с основными видами (направлениями) инновационного логистического развития.*

Ключевые слова: инновационное развитие, логистика, виды, логистическое управление, управление логистикой, связь.

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