ТЕОРЕТИЧНІ ОСНОВИ ІНТЕЛЕКТУАЛІЗАЦІЇ МІСЬКИХ ТРАНСПОРТНО-ЛОГІСТИЧНИХ СИСТЕМ

Актуальність. Наукова стаття присвячена дослідницькому аналізу особливостей застосування інтелектуальних технологій для управління логістичними процесами, їх впливу на цифрову трансформацію та модернізацію логістичних систем. Інтелектуалізація є новою тенденцією в економічному розвитку країн, обумовлена інтелектуальними технологіями, включаючи хмарні обчислення, великі дані та Інтернет. Інтелектуальні сервіси програм, засновані на інтелектуальних термінах, що надають безпрецедентний ефект та високу ефективність у цій галузі. Актуальність дослідження обумовлена цифровою трансформацією як світової економіки, так і України зокрема, в умовах чого формуються та застосовуються нові інформаційні технології та інтелектуальні системи, що дозволяють удосконалювати та модернізувати транспортно-логістичні процеси. У рамках статті розглянуто теоретичні аспекти інтелектуалізації логістичних процесів.

Мета та завдання. Метою роботи є дослідження теоретичних та методологічних засад реалізації концепції інтелектуалізації управління міськими транспортно-логістичними системами в умовах адаптивності.

Матеріали та методи. В роботі було використано методи теоретичного дослідження, а саме: метод аналізу, синтезу, метод сходження від абстрактного до конкретного, дедукції та індукції, також було використано в статті метод ідеалізації.

Результати. В процесі дослідження встановлено, що особливості транспортно-логістичних систем залежать від стратегій розвитку адміністративно-територіальних одиниць та драйвера зростання. Визначено найкращі країни у світі за критерієм ефективності логістиків, що дозволило порівняти результати діяльності цих країн із українськими показниками. За результатами порівняльного аналізу об'єднано, що сильне положення європейських країн в рейтингу обумовлене ефективною роботою їх транспортної системи і орієнтацією на використання досягнень у сфері інтелектуальних технологій, на відміну від слабкого становища України, яке обумовлене недостатнім використанням адаптивних інформаційно-комунікативних технологій при організації складних ланцюгів постачання суб'єктами транспортно-логістичної інфраструктури. Охарактеризовано функціональні складові та об'єкти інтелектуальних транспортних систем. Встановлено, що в основному застосовуються автономні інтелектуальні транспортні системи, які не є інтегрованими, що, в свою чергу, знижує їх ефективність. Побудовано теоретико-прикладну модель розвитку міських транспортно-логістичних систем в умовах адаптивності, що ґрунтується на сучасному емпірико-теоретичному багатій розвитку міських транспортно-логістичних систем, які знаходяться під впливом процесів глобалізації, соціалізації та інтелектуалізації з інструментами комп’ютерних інформаційних технологій при управлінні транспортними засобами та мережами у реальному часі. Охарактеризовано ключові аспекти впливу на управління транспортною системою в умовах інтелектуалізації. Обґрунтована необхідність розроблення стратегічних планів та програм реалізації щодо ефективного застосування прикладних технологій інтелектуалізації транспортних систем, що сприятиме вирішенню транспортних проблем міст. Це дозволило визначити основні концептуальні засади адаптації інтелектуальних транспортних технологій до міської логістичної системи, яка на даний час знаходитиметься в умовах локальності, неоднорідності, з низьким рівнем адаптивності та впорядкованості.

Висновки. Бурхливий розвиток сучасних міст, збільшення кількості транспортних засобів, розвиток нових маршрутів збільшує обсяг інформації, необхідної для аналізу та прийняття операційних рішень.
інтелектуальних інформаційних технологій. Наразі розвивається новий етап логістики, який проявляється через соціалізацію та інтелектуалізацію логістичної діяльності, що передбачає безперервний процес отримання знань, їх збільшення, перетворення та обробка для знаходження ефективної рішення в управлінні системою на даний момент часу. Тому подальший розвиток міського транспорту повинен базуватися на застосуванні комп'ютерних технологій, а саме інтелектуальних транспортних систем. Містам та іншим територіально-адміністративним одиницям доцільно розробляти свої власні підходи, що відповідають їх власним унікальним характеристикам при розвитку інформаційно-транспортних систем.

Ключові слова: логістика, інтелектуалізація, інтелектуальні технології, логістичні процеси, інтелектуальні транспортні системи.

