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The State of the World Transport and Logistics Infrastructure and Transport and Logistic Services Market

The research provides an overview of the state of the world transport and logistics infrastructure and transport and logistic services market. Globalisation of international economic relations imposes new requirements on the efficiency of transport and logistics infrastructure. The author studies the current state of the objects of world transport and logistics infrastructure, defines their essence and elaborates on their structure. The paper examines main trends in transport and logistics infrastructure development in recent years, paying special attention to the infrastructure objects of the rail transport, container transport as well as to port development. The author scrutinises the state and structure of the global transport and logistic services market, gives its geographical and product structure, and discovers the reasons behind the changes in the market structure.

JEL classification: N70, O18, R40

Keywords: transport and logistics infrastructure; transport and logistic services; market; trend; global economy.

Introduction

World transport and logistics infrastructure and transport and logistic services market are developing in conditions of international integration processes. The impact of these processes on freight traffic is linked with countries' aspirations for more complete integration and manifests itself in creation of unified transport and logistic systems.

Multiple economic relations between countries kindle their mutual interest in building efficient integrated transport and logistics infrastructure with elements standardized to a maximum. Such kind of transport and logistics infrastructure should satisfy the requirements of high capacity and acceptable level of organisation and maintenance of the functioning of supply channels.

Among the studies exploring the issues of changing role of transport and logistic systems we can point to the works by T. Ye. Yevtodieva, Ye. Ya. Gyunter, I. Yu. Stolbova and I. P. Makhova, A. V. Dementyeva, I. S. Korodyuk, O. A. Freydmann, G. M. Kharisova, A. Ye. Emirova and others [2–4; 9; 14–16].

Problems and prospects of development of the world and transport and logistic services market are investigated by foreign scholars J. Pradabwong, C. Braziotis, K. S. Pawar, S. Vendela, T. Erfurth, J. Bendul, Yi-Chih Yang, Chi-Yu Sung, M. M. Pentead Marchesini, R. L. Chicarelli Alcantara, Y.-J. Seo, J. Dinwoodie and M. Roe and others [19; 22–26].

Recently more attention has been directed to the research of the trends in development of the world transport and logistics infrastructure and transport and logistic services market, for instance, by such economists as A. V. Vlasov, M. V. Zhabolenko, V. A. Karasev, V. V. Klimenko, V. O. Kozhina, M. M. Kuznetsov, M. A. Kuzmina, Yu. P. Mironova and S. L. Nadiryan, N. N. Panasenko and P. V. Yakovlev and others [1; 5; 6–8; 10; 11; 13].

The goal of this paper is to assess the current state of the objects of the world transport and logistics infrastructure and analyse the transport and logistic services market. To achieve this goal the author is going to fulfil the following three tasks: first, to study main factors in transformation of the world transport and logistics infrastructure; second, to examine the condition of the objects of the world transport and logistics infrastructure; third, to justify the reasons behind the changes in the structure of the world transport and logistic services market.

Essence of the objects of transport and logistics infrastructure

We regard transport and logistics infrastructure as a set of objects of transport and logistics subsystem of the national economy united by common tasks, processes and functions and forming single transport and logistic infrastructural space. Fig. 1 presents the author's view of the structure of the objects of transport and logistics infrastructure at macro-level.

