

ВАРДІАШВІЛІ А.В.

к.е.н., н.с.

Інститут проблем ринку та економіко-екологічних досліджень НАН України

Французький бульвар, 29, м. Одеса, Україна, 65044

E-mail: vardia@ukr.net

ORCID: 0000-0002-3050-2760

## АКТУАЛЬНІСТЬ ВПРОВАДЖЕННЯ ІННОВАЦІЙ В ТРАНСПОРТНУ СИСТЕМУ УКРАЇНИ

**Актуальність.** На сьогоднішній день, інноваційні технології набувають все більшого значення у всіх галузях економіки і промисловості, в тому числі, включаючи транспортну систему країни. Ефективність національної економіки, її економічне зростання, стійкість територіальних комплексів і зовнішньоекономічної діяльності багато в чому визначається функціонуванням транспорту. З одного боку, прогресивні технології транспортної галузі відображають рівень розвитку національної економіки та її конкурентоспроможність, а з іншого – рівень економічної безпеки держави. Тому впровадження інновацій в транспортній сфері є одним із головних завдань, що стоять перед Україною, як для держави в цілому, так і для окремих приватних логістичних компаній, зокрема. Тільки впроваджуючи в національну транспортну систему новітні технології та розробки, можна домогтися значного скорочення часу доставки вантажів від «дверей до дверей», поліпшення якості транспортної продукції, зниження собівартості, що в свою чергу призведе до поліпшення ефективності функціонування і управління транспортною галуззю та підвищення її конкурентоспроможності на світовому ринку.

**Мета та завдання.** Метою статті є аналіз підвищення ефективності та результативності транспортної системи України за рахунок інноваційних технологій.

**Результати.** Впровадження інноваційних технологій на морському транспорті на сучасному етапі пов'язано з інновацією в документообігу, що супроводжує рух вантажів, автоматизованим наглядом і контролем за рухом вантажів, і, в першу чергу, контейнерів, спрощенням митного контролю, модернізацією системи електронної взаємодії учасників транспортно-технологічного процесу (флот та порти), органів виконавчої влади та інших учасників зовнішньоторговельних операцій (транспортних агентів, брокерів, експедиторів) на всіх етапах логістичного процесу.

**Висновки.** Для того, щоб Україна зайняла гідне місце в світовій транспортній системі, країні необхідна модернізація національної транспортної системи, впровадження і реалізація інноваційних транспортних рішень з використанням світового досвіду. Для приведення у відповідність транспортної системи України до стану, що відповідає міжнародним стандартам, необхідно впроваджувати в галузь інвестиційні та інноваційні проекти. Реалізація інноваційних транспортних проектів дозволить забезпечити реконструкцію діючих і будівництво нових необхідних об'єктів транспортної інфраструктури, поліпшити ефективність функціонування і управління транспортною галуззю, змінити доступність, якість і безпеку транспортних послуг, які задовольняють потреби економіки, споживачів і населення України, забезпечують підвищення національної конкурентоспроможності та привабливості для іноземного капіталу, що дозволить знизити собівартість транспортної продукції на всьому транспортно-технологічному процесі.

**Ключові слова:** інновації, інноваційна політика, інвестиції, інвестиційна привабливість, транспортна політика держави, реформування транспортної галузі, транспортно-технологічний процес, економіка інновацій, транспортно-технологічні системи, морські порти, транспортна система України, конкурентоспроможність.

VARDIASHVILI A.V.

Phd (Economics), Candidate of Econ. Sciences, researcher

Institute Of Market Problems And Economic & Ecological Researches of the National Academy Of Sciences Of Ukraine

Frantsuzskiy Boulevard, 29, Odessa, Ukraine

E-mail: vardia@ukr.net

ORCID: 0000-0002-3050-2760

## URGENCY OF INTRODUCTION OF INNOVATIONS INTO THE TRANSPORT SYSTEM OF UKRAINE

**Topicality.** Today, innovative technologies are becoming increasingly important in all sectors of the economy and industry, including the country transport system. The efficiency of the national economy, its economic growth, the

stability of territorial complexes and foreign economic activity is largely determined by the functioning of transport. On the one hand, advanced technologies in the transport sector reflect the level of development of the national economy and its competitiveness. On the other hand, they reflect the level of economic security of the state. Therefore, the introduction of innovations in the transport sector is one of the main tasks facing Ukraine, both for the state as a whole and for individual private logistic companies in particular. Only by introducing the latest technologies and developments into the national transport system, it is possible to achieve a significant reduction in door-to-door delivery time, improve the quality of transport products, reduce costs, which in turn will improve the efficiency of operation and management of the transport industry on the world market.