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THEORETICAL FOUNDATIONS OF URBAN TRANSPORT AND LOGISTICS SYSTEMS INTELLECTUALIZATION

Topicality. The scientific article is devoted to a research analysis of the features of intelligent technologies use for logistics processes managing, their impact on digital transformation and modernization of logistics systems. Intellectualization is a new trend in the economic development of countries derived from smart technologies, including cloud computing, mass data and the Internet. Intelligent program services based on intelligent terminals, provided by Internet enterprises, bring an unprecedented effect and challenge in this field. The relevance of the study derived from the digital transformation both the world economy and Ukraine, in particular, and within these conditions the new information technologies and intelligent systems are being formed and applied to improve and modernize transport and logistics processes. The article deals with theoretical aspects of the logistics processes intellectualization.

Aim and tasks. The purpose of the work is to study the theoretical and methodological foundations for the implementation of the intellectualization concept for the management of urban transport and logistics systems in terms of adaptability.

Materials and methods. The work used the methods of theoretical research, namely: the method of analysis, synthesis, the method of going from the abstract to the concrete, deduction and induction, and the method of idealization was also used in the article.

Research results. During the study it was found that the features of transport and logistics systems depend on the development strategies of administrative-territorial units and the growth driver. The best countries of the world were determined by the criterion of logistics efficiency, and that made it possible to compare the results of these countries with Ukrainian indexes. Based on the results of a comparative analysis, it is substantiated that the strong position of European countries in the ranking is due to the efficient operation of their transport system and focus on the use of achievements in the field of intellectual technologies, in contrast to the weak position of Ukraine, that is due to the insufficient use of adaptive information and communication technologies in organizing of complex supply chains by subjects of transport and logistics infrastructure. The functional components and objects of intelligent transport systems are characterized. It has been established that autonomous intelligent transport systems are mainly used, which are not integrated, that, in turn, reduces their effectiveness. A theoretical and applied model for the development of urban transport and logistics systems in conditions of adaptability is built, which is based on the modern empirical and theoretical basis of the development of urban transport and logistics systems, which are influenced by the processes of globalization, socialization and intellectualization involving the use of computer, information and communication technologies when controlling vehicles and transport networks in real time. The key aspects of influence on the management of the transport system in the conditions of its socialization and intellectualization are indicated. The necessity of strategic plans and programs developing to implement the effective use of intelligent transport systems applied technologies is substantiated, that will contribute to solve the transport problems of the cities. This made it
possible to determine the main conceptual foundations for the adaptation of intelligent transport technologies to the urban logistics system, which is currently in the conditions of locality, heterogeneity, with a low level of adaptability and orderliness.

Conclusion. The rapid development of modern cities, the increase in the number of vehicles, the development of new routes increases the amount of information needed for analysis and prompt decision-making, and this, in turn, stimulates the active use of intelligent information technologies. Currently, a new stage of logistics is developing, which manifests itself through the socialization and intellectualization of logistics activities, that involves a continuous process of knowledge obtaining, its increasing, transforming and processing to find an effective solution in the system managing at a given time. Therefore, the further development of urban transport should be based on the use of computer technology, and namely intelligent transport systems. It is expedient for cities and other territorial-administrative units to develop their own approaches corresponding to their own unique characteristics in the development of information and transport systems.

Keywords: logistics, intellectualization, intelligent technologies, logistics processes, intelligent transport systems.

Problem statement and its connection with important scientific and practical tasks. Modern challenges of economic development reveal the need for a technological reboot, which is impossible without the intellectualization of all processes. One of the systems with inertial development is the transport and logistics infrastructure. Today, when humanity lives and actively uses and develops technologies, it is impossible to imagine the transport sector without them. For almost a century, advanced traffic flow control technologies have been used. Technologies are also actively used by vehicle manufacturers for their modernization and improvement. More and more technologies are being applied to large transportation systems within urban logistics systems. The intensity of development of the transport and logistics infrastructure requires the development of methodological approaches to match the model of optimal functioning.

One of the key trends in the development of a modern transport and logistics system is the complexity of objects that form and support the movement of material flows. With the human involvement into the functioning of the transport and logistics system, it is necessary to move from the organization of material, financial, information and service flows and their management to the level of intellectualization of modeling, that allows to use knowledge in the process of effective management decisions developing. When this happens the systematization and formation of these functional processes occurs. In this regard, there was a need for a reliable methodology for the economic support of logistics operations, technologies, processes, structures, management systems, as well as methods of economic analysis and a system of indicators that make it possible to assess and calculate realistically the efficiency of the transport and logistics system (Bazhan, L. I., 2016).