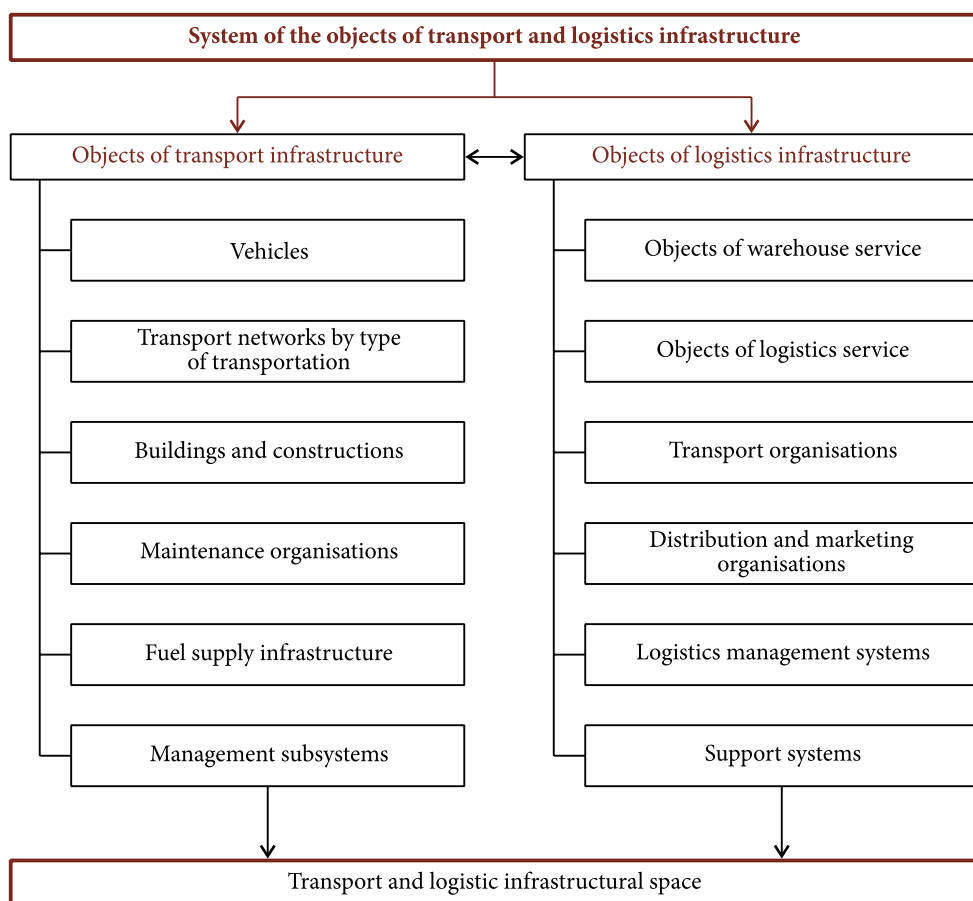


Fig. 1. Structure of the objects of transport and logistics infrastructure

As it was mentioned previously, the processes of international economic integration have developed into one of the major factors in transformation of the global transport and logistics system. Along with this factor there are some others, which can be grouped into four types: economic, institutional, technological and environmental [17]. The cumulative impact of these factors on development of the transport and logistic services market has become increasingly visible in past decades. In this context, let us consider the key indicators characterizing the

state of the world transport and logistics infrastructure and, particularly, the state of transport networks and vehicles, which constitute one of its principal elements.

State of the objects of world transport and logistics infrastructure

Growth in the volume of the foreign trade and domestic trade in the world has led to a respective increase in total length of railway lines (Fig. 2).

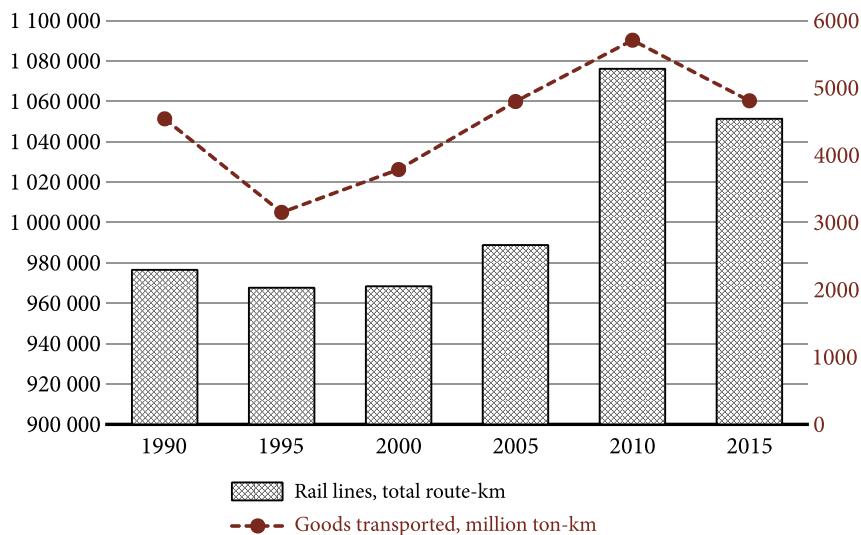


Fig. 2. Changes in total length of railway lines and volume of goods transported by rail in the world, 1990–2015¹

The total length of railway lines, which is one of the main objects of the transport and logistics infrastructure, started to decrease in 2010, as well as the volume of goods transported by this means of transport. These trends can be attributed to a decline in volume of transportation in the European countries and the USA and to a shift in the demand in transport and logistics services market from rail to other types of transport, particularly to container transport [18]. In addition, the trends were significantly brought about by an altered geographical structure of the world trade, namely by a shift towards the countries of Asia-Pacific that was followed by changes in routes and means of freight transport.

Since 2000, the world has been observing a steady growth in container traffic (Fig. 3).

In 2014, around 679.2 million containers (in 20 foot equivalent units) were transported in the world. The transport structure is changing in favour of the Asia-Pacific countries, which account for 55% of the world's container traffic (Fig. 4).

Eight out of the top ten ports involved in container traffic are located in Asia-Pacific, of which six are situated in China (Table 1).

The next most important means of freight transport globally is air transport. Fig. 5 presents the dynamics of air freight transport in 2010–2015. Air transport infrastructure is a growing segment of the world transport and logistics infrastructure. In 2015 the number of registered carrier departures amounted to 32.9 million units and the volume of freight transported by air reached 188 million ton-km.

¹ Note. Data for rail lines (total route-km) from the World Bank. Available at: <http://data.worldbank.org/indicator/IS.RRS.TOTL.KM>; for railways, goods transported (million ton-km) from the World Bank. Available at: <http://data.worldbank.org/indicator/IS.RRS.GOOD.MT.K6>.