**Aim and tasks.** The purpose of the article is to analyze the increase of efficiency and effectiveness of the transport system of Ukraine at the expense of innovative technologies.

**Research results.** The introduction of innovative technologies in maritime transport at the present stage is associated with innovation in document management, accompanying the movement of goods, automated supervision and control of the movement of goods and, first of all, containers, simplification of customs control, modernization of electronic interaction process (fleet and ports), executive authorities and other participants of foreign trade operations (transport agents, brokers, freight forwarders) at all stages of the logistics process.

**Conclusion.** In order for Ukraine to take a worthy place in the world transport system, the country needs to modernize its national transport system; also, it needs to implement innovative transport solutions using world experience. In order to bring the transport system of Ukraine in line with international standards, it is necessary to implement investment and innovation projects in the industry. Implementation of innovative transport projects will allow to reconstruct existing and build new necessary transport infrastructure facilities, improve the efficiency of operation and management of the transport sector, change the availability, quality and safety of transport services that meet the needs of Ukraine's economy, consumers and population, improve attractiveness for foreign capital, which will reduce the cost of transport products throughout the transport process.

**Key words:** innovations, innovation policy, investments, investment attractiveness, transport policy of the state, reforming of transport sector, transport-technological process, economy of innovations, transport-technological systems, seaports, transport system of Ukraine, competitiveness.

**Problem statement and its connection with important scientific and practical tasks.** The world society of the beginning of the XXI century is an extremely dynamic environment that is constantly changing. Such changes in society became possible as a result of the scientific and technological revolution that began after the World War II. The accumulation of new knowledge has led to the rapid development of technologies that have found application in the applied economy, creating new industries. The developed countries of the world have since begun to build economies on the basis of new discoveries and inventions. Scientific and technological progress has led to the formation of such processes, which led to the fact that science and industry could not develop without each other. The development of science and production was conditioned by the corresponding development of each component. Innovation processes have become decisive in the development of every country.

The scientific and technological revolution has rapidly accelerated the emergence of new technologies, led to the emergence of goods with qualitatively new consumer properties and the formation of markets for fundamentally new products, contributed to the rapid renewal of production based on innovation. All this gave the economy uncharacteristic qualities that were not inherent in it during the monopoly and led to significant structural changes. Innovation has become an integral part of today's economy [9].

The need for innovation is inherent in the transport process, because transport is one of the necessary components of the material process of reproduction, which combines the spheres of production and consumption, producer and consumer and promotes the development of market relations. Transport has been considered the engine of progress since ancient times.

Transport in the classical sense, not related to the sphere of material production, provides the formation of the final form of the product, which means the product ready for consumption, because the product is ready for consumption only when it is delivered to the consumer. Without it, it is impossible to implement the reproductive cycle, which includes the following stages: production - distribution - exchange - consumption. The exception is the early stage of formation of a simple (domestic) market, when the manufacturer independently sold its products to the direct consumer.

Simultaneously with the development of market relations in material production, the transport services sector is being formed.

**Analysis of recent publications on the problem.** Many foreign and domestic scientists are engaged in research of innovations. The work of such scientists as B. Twiss, B. Santo, V.D. Hartmann, R. Solow, E. Toffler, E. Fon Hippel, H. Burnett, R. A. Fatkhutdinov, V.V. Ermolaeva O. Lapko, Y. Bazhal, N. Krasnokutskaya, D.M. Chervanov and others relate to this problem.

Such scientists as Tatrakova M. A., Shevchuk Yu. V., I.O. Botkin, LG are engaged in research of questions of financing of innovative activity.

In the works of V.A. Grosul, N.V. Boshoti, G.V. Ershova and others innovative activity in Ukraine is considered.