The organization of transport and logistics activities is a topical issue for every enterprise, company, organization. The main task of the transport and logistics system is to supply production with the necessary resources, as well as to sell products to the end consumer. Organization and control of transport and logistics processes system allows the enterprise to: ensure a high level of liquidity and profitability; maintain the required rate of raw materials supply to production facilities; promote the raw materials processing and the products sale. To achieve these goals, today there are a number of technologies used in the freight transport sector. A variety of such technologies in the scientific literature is covered by the definition of "intelligent transport systems" (ITS). Intelligent transport technologies can help to make the transport system more efficient, safer, more reliable, and reduce its negative impact on the environment.

From the beginning of the 21st century till the present day, the use of ITS to improve transport systems has passed a significant stage of development. In particular, this is very clearly demonstrated by the technologies that function through mobile phones, or GPS devices. They are used for cars, pedestrians, athletes, etc. Mobile phones are still indispensable assistants in transport and logistics systems around the world. Smart cards are a prime example of facilitating the use of transport systems in cities and simplifying of payment mechanisms for car and bicycle rental schemes in developed cities (Sayeg P. & Charles P., 2009).

Analysis of recent publications on the problem. Today, the strengthening of globalization processes in the world economy, the spread of new technologies are closely related to the commercial use of intellectual property - the growth of licensed trade, engineering, patent agreements, technologies provision, etc. The logistical problems of goods distribution and people movement, the development of the transport infrastructure of the city has been worrying mankind since ancient times. After the entrepreneurs launched inter-regional trade, people began to be interested in the issues of commodity logistics.
The logistics system of the city is a part of the urban infrastructure, characterized by significant dynamics and a single chain of its participants, which is based on the unity of transport and passenger flow management (Osipova T. A & Kuznetsova A. A., 2021). Transport and logistics system of any city which was historically formed is now becoming one of the main problems hindering the development and circulation of economic resources, that is expressed in the growth of citizens’ personal consumer spending, as well as in economic losses of enterprises and budgets of different levels. At the same time, the country’s economic losses from inefficient transport and logistics activities of the city system can reach 3.2% of GDP or more (Savin G., 2020).

The scientific literature widely represents the fundamental and applied foundations of transport and logistics systems, systematizes the types of material, financial, information and service flows, identifies the key goals for the creation and functioning of logistics systems, and investigates their structural elements. In particular, these trends can be traced in the works of Bazhan L. (Bazhan, L. I. 2016), Singh S. and Chan I. (Singh S & Chana I. 2016), Mnemne F. et al. (Mnemneh F. et.al., 2017).

The formation of new digital technologies and intelligent systems allows for transformational processes aimed at the intellectualization of transport and logistics systems. The need to develop a methodology for the formation and management of a modern transport and logistics system using the principles of intellectualization is due to social and scientific views on comfortable human development, that is associated with new trends in the development of technologies and society, as well as with the need of economocs transition to a new technological order with the priority of the logistics approach, taking into account current and prospective external and internal factors (Grigorak M. Yu., 2017). Legesy S. (Legacy C., 2017), Merineji S. et al. (Marinagi C., Trivellas P. & Sakas D. P., 2014) studied the impact of information technology on creating of competitive advantages throughout the supply chain. Baye H. (Baye, H.S., 2016) confirmed the moderating effect of logistics information systems on interorganizational collaboration and productivity. Volodkina A. with co-authors (Volodkina, A., et.al., 2022) and Fedonenko M. (Fedonenko, M.V. 2019) studied the organization of urban traffic, taking into account the tasks of intellectualization of transport infrastructure based on the symbiosis of participants within the projected multi-agent system.

Grigorak M. (Grigorak M. Yu., 2017) notes that the concept of “intellectual logistics is to consider logistics as a synthetic management tool, integrated with an end-to-end logistics flow, aimed at optimizing of flow processes which are organized in the form of logistics systems, logistics chains or logistics networks, to achieve the tasks in hand and mutual value creating for all parties involved.” The key feature in this concept is the integration of individual links by the effective use of information exchange by interacting subjects of economic relations. It is the creation of new knowledge that is the main asset of any subject of economic relations, and their active implementation is the main aspect of intellectualization.