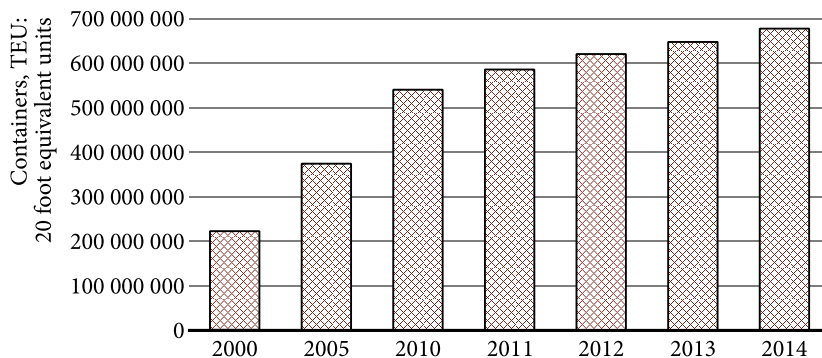


Fig. 3. World container traffic, 2000–2014¹

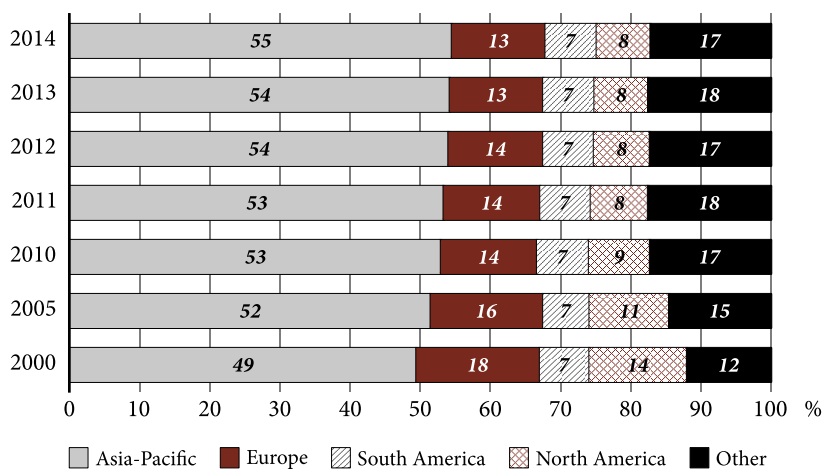


Fig. 4. Changes in the geographical structure of container traffic by regions, 2000–2014, %²

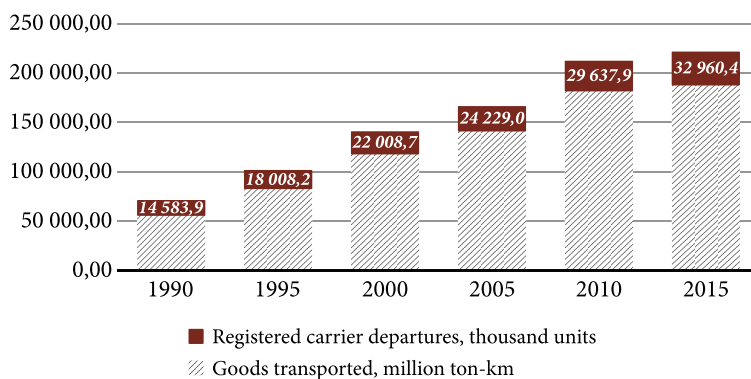


Fig. 5. Air freight transport worldwide, 2010–2015³

¹ Note. Data for container port traffic (TEU: 20 foot equivalent units) from the World Bank. Available at: <http://data.worldbank.org/indicator/IS.SHP.GOOD.TU>.

² Ibid.

³ Note. Data for air transport, freight (million ton-km) from the World Bank. Available at: <http://data.worldbank.org/indicator/IS.AIR.GOOD.MT.K1>; for air transport, registered carrier departures worldwide from the World Bank. Available at: <http://data.worldbank.org/indicator/IS.AIR.DPRT>.

Table 1

Top ten ports by container traffic volume, million TEU

Rank	Port	2011	2012	2013	2014	2015
1	Shanghai, China	31.7	32.5	33.62	35.3	36.5
2	Singapore	29.9	31.7	32.6	33.9	30.9
3	Shenzhen, China	22.6	22.9	23.28	24.0	24.2
4	Ningbo-Zhoushan, China	14.7	16.8	17.3	19.5	20.6
5	Hong Kong, S.A.R., China	24.4	23.1	22.4	22.2	20.1
6	Busan, South Korea	16.2	17.0	17.69	18.7	19.5
7	Qingdao, China	13.0	14.5	15.52	16.6	17.5
8	Guangzhou Harbor, China	14.4	14.7	15.31	16.2	17.2
9	Jebel Ali, Dubai, United Arab Emirates	13.0	13.3	13.64	15.3	15.6
10	Tianjin, China	11.6	12.3	13.01	14.1	14.1

Source: Top-50 World Container Ports. Available at: <http://www.worldshipping.org/about-the-industry/global-trade/top-50-world-container-ports>.

State of the world transport and logistic services market

The state of the objects of the world transport and logistics infrastructure directly and indirectly affects the development of the world transport and logistic services market. Speaking about the direct impact, it is manifested in creation of the new segments of entrepreneurial activities in the field of transport and logistics, whereas the indirect impact is seen in encouraging the development of diverse forms of entrepreneurship in different countries of the world [20].

Recent years have witnessed the formation of an independent direction of entrepreneurship in the field of transport and logistics, namely provision of transport and logistic services (outsourcing of transport and logistic services). The market of these services has been expanding steadily since 2009 and in 2015 its size reached 4.5 billion US dollars (Fig. 6).