O. Yu. Gulevych, V.V. Shklyar and others deal with the problems of the service sector, including transport companies.

Many scientists, including Danylkiv H.P., Gorobova Kh.V., Poburko O.Ya., Yermak S.O., Mykhailychenko K.M., Komchatnykh O.V. etc, have studied the main problematic issues of the process of implementation of innovations in the field of transport. They considered the concepts and classifications of innovations, determined the main directions of innovation in transport enterprises, substantiated the importance of innovations in improving the efficiency of transport enterprises.

**Allocation of previously unsolved parts of the general problem.** Despite the fact that a lot of scientific works, monographs and articles are devoted to the problems of innovations in the economy of industry and transport, there are still issues that have not received sufficient coverage and treatment of some problems in the field of their implementation in the country's transport system. In particular, linking the impact of innovative technologies in transport processes and the introduction of innovations in electronic document management and their impact on the end result of the transport industry.

**Formulation of research objectives (problem statement).** To analyze the increase of efficiency and effectiveness of the transport system of Ukraine at the expense of innovative technologies.

**An outline of the main results and their justification.** The process of exchange on the basis of world trade in the modern economy is provided by a developed transport system. In the modern economy, transport services provide an expanded reproduction process, accelerate the speed of goods delivery and increase the efficiency of social production. The growing scale of production, the emergence of new types of goods require stable, regular delivery of customized and specialized vehicles, appropriate transportation technologies and means of processing. As a rule, international exchange requires the involvement of several modes of transport in the process of delivery of goods, different operators and a clear organization of their interaction that relates to logistics. Modern logistics, which ensures the speed of delivery and efficiency of the means involved, is impossible without innovation and investment. Representing a tool for achieving economic and social goals, transport is the most important sector that ensures GDP growth, job creation, involvement of the country in the international division of labor, the formation of the effect of scale. Modern logistics innovations allow to reduce the transport component in the total cost of goods.

That is why the topic of innovation in the transport sector is so relevant in today's world GDP growth, extensive and close foreign economic relations of the world community [12].

At the end of the XX and the beginning of the XXI century a new stage of development of scientific and technological progress began, which is characterized by the creation of the information society and innovative economy. An innovative economy is a type of economy that is based on the flow of innovation, on constant technological improvement, on the production and export of high-tech products with high added value and the technologies themselves. It is assumed that the profit is mainly created by the intelligence of scientists, designers and engineers, the information sphere, not material production (industrial economy) and not finance (capital accumulation).

The innovation economy is based on two fundamental principles:

- the main goal of economic policy of the state is to stimulate greater productivity through innovation;
- markets based solely on resources and price factors will not always be efficient enough to boost productivity and economic growth.

The basis of the innovative economy is a new model of socio-economic formation, which is based on the innovative restoration of development not only of all spheres of the economy, but also the social sphere on the basis of maximum implementation and effective use of information and communication technologies. This requires the intensification of innovative activities, which should be aimed at ensuring the development of fundamental, basic sectors of the economy, based on effective economic public policy.

To stimulate and implement this concept in the state economy, the "Strategy of Innovative Development of Ukraine for 2010-2020 in the context of globalization challenges" was developed, which complemented and detailed the key provisions laid down in the "Strategy of Innovative Development of Ukraine for 2009-2020 and for the period up to 2030" [14]. The strategy is a comprehensive model of innovative development of Ukraine. It identifies strategic priorities and a set of key specific measures for the implementation of innovative technologies. The main goal of the Strategy is to form a new type of innovation system that ensures the competitiveness of domestic economy through the use of domestic

scientific potential and technology. The strategy set a new strategic course - the establishment in Ukraine of an innovative model of its economic and social development, improving the efficiency of the intellectual potential of the country, ensuring the competitiveness of the national economy, achieving stable, sustainable development and improving the welfare of citizens. It is determined that innovative development is a priority and strategic direction of development of Ukrainian economy, industries and enterprises in an innovative society.

In the field of functioning and development of the country's transport system, the state should be based on two principles:

- creating conditions for improving the competitiveness of the national economy and quality of life, providing conditions for the development of quality and safe transport services based on the effective results of their operation;

- focus on increasing the productivity and competitiveness of the national economy, which provides volumes and freight flows of the transport services market [10].