Allocation of previously unsolved parts of the general problem. The development of an efficient transport and logistics system of the city is significantly influenced by negative external effects caused by the fact of active "consumption" of the city territory, industrial enterprises and the population, including the aggravation of environmental problems, their congestion with the transport network and the growth of intracity, transport and logistics costs. And all these aspects must be taken into account when developing models for optimizing the transport and logistics systems of cities (Savin G. 2020, Mneimneh F., Srour I., Kaysi I., Harb M., 2017, Grigorak M. Yu., 2017, Fedonenko, M.V. 2019, Næss, P., Naglie, I.-L., Richardson T., 2020, Sultana S., Salon D., Kuby M. 2019).

Classical models for optimizing of the logistics systems functioning do not reflect the costs and losses of a human, in essence, separately considering the process of functioning of logistics systems, supply chains, excluding it from consideration. By introducing a person into the context of considering the functioning of logistics systems, from the issues of flows organizing and their managing, we rise to the level of intellectual activity in the search for effective management models. Known flows in logistics are complemented by intelligent flows, i.e. the level of awareness of logistics production processes is assessed from the standpoint of intelligent processing, that is primarily related to management and decision-making in intelligent logistics. And all these aspects must be taken into account when developing models for optimizing the transport and logistics systems of the cities.

Therefore, taking into account the existing achievements and taking into account the significant contribution of scientists to the development of the main provisions of transport
logistics, additional research requires a theory and methodology for the formation and functioning of intelligent flows in the transport and logistics system and their use in the process of its managing.

**Formulation of research objectives (problem statement).** The aim of the work is to study the theoretical and methodological foundations to implement the intellectualization concept for the management of urban transport and logistics systems in terms of adaptability.

**Materials and methods.** The main general scientific methods used at the theoretical level of research can include the following methods: analysis and synthesis, induction and deduction, ascent from the abstract to the concrete, idealization and formalization, axiomatic method, systematic approach.

Analysis is a method of scientific research by decomposing a subject on the component, while the synthesis is a combination of those obtained during the analysis parts to the whole. Methods of analysis and synthesis in scientific creativity are organic and interconnected and can take different forms depending on properties of the object under study, the purpose of the study, the degree of knowledge object, the depth of penetration into its essence.

The method of going from the abstract to the concrete is general the form of the movement of scientific knowledge is a reflection of reality in thinking. According to this method, the process of cognition seems to be divided into two relatively independent stages: the first stage – from sensory-specific to his abstract definitions; the second stage is the descent from the abstract definitions of the object to the concrete in cognition.

A mental construction in which a conclusion about some element of the set is made on the basis of knowledge general properties of the whole set. The content of deduction as a method knowledge is the use of general scientific provisions in research specific phenomena.

Induction means the transition from the partial to the general when a conclusion is made on the basis of knowledge about part of the class subjects in relation to the class as a whole. Deduction and induction are mutually opposite methods of cognition.

The method of idealization is the mental construction of objects that do not exist in realities or which are practically impossible. The purpose of idealization: to deprive real objects of some of their inherent properties and endow (mentally) these objects with certain unreal and hypothetical properties (S.Vazhynskyi, T. Shcherbak., 2016, Yatskevich, I.V., Maslii, N.D., 2021).

**An outline of the main results and their justification.** The peculiarity of transport and logistics systems is determined by a number of factors which depend on the chosen strategy for the development of the country's administrative and territorial units and growth key driver. The effectiveness of the models of the transport and logistics infrastructure development of different countries is confirmed by their positions in the logistics performance rating (LPI – LogisticsPerformanceIndex), that is a system of indicators and allows to compare countries according to six parameters and a general index. LPI is calculated as the weighted average value of the country according to the following key parameters (World Bank Group. 2007, 2010, 2012, 2014, 2016, 2018):

1) efficiency of the registration process (i.e. speed, simplicity and predictability of formalities) by the border control authorities, including customs;
2) quality of trade and transport infrastructure (for example, ports, railways, roads, information technologies);
3) simplicity of organization of delivery at competitive prices;
4) competence and quality of logistics services (for example, transport operators, customs brokers);
5) the ability to track cargo;
6) timeliness of goods shipment to the destination within the planned or expected delivery time.

The list of countries with the highest evaluation of logistics efficiency and Ukraine during 2012, 2014, 2016 and 2018 is presented in Table 1.