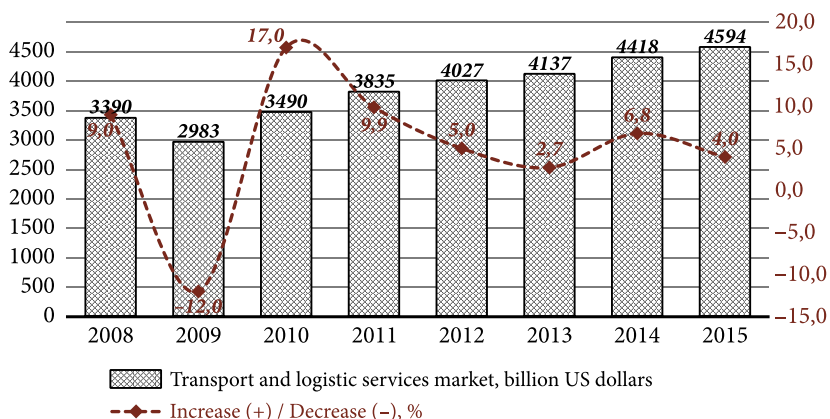


Fig. 6. World transport and logistic services market, 2008–2015¹

The growth in the world transport and logistic services market is mostly attributed to the formation of the new market of integrated logistics solutions (Fig. 7).

¹ Source: Transport and logistic services market. The impact of sanctions and recession. M. A. Research. Available at: <http://ma-research.ru/prezentatsii-i-vystupleniya/item/82-rynok-transportno-logisticheskikh-uslug-vliyanie-sanktsij-i-retsessii.html> (in Russ.)

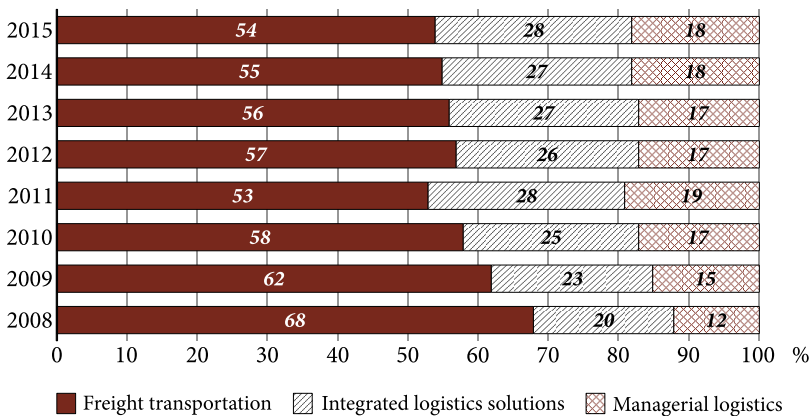


Fig. 7. Structure of the world transport and logistic services market by types of logistic operations, 2008–2015, %¹

According to the generally accepted classification, there are several levels of transport and logistics services (Table 2) and, respectively, segments of entrepreneurial activities in the field of transport and logistics [3; 12].

Table 2

Characteristics of the levels of transport and logistics services

Level	Characteristics
1PL (First Party Logistics) – “autonomous logistics”	Freight owner independently performs basic logistics operations, using, as a rule, its own vehicles and its own drivers
2PL (Second Party Logistics) – “traditional logistics” or partial outsourcing of logistic services	The company performs part of the logistics functions (planning, warehousing, forming supply chains), but some of the functions are transferred to a third-party transportation organisation, since the company does not have its own vehicles. The contractor is a transport company that performs a limited set of functions and has a limited region of transportation
3PL (Third Party Logistics) – complex logistics outsourcing	This type of services refers to a complex of the transport and logistic services performed by 3PL providers, which are specialised companies and to which all or most of the logistics operations are transferred. 3PL providers are highly qualified companies having their own specialists with appropriate professional competence. 3PL providers are not involved in planning of the whole logistics chain of a client and are not included in the client’s economic activities. The company provides a complex of transport and logistic services, including transportation, warehousing, inventory management, packaging and freight forwarding
4PL (Fourth Party Logistics) – integrated logistics outsourcing	A complex of the transport and logistic services, which implies that the manufacturing company expands the range of the contractor’s responsibilities and assigns the tasks of designing and planing supply chains and managing logistics business processes to a third party
5PL (Fifth Party Logistics) – virtual logistics	Provision of a complex of the transport and logistic services, including, in addition to 4PL complex, online business services (eBay, Aliexpress, Amazon, etc.)

¹ Source: Transport and logistic services market. The impact of sanctions and recession. M. A. Research. Available at: <http://ma-research.ru/prezentatsii-i-vystupleniya/item/82-rynok-transportno-logicheskikh-uslug-vliyanie-sanktsij-i-retsessii.html> (in Russ.)

Fig. 8 shows that in the previous years there has been a steady growth of 3PL logistic services. The share of this type of transport and logistic services increased up to 17.4% in 2015, and its volume reached 768 billion US dollars.