Effective competitiveness of the transport industry is ensured by the presence of three components:

- competitive, high-quality transport services;
- developed productive and safe transport infrastructure, vehicles and means of their processing, which are necessary to the extent that they will ensure the competitiveness of transport services;
- creation of conditions for exceeding the level of supply of transport services over demand, because under other conditions a competitive environment cannot exist.

General economic, general transport and by type of transport activity, as well as general social should be identified as the main targets [19].

The transport system of the country is the most important part of the production infrastructure, and its development is one of the priorities of public policy. For its development, the innovative component in the areas of the "National Transport Strategy until 2030" was strengthened. Its implementation will allow to modernize the transport system and increase the capacity of the transport network, maximize all transport capacities of related modes of transport through the development of direct and multimodal transport, accelerate the integration of the domestic transport system into European and world transport systems, maximize transit potential level of transport safety.

All these implementations should ultimately increase the efficiency of the entire transport system of Ukraine.

Seaports are key points of foreign trade. The quality and volume of exports of transport services, the level of competitiveness of national goods on the world market depend on their efficiency. In order for the seaports of Ukraine to be attractive and able to compete with competing ports on the Black Sea, it is necessary to carry out comprehensive work to eliminate the backlog of technical equipment in accordance with modern European and world requirements.

Negative factors that cause non-compliance of the berth front of Ukrainian ports with the needs of the fleet are insufficient depths, outdated handling equipment, outdated cargo handling technologies, imperfect systems of organization of stevedoring companies and other related port services serving cargo flows. Reconstruction of the ports technical component should primarily be aimed at deepening the approach channels and depths along the berths, due to the needs of servicing the new generation of heavy fleets and container vessels. An integral part of the efficient and competitive operation of port complexes should be their own capacity for repair and maintenance of transshipment equipment [11].

The perfect and progressive technical component of a modern port is not an exclusive condition for competitiveness. Modern conditions of interaction between the port and port complexes require reorganization not only of the technical base, but also innovations of the document flow that accompanies the movement of goods, due to the fact that millions of tons of cargo move daily by sea, land or waiting for delivery. Despite the fact that the system of automated supervision of goods and containers has been implemented for many years, the use of non-automated processes and records on paper continues, especially when transferring goods to other means of transport to intermediaries and recipients (for example, dozens of paper documents are processed per average container ship). An additional complication in the document flow is created by the customs of ports for receiving ships, transshipment and cargo clearance. There are different customs requirements and port dues. To solve this problem, the investment in innovative technologies for formalizing paperwork and its translation is advisable, which will help participants in the transport process to monitor, supervise, record, communicate and exchange information. Improved traffic management will accelerate port traffic, as well as loading and unloading operations, reduce non-production downtime, which will speed up the movement of goods, reduce delivery time and increase the efficiency of both the fleet and

port complexes, increasing their cargo turnover. Port complexes that improve the paper document management system gain a significant competitive and economic advantage. An example is the port of Singapore, which shows how an integrated port can operate, despite the fact that Singapore is a liquid destination for cargo [6].

For Ukraine, before the introduction of innovative technologies in maritime transport, in addition to the above, simplification of customs control of ships and cargo should be included. The effectiveness of the implementation of the "single window" mechanism in the area of customs in seaports is ensured by the organization of the system of electronic interaction of executive authorities and other participants in foreign trade operations (transport agents). Connection to the system is possible in two ways: by creating a workplace or by integrating into the system of the single information port community. The second way is more convenient, but more complicated, it requires changes to the software. The introduction of modern computer technology at all stages of the logistics process of passing and processing cargo in ports is important.

Based on world experience, Ukraine, in order to successfully integrate into the world transport system, needs to implement intelligent transport systems. They are intelligent systems that use innovative developments in the modeling of transport systems and traffic control, which provides end users with more information and safety, as well as qualitatively increase the level of interaction of road users compared to conventional transport systems.

Intelligent transport systems are designed to collect, process and transmit information about the operation and condition of vehicles, their location, promotion of goods, to exchange information between participants in the transport process in real time as well as traffic management. The solution of transport problems is based on the use of modern information and telecommunication technologies and management methods. The introduction of intelligent transport systems has virtually unlimited scalability and integrates with existing information systems and databases of government agencies [5; 6].

One of the main tasks of the intelligent transport system is to implement and support the possibility of automated interaction of all transport entities in real time on adapted principles. The main in the construction of an intelligent transport system is a complex of road transport, transport technology, transport service and information infrastructure.