According to the results of the rating, the top ten countries with the most efficient transport and logistics system include the vast majority of European countries, Ukraine takes only the 66th place out of 160. The strong position of European countries in the rating is due to the efficient operation of their transport system and focus on the use of achievements in the field of intellectual technologies. The weak position of Ukraine in the field of logistics development is due to the insufficient use of adaptive information and communication technologies in the organization of complex supply chains by subjects of transport and logistics infrastructure. Therefore, one of the important directions for the economic development of the country as a whole is adherence to the trends of intellectualization of the transport and logistics system of the cities, which is understood as a continuous process of information obtaining,
its increase, transformation and processing in order to find the optimal solution in the management of transport and logistics systems at a given time.

The origin of intelligent transportation systems dates back to the 1960s when the Electronic Route Navigation System was developed in the USA. However, the World Congress in Paris in 1994 accelerated the development and deployment of intelligent transportation systems to improve traffic management systems around the world. Since then, numerous ITS programs have been developed by various organizations around the world and customized to suit specific needs. It has become a global phenomenon that has captured the attention of the automotive industry and transportation professionals as well as political decision makers (Gritsenko, S.I., Vinichenko, I. A. 2020).

### Table 1

<p>| List of countries with high evaluation of logistics efficiency and Ukraine, rating |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|</p>
<table>
<thead>
<tr>
<th>Country</th>
<th>LPI</th>
<th>Custom</th>
<th>Infra-structure</th>
<th>International transportation</th>
<th>Quality and competence of logistics</th>
<th>Tracking and tracing</th>
<th>Timeliness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ukraine</td>
<td>3.90</td>
<td>4.02</td>
<td>4.01</td>
<td>4.01</td>
<td>4.02</td>
<td>4.01</td>
<td>4.01</td>
</tr>
<tr>
<td>2012</td>
<td>2.98</td>
<td>4.13</td>
<td>4.00</td>
<td>4.00</td>
<td>3.99</td>
<td>4.00</td>
<td>4.00</td>
</tr>
<tr>
<td>2014</td>
<td>2.74</td>
<td>4.19</td>
<td>4.01</td>
<td>4.01</td>
<td>4.00</td>
<td>4.01</td>
<td>4.01</td>
</tr>
<tr>
<td>2016</td>
<td>2.83</td>
<td>4.09</td>
<td>4.00</td>
<td>4.00</td>
<td>4.01</td>
<td>4.01</td>
<td>4.01</td>
</tr>
</tbody>
</table>


ITS includes developments in information technology, computing and telecommunications, together with knowledge in the transport sector. It can be said that intelligent transport systems are the combination and application of computer, information and communication technologies to control vehicles and transport networks in real time (Sayeg P., Charles P. 2009). Given that the structure of information and telecommunication technologies foresees the directions of development, planning and their use. In general, the national logistics structure defines the types of activities and functions which are necessary for the provision of ITS user services organized as nine directions of functional processes (Figure 1). They cover all functional elements (Sayeg P., Charles P. 2009): traffic management, commercial vehicle management, their monitoring and control, transit
traffic management, emergency management, driver and travel services, electronic payment services, data archiving, and maintenance and construction management.

The latest technologies in the field of communication play a significant role in stimulating the development in the application of ITS. They cover the areas of the communications, multimedia, Internet, wireless communications, director and sensor systems, vehicle tracking systems, ways of communications with the vehicle and infrastructure, etc. These technologies contribute to the collection and dissemination of information in real time. According to research results (Gritsenko, S.I., Vinichenko, I. A. 2020), the global market of intelligent transport systems by 2026 may reach about $78 billion USD, and in the forecast period from 2019 to 2026 it will grow at an average annual growth rate of about 12%.

In general, until today, among ITS technologies, the autonomous systems developed by various organizations are mainly used. And this is the reason that they are not integrated into a single system and do not interact with each other, and this reduces their effectiveness. This is often due to the fact that ITS systems have been associated with large infrastructure projects and there is no strategic framework for planning and using ITS (Sayeg P., Charles P. 2009).