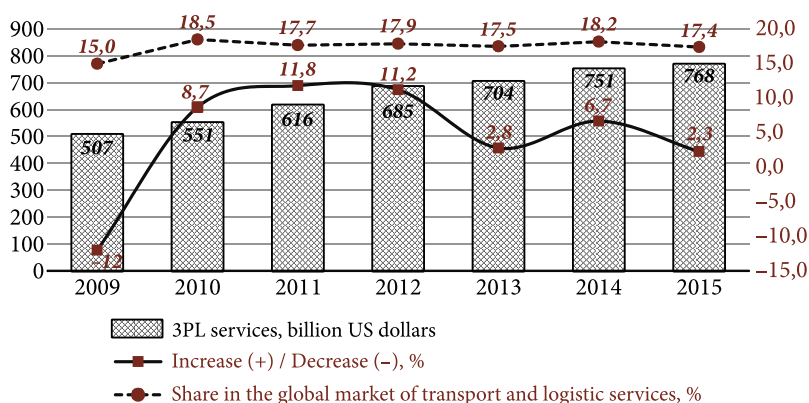


Fig. 8. World market of 3PL services and their role in the global market of transport and logistic services, 2008–2015¹

We can anticipate further growth of this type of transport and logistics services in the coming years due to the desire of large producers to transfer non-core activities to outsourcing.

The largest segment of the world market of 3PL services are the countries of the Asia-Pacific region (Table 3).

Table 3
Geographical structure of the world transport and logistic services market and 3PL services

Region	GDP, billion US dollars	Share of transport and logistic services in GDP, %	Logistic services, billion US dollars	Share of 3PL services in transport and logistic services market, %	3PL services, billion US dollars
North America	20.7	8.6	1.75	10.7	190.1
Europe	16.1	9.2	1.47	10.5	154.5
Asia-Pacific	23.8	13.5	3.29	8.5	276.9
South America	3.4	11.9	0.41	8.6	35.3
Other regions	9.9	17.5	1.74	3.7	64.2
Total	73.9	11.7	8.66	8.2	721

Based on: Global 3PL Market Size Estimates. Armstrong & Associates. Available at: <http://www.3pllogistics.com/3pl-market-info-resources/3pl-market-information/global-3pl-market-size-estimates>.

The state of the logistics infrastructure has a direct impact on the development of business. This is proved by the data on the distribution of the world's leading countries in terms of the level of development of transport and logistics infrastructure (Logistics Performance Index (LPI index)), the level of business development (Ease of Doing Business (DB index)) and GDP in Fig. 9.

¹ Source: Transport and logistic services market. The impact of sanctions and recession / M. A. Research. Available at: <http://ma-research.ru/prezentatsii-i-vystupleniya/item/82-rynok-transportno-logisticheskikh-uslug-vliyanie-sanktsij-i-retsessii.html> (in Russ.)

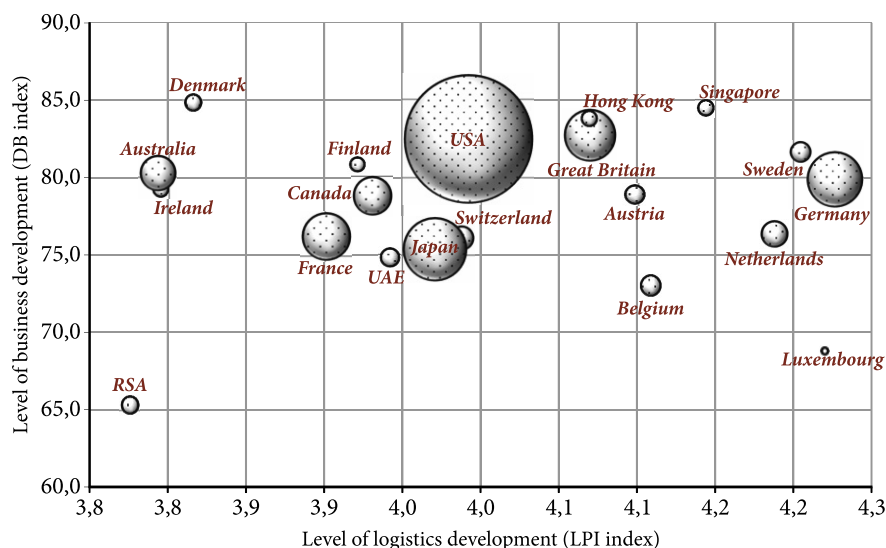


Fig. 9. Distribution of the leading countries in terms of the level of development of transport and logistics infrastructure (LPI index), the level of business development (DB index) and GDP¹

Comparison of the data on the development of the transport and logistics infrastructure and the level of development of conditions for carrying out business activities in the world's leading countries demonstrates a strong correlation between them. Fig. 9 also includes the information about the size of GDP of the group of countries selected on the basis of the level of development of business activities and transport and logistics infrastructure.

Conclusion

Thus, being considered at international level the logistics infrastructure and the transport and logistic services market directly affect the level of the countries' economic development. Expansion of the range of services, as well as use of modern warehouse, transport, information and communication systems create conditions for the development of entrepreneurship.

This study allowed providing a comprehensive assessment of the transport and logistics conditions for the development of entrepreneurship and can be used for examining the relationship between the development of transport and logistics infrastructure and the development of entrepreneurship. Analysis of the data on the conditions for doing business in different countries gives us grounds to conclude that they are related to the indicators of the state of the logistics infrastructure.