Intelligent transport systems, in addition to the economic impact on the transport and technological process, are important for ensuring the national economic security of the state.

This transport management technology has become widespread at the beginning of the XXI century, in such countries as Japan, the United States, China, Germany, France and others. Today, the leaders in advanced technologies in the field of intelligent transport systems are the countries of the Asian region: Japan, South Korea and Singapore.

The experience of using intelligent transport systems in different countries of the world has confirmed the effectiveness of their operation. They contribute to the optimization of transportation, the ability to make the most efficient use of available resources, provide maximum use of transport infrastructure capacity and distribution of traffic flows exceeding the maximum capacity, distribution of loads on transport infrastructure, rising the quality of transport systems, improving transport safety, information development service for participants in online transportation, introduction of electronic payments, reduction of environmental pollution, etc.

The development and deployment of intelligent transport systems is a potentially effective competitive innovative business for Ukraine, which will significantly increase the return on investment and innovative capital investments. In addition, it will have a stimulating effect on the development of a new high-tech industry sector [4; 18].

Today the development and implementation of intelligent transport systems of various scales begins in Ukraine. Development and implementation of innovations in the transport complex of the country should be carried out within the framework of measures for the development and reform of transport subsectors: road, rail, water and air transport, as well as through the use of fundamentally new technologies in the transport process leading to progressive intersectoral structural shifts, effective transformations and modernization of the transport and road complex of Ukraine on the basis of intermodal transportations.

For the successful and efficient implementation of intelligent transport systems, there must be an appropriate level of development of all transport modes that are involved in the system of intermodal transport. The level of the Ukrainian national automobile complex development does not fully correspond to the development of railway transport and maritime industry of the country. To bring it to the level of compliance, it is necessary to attract additional financial resources for its development.

Development and implementation of innovations in the road industry of Ukraine, the use of new technologies in road construction and reconstruction, will improve the quality of the road surface, which will increase the period of operation of the road without major repairs, as well as increase road safety. Transition to environmentally friendly technologies, development of intelligent systems, intelligent roads, toll roads, real-time traffic information, introduction of electronic document management and a single transport document for all modes of transport, etc. will increase the efficiency of the transport process throughout the movement of goods [12; 5; 6].

The introduction of innovative technologies requires additional funds (capital), which at the implementation stage objectively reduces the efficiency of the enterprise, so to encourage owners (enterprises) to attract additional funds for such purposes it is appropriate to develop a system of interest through tax holidays or investment-oriented benefits in the field of taxation for the period of innovation. Also, exemption from taxation of the part of the company's profit that will be reinvested by the owner in the implementation of investment projects is possible.

The main factors influencing the process of accelerating the introduction and implementation of investments and innovations in any field of material production, including the transport industry, are:

- simplification of the procedure for passing any innovation from the stage of development to the stage of its introduction to the market, taking into account infrastructural and institutional features;
- increasing the level of market infrastructure development;
- development of forms of public-private partnership;
- formation of a regional structure for the promotion of innovations;
- Improving the taxation system of enterprises that carry out innovations, through the use of tax credit for research and development, the use of tax rebates, as well as innovation credits;
- increasing the level of attracting public funds from the state budget for the transport infrastructure development;
- Improving other ways of raising capital [8].

For the effective development of the national transport sector, Ukraine must rely on foreign experience of innovating in the transport system, not only to accelerate this process, but also to reduce the cost of finding optimal ways to develop it and adapt to the needs and level of the world transport system.

**Conclusions and perspectives of further research.** In order for Ukraine to take a worthy place in the world transport system, the country needs to modernize its national transport system, implement innovative transport solutions using world experience. In order to bring the transport system of Ukraine in line with international standards, it is necessary to implement investment and innovation projects in the industry. Implementation of innovative transport facilities will ensure the reconstruction of existing and construction of new necessary transport infrastructure projects, improve the efficiency of operation and management of the transport sector, change the availability, quality and safety of transport services that meet the needs of Ukraine's economy, consumers and population attractiveness for foreign capital, which will reduce the cost of transport products.