<table>
<thead>
<tr>
<th>Functional elements</th>
<th>Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensuring of control and monitoring for vehicles</td>
<td>Vehicle monitoring status; automatic control of the vehicle; automatic danger notification</td>
</tr>
<tr>
<td>Urban transportation management</td>
<td>Urban vehicles; services of making plan and schedule for urban transportation; urban vehicles maintenance; safety and coordination of urban transportation; toll collection; work schedules of urban vehicles operators; road facilities nearby for travelers</td>
</tr>
<tr>
<td>Services management in emergency situations</td>
<td>Emergency service location; vehicles for emergency situations; law enforcement structures location; disaster response and evacuation</td>
</tr>
<tr>
<td>Providing of services to drivers and travelers</td>
<td>Travel planning services; data about the services of the Internet service provider; services for travelers by kiosks; joint trips; information services for travelers; routing and route determination services; personal driver services; personal traveler service</td>
</tr>
<tr>
<td>Archived data management</td>
<td>Card interfaces for travel; centralized payment processing; electronic payment collection; electronic payment for parking; electronic payment</td>
</tr>
<tr>
<td>Provision of electronic payment services</td>
<td>Vehicles with microcomputers; activities on the road with microcomputers; working areas; information about the environment</td>
</tr>
<tr>
<td>Provision of electronic payment services</td>
<td>Intersections of highways with railway tracks; emissions; travel demand; emergency situations; traffic control; device control</td>
</tr>
<tr>
<td>Traffic control</td>
<td>Cargo data available on board; administration; data collection; motorway facilities; driver; transport fleet</td>
</tr>
<tr>
<td>Management of vehicles for cargo and commercial transportation</td>
<td></td>
</tr>
</tbody>
</table>

*Fig. 1. Functional components and objects of intelligent transport systems

Source: formed on the basis of data Sayeg P., Charles P. 2009*

Thus, systematizing the conducted studies, it is advisable to build a theoretical and applied model for the development of urban transport and logistics systems in the conditions of adaptability inherent in modern times (Fig. 2). This model is based on the modern empirical theoretical basis for the development of urban transport and logistics systems, which are influenced by the processes of
globalization, socialization and intellectualization involving the use of computer, information and communication technologies when controlling vehicles and transport networks in real time.

Usually within the same country, it is can be identified the significant differences in transport logistics and ITS application, as small cities have different characteristics and needs in comparison with large cities. However, now in the management of the transport system, which activities manifest the processes of socialization and intellectualization, the following key aspects of influence can be identified:

- increasing of intellectual resources role in the creation of a competitive development strategy of the company, city, region and country as a whole;
- change of the vector for labor products from material to intellectual;
- increasing of the level of education, spirituality and enterprises social orientation.

In order to apply ITS applications effectively, above all it is necessary to develop a strategic plan and implementation programs. Their implementation will provide significant benefits and the highest efficiency of ITS when solving the transport needs of any city. This is very important because often ITS equipment is used in the most simple way, such as collecting information without its proper processing and use. The new systems are not well integrated into the previous transport and logistics systems. Often ITS are not compatible with each other. Accordingly, uniform specification standards are needed to encourage wider use of ITS. National strategies and standards for the development of ITS are still actively developing today, but even in those developed countries where significant progress has already been made at the national level, standards and protocols of the city level are just beginning to appear.

Fig. 2. Theoretical and applied model of urban transport and logistics systems development in conditions of adaptability

Source: constructed by the authors
Summarizing, it should be noted that the adaptation of intelligent transport technologies to the urban logistics system is based on such basic conceptual foundations as: widespread use of the Internet and web technologies; functioning within the target parameters for reducing transport loading and travel time; synergistic effect from wide participation in the system of all involved actors; timely response to traffic conditions changing; mutual participation of citizens and administration in the regulation of the traffic situation; development of social capital; open architecture of ITS depending on changes in science and technology. The applied information technologies in the field of logistics in Ukraine are at the stage of transformation, transition to international standards and norms for the formation of transport and logistics databases and communication systems and are characterized by locality, heterogeneity, low adaptability and orderliness level.

Conclusions and perspectives of further research. Summing up, it should be noted that the rapid development of modern cities, the vehicles quantity increase in the streets, the development of new routes increases the amount of information needed for analysis and prompt decision-making. This, in turn, gives an impetus to the active introduction of intelligent information technologies.

And today the information component has become an integral part of the urban life. Today we can say that a new stage in the development of logistics has begun. This stage is manifested by the socialization and intellectualization of logistics activities, that provides a continuous process of knowledge obtaining, its increasing, transforming and processing to find an effective solution in managing of the system for the time being. These processes are characterized by the following key aspects: increasing of intellectual resources role in creation of a competitive development strategy for a company, city, region and country as a whole; change in the vector for labor products from material to intellectual; increasing of the level of education, spirituality and enterprises social orientation. Therefore, the further development of urban transport should be based on the use of computer technology, namely intelligent transport systems. It is advisable for cities and other territorial-administrative units to develop their own approaches that meet their own unique characteristics during the development of information and transport systems.

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