The final point to stress is that the state of transport and logistics infrastructure and the transport and logistic services market is the most important factor and driver of the development of entrepreneurship in the world's leading countries. Although being highly dynamic, the current rates of development of the transport and logistics infrastructure are not enough to meet the world's demand for the movement of goods. In the long term, the segment of integrated logistics solutions is likely to grow, triggered by companies' desire to transfer non-core functions to third parties.

¹ Note. Data for DB index from Doing Business 2016. Measuring Regulatory Quality and Efficiency from the World Bank. Available at: <http://www.doingbusiness.org/reports/global-reports/doing-business-2016>; for GDP (current US dollars) from the World Bank. Available at: <http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>; for LPI index from International LPI global ranking from the World Bank. Available at: <http://lpi.worldbank.org/international/global/2016>.

References

1. Vlasov A. V., Didenko O. V. Problemy razvitiya tamozhennykh uslug i transportno-logisticheskikh sistem v usloviyakh globalizatsii mirovoy ekonomiki (na primere stran tamozhennogo soyuza) [Problems of development of customs services and transport and logistics systems in the context of globalisation of the world economy (at the example of the countries of the customs union)]. *Uchenye zapiski Rossiyskoy Akademii predprinimatelstva – Scientific Notes of the Russian Academy of Entrepreneurship*, 2014, no. 40, pp. 122–130.
2. Gyuntner Ye. Ya., Stolbova I. Yu., Makhova I. P. Geoekologicheskie usloviya transformatsii transportno-logisticheskoy sistemy petersburgskogo regiona [Geo-ecological conditions for the transformation of the transport and logistics system of the Saint Petersburg region]. *Izvestiya Rossiyskogo gosudarstvennogo pedagogicheskogo universiteta im. A.I. Gertsena – Izvestia: Herzen University Journal of Humanities & Science*, 2012, no. 153-2, pp. 52–57.
3. Demytyev A. V. *Kontraktynaya logistika* [Contract logistics]. Saint Petersburg: Knizhnyy Dom Publ., 2013.
4. Yevtodieva T. Ye. *Razvitie form organizatsii logistiki: teoriya i metodologiya. Diss. dokt. ekon. nauk* [Development of forms of logistics organization: Theory and methodology. Dr. econ. sci. diss.]. Samara, 2012.
5. Zhabolenko M. V. Tendentsii razvitiya mezhdunarodnogo rynka transportno-logisticheskikh uslug [Trends in the development of the international market of transport and logistics services]. *Vestnik Donetskoy akademii avtomobilnogo transporta – Bulletin of the Donetsk Academy of Automobile Transport*, 2015, no. 3, pp. 4–10.
6. Karasev V. A. *Globalizatsiya rynka transportnykh uslug i transportno-logisticheskikh sistem v mirovoy ekonomikev. Diss. kand. ekon. nauk* [Globalisation of the market of transport services and transport-logistical systems in the world economy. Cand. econ. sci. diss.]. Moscow, 2008.
7. Klimenko V. V. Tendentsii formirovaniya logisticheskoy infrastruktury transportnykh uzlov [Trends in formation of logistic infrastructure of transport hubs]. *Logistika i upravlenie tsepyami postavok – Logistics and Supply Chain Management*, 2012, no. 2 (49), pp. 57–64.
8. Kozhina V. O. Globalizatsiya transportnoy sistemy v mirovoy ekonomike [Globalization of the transport system in the global economy]. *Novaya nauka: Opyt, traditsii, innovatsii – New Science: Experience, Traditions, Innovations*, 2016, no. 4-1 (77), pp. 83–86.
9. Korodyuk I. S., Karkhova S. A. *Regional'nye transportno-logisticheskie sistemy: voprosy teorii i praktiki* [Regional transport and logistics systems: Theory and practice]. Irkutsk: Baikal State University, 2008.
10. Kuznetsov M. M., Borisov A. V., Tikhonov D. A. Transportno-logisticheskoe vzaimod-eystvie stran v kontekste mirovoy trgovli [Transport-logistical interaction of countries in the context of world trade]. *Uchenye zapiski Krymskogo federalnogo universiteta imeni V.I. Vernadskogo. Ekonomika i upravlenie – Scientific Notes of V.I. Vernadsky Crimean Federal University. Economics and Management*, 2014, vol. 1, no. 27 (66), pp. 58–74.
11. Kuzmina M. A., Mironova Yu. P., Nadiryayn S. L. Rol' koordinatsionno-logisticheskikh tsentrov v sfere mezhdunarodnykh perevozok [The role of coordination and logistics centers in the sphere of international transport]. *Nauchnye trudy Kubanskogo gosudarstvennogo tekhnologicheskogo universiteta – Scientific works of KubSTU*, 2016, no. 13, pp. 218–224.
12. Mamaev E. A., Chebotareva Ye. A. *Logisticheskie provaydery v transportnoy sisteme* [Logistic providers in the transport system]. Rostov-on-Don: Rostov State Transport University, 2011.
13. Panasenko N. N., Yakovlev P. V. Konteynerizatsiya mezhdunarodnoy transportnoy sistemy [Containerisation of the international transport system]. *Vestnik Astrakhanskogo gosudarstvennogo tekhnicheskogo universiteta. Seriya: Morskaya tekhnika i tekhnologiya – Vestnik of Astrakhan State Technical University. Series: Marine Engineering and Technologies*, 2016, no. 4, pp. 103–116.