The slow pace of implementation of structural reforms in the transport sector of Ukraine is closely related to the implementation of structural reforms in the economy as a whole, reforms in banking and finance, training, as well as shortcomings in tariff, customs and tax policies affecting the formation of financial resources country, its enterprises and investment attractiveness for foreign investors who could have a financial interest in the functioning of the transport sector of Ukraine. Encouraging foreign investors and their participation in the reconstruction of Ukrainian transport system will not only attract financial resources, but also distribute the risks and responsibilities of its operation and increase the return on capital invested in innovative developments.

#### ЛІТЕРАТУРА

1. Васильев В. И., Ильясов Б. Г. Интеллектуальные системы управления. Теория и практика. Москва : Радиотехника, 2009. 392 с.
2. Гросул В. А. Проблеми інноваційної діяльності в Україні. *Бюлетень Міжнародного Нобелівського економічного форуму*. 2010. №1 (3). Т. 1. С. 76–82.
3. Єрмак С. О., Чернова Ю. О. Інновації в транспорті: зарубіжний досвід. *Торгівля і ринок України*. 2016. № 39-40. - С. 73-79.
4. Жанказиев С.В. Интеллектуальные транспортные системы: учеб. пособие. Москва : МАДИ, 2016. 120 с.

5. Інноваційні перетворення на транспорті як чинник модернізації транспортно-дорожнього комплексу України. *Національний інститут стратегічних досліджень* : веб-сайт. Режим доступу: <http://www.niss.gov.ua/articles/1303>.

6. Інновації в області транспорту. *IBM*: веб-сайт. Режим доступу: <https://www.ibm.com/ibm/ideasfromibm/ru/transportation/index1.html>

7. Князева О.А. Інноваційний розвиток підприємств поштового зв'язку: теорія, методологія, практика: дис. д-ра екон. наук: 08.00.04. Одеса, 2009. 360 с.

8. Косолапова М.В. Комплексный экономический анализ хозяйственной деятельности: Учебник. Москва : ИТД «Дашков и Ко», 2014. 248 с.

9. Молчанова О.П., Абрамешин А.Е., Воронина Т.П., Тихонова Е.А. Инновационный менеджмент : учебник для вузов. Москва, 2001. 272 с.

10. Національна транспортна стратегія України на період до 2030 року. *Урядовий портал*. веб-сайт. Режим доступу: <https://menr.gov.ua/files/docs/Projekt/%D0%9F%D1%80%D0%BE%20%D1%81%D1%82%D1%80%D0%B0%D1%82%D0%B5%D0%B3%D1%96%D1%97%202030.doc>

11. Посохов С., Дубровський М., Немчук А. Інноваційні підходи та екологічні рішення. *Порти України*. 2014. №4(116). С. 30–32.

12. Старовойт Р. Транспортные артерии страны. *Деловая Россия*. 2014. № 9. С.28–29.

13. Сечкин С. Эти неглубокие глубины. *Порты Украины*. 2012. №3. С. 30-31.

14. Стратегія інноваційного розвитку України на 2010-2020 роки в умовах глобалізаційних викликів». *Законодавство України*. веб-сайт. Режим доступу: <https://zakon.rada.gov.ua/laws/show/2632-17>

15. Стратегія інноваційного розвитку України на період до 2030 року. *Законодавство України*. веб-сайт. Режим доступу: <https://zakon.rada.gov.ua/laws/show/526-2019-%D1%80>

16. Рассел Д., Кон Р. Транспортные потоки. Москва, 2013. 35 с.

17. Розпорядження КМУ від 20.10.2010 № 2174-р «Про схвалення Транспортної стратегії України на період до 2020 р.» *Законодавство України*. веб-сайт. Режим доступу: <http://zakon2.rada.gov.ua/laws/show/2174-2010-%D1%80>.

18. Федеральное казенное учреждение. Дороги России. Мировой опыт внедрения и развития ИТС. веб-сайт. Режим доступу: <http://www.dorros.ru/its-2/mirovoj-opyt-vnedreniya-i-razvitiya-its/>

19. Экономика транспорта: учебник и практикум для академического бакалавриата / Е. В. Будрина и др. Москва : Юрайт, 2018. 366 с.

## REFERENCES

1. Vasil'ev V. I., П'jasov B. G. Intellektual'nye sistemy upravlenija. Teorija i praktika. Moskva : Radiotekhnika, 2009. 392 s.