14. Freydmann O. A. Transformatsiya transportno-logisticheskoy sistemy kak uslovie ustoychivogo razvitiya regiona [Transformation of the transport and logistics system as a condition for sustainable development of the region]. *Izvestiya Irkutskoy gosudarstvennoy ekonomicheskoy akademii – Izvestiya of Irkutsk State Economics Academy*, 2016, vol. 26, no. 4, pp. 557–565.

15. Kharisova G. M. *Transformatsiya regional'nogo ekonomicheskogo prostranstva na osnove razvitiya infrastruktornogo kompleksa. Diss. dokt. ekon. nauk* [Transformation of the regional economic space on the basis of the development of the infrastructure complex. Dr. econ. sci. diss.]. Kazan, 2012.

16. Emirova A. Ye. Transformatsiya transportnykh sistem v usloviyakh globalizatsii mirovoy ekonomiki [Transformation of transport systems in the context of the globalisation of the world economy]. *Nauchnyy zhurnal NIU ITMO. Seriya "Ekonomika i ekologicheskiy menedzhment" – Scientific Journal of Saint Petersburg National Research University of Information Technologies, Mechanics and Optics. Series "Economics and Environmental Management"*, 2014, no. 2. Available at: <http://economics.ihbt.ifmo.ru/file/article/11160.pdf>.

17. Barnhart C., Fearing D., Odoni A. et al. Demand and Capacity Management in Transportation. *EURO Journal on Transportation and Logistics*, 2012, vol. 1, issue 1-2, pp. 135–155.

18. Cappuccilli Jf., Douet M. A Review of Short Sea Shipping Policy in the European Union. *Journal of Transport Geography*, 2011, vol. 19, no. 4, pp. 967–976.

19. Erfurth T., Bendul J. Transportation Time and Reliability in Intermodal Transport Chains. *International Journal of Transport Economics*, 2017, vol. XLIII, no. 2, pp. 257–271.

20. Kum F. Y., Vinh T. Barriers to Supply Chain Integration in the Maritime Logistics Industry. *Maritime Economics & Logistics*, 2017, vol. 19, issue 3, pp. 551–572.

21. Lopez-Navarro M. A. The Effect of Shared Planning by Road Transport Firms and Shipping Companies on Performance in the Intermodal Transport Chain: The Case of Ro-Ro Short Sea Shipping. *European Journal of Transport and Infrastructure Research*, 2013, issue 13(1), pp. 39–55.

22. Penteado Marchesini M. M., Chicarelli Alcantara R. L. Logistics Activities in Supply Chain Business Processes: A Conceptual Framework to Guide their Implementation. *The International Journal of Logistics Management*, 2016, vol. 27, issue 1, pp. 6–30.

23. Pradabwong J., Braziotis C., Pawar K.S. et al. Business Process Management and Supply Chain Collaboration: A Critical Comparison. *Logistics Research*, 2015, vol. 8, no. 6, pp. 127–146.

24. Seo Y.-J., Dinwoodie J. and Roe M. Measures of Supply Chain Collaboration in Container Logistics. *Maritime Economics & Logistics*, 2015, vol. 17, issue 3, pp. 292–314.

25. Vendela S. Towards More Efficient Logistics: Increasing Load Factor in a Shipper's Road Transport. *The International Journal of Logistics Management*, 2017, vol. 28, issue 2, pp. 228–250.

26. Yi-Chih Yang, Chi-Yu Sung. Service Quality Improvement Strategies for Liner-Carrier-Based Global Logistics Companies. *International Journal of Shipping and Transport Logistics*, 2016, vol. 8, no. 4, pp. 456–487.

Состояние мировой транспортно-логистической инфраструктуры и рынка транспортно-логистических услуг

П. Х. Азимов

Статья посвящена исследованию современного состояния объектов мировой транспортно-логистической инфраструктуры и рынка транспортно-логистических услуг. Уточняются содержание и структура объектов транспортно-логистической инфраструктуры. Проведен анализ основных тенденций развития транспортно-логистической инфраструктуры, железнодорожного транспорта, мировых контейнерных перевозок. Анализируется состояние мировой портовой инфраструктуры как части международной транспортно-логистической инфраструктуры. Представлена географическая и продуктовая структура мирового рынка транспортно-логистических услуг. Обоснованы причины, оказавшие влияние на изменение структуры мирового рынка транспортно-логистических услуг.

Ключевые слова: транспортно-логистическая инфраструктура; транспортно-логистические услуги; рынок; тенденции; мировая экономика.

Источники

1. Власов А. В., Диденко О. В. Проблемы развития таможенных услуг и транспортно-логистических систем в условиях глобализации мировой экономики (на примере стран таможенного союза) // Ученые записки Российской академии предпринимательства. 2014. № 40. С. 122–130.
2. Понтнер Е. Я., Столбова И. Ю., Махова И. П. Геоэкологические условия трансформации транспортно-логистической системы Петербургского региона // Известия Российского государственного педагогического университета им. А. И. Герцена. 2012. № 153-2. С. 52–57.
3. Дементьев А. В. Контрактная логистика. СПб.: Книжный дом, 2013.
4. Евтодиева Т. Е. Развитие форм организации логистики: теория и методология: дис. ... д-ра экон. наук. Самара, 2012.
5. Жаболенко М. В. Тенденции развития международного рынка транспортно-логистических услуг // Вестник Донецкой академии автомобильного транспорта. 2015. № 3. С. 4–10.
6. Карасев В. А. Глобализация рынка транспортных услуг и транспортно-логистических систем в мировой экономике: дис. ... канд. экон. наук. М., 2008.
7. Клименко В. В. Тенденции формирования логистической инфраструктуры транспортных узлов // Логистика и управление цепями поставок. 2012. № 2 (49). С. 57–64.
8. Кожина В. О. Глобализация транспортной системы в мировой экономике // Новая наука: опыт, традиции, инновации. 2016. № 4-1 (77). С. 83–86.
9. Кородюк И. С., Кархова С. А. Региональные транспортно-логистические системы: вопросы теории и практики. Иркутск: Изд-во БГУЭП, 2008.
10. Кузнецов М. М., Борисов А. В., Тихонов Д. А. Транспортно-логистическое взаимодействие стран в контексте мировой торговли // Ученые записки Крымского федерального университета им. В. И. Вернадского. Экономика и управление. 2014. Т. 1. № 27 (66). С. 58–74.
11. Кузьмина М. А., Миронова Ю. П., Надирян С. Л. Роль координационно-логистических центров в сфере международных перевозок // Научные труды Кубанского государственного технологического университета. 2016. № 13. С. 218–224.
12. Мамаев Э. А., Чеботарева Е. А. Логистические провайдеры в транспортной системе: учеб. пособие. Ростов н/Д.: РГУПС, 2011.
13. Панасенко Н. Н., Яковлев П. В. Контейнеризация международной транспортной системы // Вестник Астраханского государственного технического университета. Сер.: Морская техника и технология. 2016. № 4. С. 103–116.
14. Фрейдман О. А. Трансформация транспортно-логистической системы как условие устойчивого развития региона // Известия Иркутской государственной экономической академии. 2016. Т. 26. № 4. С. 557–565.
15. Харисова Г. М. Трансформация регионального экономического пространства на основе развития инфраструктурного комплекса: дис. ... д-ра экон. наук. Казань, 2012.
16. Эмирова А. Е. Трансформация транспортных систем в условиях глобализации мировой экономики // Научный журнал НИУ ИТМО. Сер.: Экономика и экологический менеджмент. 2014. № 2. URL: <http://economics.ihbt.ifmo.ru/file/article/11160.pdf>.
17. Barnhart C., Fearing D., Odoni A. et al. Demand and Capacity Management in Transportation // EURO Journal on Transportation and Logistics. 2012. Vol. 1. Issue 1-2. P. 135–155.

18. Cappuccilli Jf., Douet M. A Review of Short Sea Shipping Policy in the European Union // Journal of Transport Geography. 2011. Vol. 19. No. 4. P. 967–976.

19. Erfurth T., Bendul J. Transportation Time and Reliability in Intermodal Transport Chains // International Journal of Transport Economics. 2017. Vol. XLIII. No. 2. P. 257–271.

20. Kum F. Y., Vinh T. Barriers to Supply Chain Integration in the Maritime Logistics Industry // Maritime Economics & Logistics. 2017. Vol. 19. Issue 3. P. 551–572.

21. Lopez-Navarro M. A. The Effect of Shared Planning by Road Transport Firms and Shipping Companies on Performance in the Intermodal Transport Chain: The Case of Ro-Ro Short Sea Shipping // European Journal of Transport and Infrastructure Research. 2013. Issue 13 (1). P. 39–55.

22. Penteado Marchesini M. M., Chicarelli Alcantara R. L. Logistics Activities in Supply Chain Business Process: A Conceptual Framework to Guide their Implementation // The International Journal of Logistics Management. 2016. Vol. 27. Issue 1. P. 6–30.

23. Pradabwong J., Braziotis C., Pawar K.S. et al. Business Process Management and Supply Chain Collaboration: A Critical Comparison // Logistics Research. 2015. Vol. 8. No. 6. P. 127–146.

24. Seo Y.-J., Dinwoodie J., Roe M. Measures of Supply Chain Collaboration in Container Logistics // Maritime Economics & Logistics. 2015. Vol. 17. Issue 3. P. 292–314.

25. Vendela S. Towards More Efficient Logistics: Increasing Load Factor in a Shipper's Road Transport // The International Journal of Logistics Management. 2017. Vol. 28. Issue 2. P. 228–250.

26. Yi-Chih Yang, Chi-Yu Sung. Service Quality Improvement Strategies for Liner-Carrier-Based Global Logistics Companies // International Journal of Shipping and Transport Logistics. 2016. Vol. 8. No. 4. P. 456–487.

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Ссылка для цитирования: Azimov P.Kh. The State of the Objects of the World Transport and Logistics Infrastructure and Transport and Logistic Services Market // Известия Уральского государственного экономического университета. 2017. № 6 (74). С. 52–63.

For citation: Azimov P.Kh. The State of the Objects of the World Transport and Logistics Infrastructure and Transport and Logistic Services Market. *Izvestiya Uralskogo gosudarstvennogo ekonomicheskogo universiteta – Journal of the Ural State University of Economics*, 2017, no. 6 (74), pp. 52–63.