2. Grosul V. A. Problemy` innovacijnoyi diyal`nosti v Ukrayini. Byulleten` Mizhnarodnogo Nobelivs`kogo ekonomichnogo forumu. 2010. #1 (3). T. 1. S. 76–82.

3. Yermak S. O., Chernova Yu. O. Innovaciyi v transporti: zarubizhny`j dosvid. Torgivlya i ry`nok Ukrayiny`. 2016. # 39-40. - S. 73-79.

4. Zhankaziev S.V. Intellektual'nye transportnye sistemy: ucheb. posobie. Moskva : MADI, 2016. 120 s.

5. Innovacijni peretvorennya na transporti yak chy`nny`k modernizaciyi transportno-dorozhn`ogo kompleksu Ukrayiny`. Nacional`ny`j insty`tut strategichny`x doslidzhen` : veb-sajt. Retrieved from: <http://www.niss.gov.ua/articles/1303>.

6. Innovacii v oblasti transporta. IBM: veb-sajt. Retrieved from: <https://www.ibm.com/ibm/ideasfromibm/ru/transportation/index1.html>

7. Knyazyeva O.A. Innovacijny`j rozvy`tok pidpr'yemstv poshtovogo zv'yazku: teoriya, metodologiya, prakty`ka: dy`s. d-ra ekon. nauk: 08.00.04. Odesa, 2009. 360 s.

8. Kosolapova M.V. Kompleksnyj jekonomicheskij analiz hozjajstvennoj dejatel`nosti: Uchebnik. Moskva : ITD «Dashkov i Ko», 2014. 248 s.

9. Molchanova O.P., Abrameshin A.E., Voronina T.P., Tihonova E.A. Innovacionnyj menedzhment : uchebnik dlja vuzov. Moskva, 2001. 272 s.

10. Nacional`na transportna strategiya Ukrayiny` na period do 2030 roku. Uryadovy`j portal. veb-sajt. Retrieved from:

<https://menr.gov.ua/files/docs/Proekt/%D0%9F%D1%80%D0%BE%20%D1%81%D1%82%D1%80%D0%B0%D1%82%D0%B5%D0%B3%D1%96%D1%97%202030.doc>

11. Posoxov S., Dubrovs'kyj M., Nemchuk A. Innovacijni pidxody` ta ekologichni rishennya. Porty` Ukrayiny`. 2014. #4(116). S. 30–32.
12. Ctarovojt R. Transportnye arterii strany. Delovaja Rossija. 2014. № 9. S.28–29.
13. Sechkin S. Jety neclubokie glubiny. Porty Ukrainy. 2012. №3. S. 30-31.
14. Strategiya innovacijnogo rozvy`tku Ukrayiny` na 2010-2020 roky` v umovax globalizacijny`x vy`kly`kiv». Zakonodavstvo Ukrayiny`. veb-sajt. Retrieved from: <https://zakon.rada.gov.ua/laws/show/2632-17>
15. Strategiya innovacijnogo rozvy`tku Ukrayiny` na period do 2030 roku. Zakonodavstvo Ukrayiny`. veb-sajt. Retrieved from: <https://zakon.rada.gov.ua/laws/show/526-2019-%D1%80>
16. Rassel D., Kon R. Transportnye potoki. Moskva, 2013. 35 s.
17. Rozporyadzhennya KМУ vid 20.10.2010 # 2174-r «Pro sxvalennya Transportnoyi strategiyi Ukrayiny` na period do 2020 r.» Zakonodavstvo Ukrayiny`. veb-sajt. Retrieved from: [dostupu: http://zakon2.rada.gov.ua/laws/show/2174-2010-%D1%80](http://zakon2.rada.gov.ua/laws/show/2174-2010-%D1%80).
18. Federal'noe kazennoe uchrezhdenie. Dorogi Rossii. Mirovoj opyt vnedrenija i razvitija ITS. veb-sajt. Retrieved from: <http://www.dorros.ru/its-2/mirovoj-opyt-vnedreniya-i-razvitiya-its/>
19. Jekonomika transporta: uchebnik i praktikum dlja akademicheskogo bakalavriata / E. V. Budrina i dr. Moskva : Jurajt, 2018. 366 s.