SERVICE MARKET AS AN INTEGRATION PLATFORM FOR LOGISTICS COMPANIES

Freidman, Oksana A., *Irkutsk State Transport University (IRGUPS), Irkutsk, Russia.*

ABSTRACT

Uncertainty and the risks inherent to market processes increase the need to unite efforts of the actors, to strengthen inter-territorial and inter-industry linkages. In the market of transport and logistics services the on-going integration is accompanied by creation of logistic clusters and investment planning in the framework of joint projects regarding construction of transport and logistics structures. The relevance of research of market of transport and logistics business is conditioned by a need to improve coordination of activities of companies-contractors and development of cluster strategies for their development using virtual networking opportunities. The author develops proposed approaches at the example of Irkutsk region.

Keywords: transportation market, mesologistical system, transport and logistics infrastructure, logistics potential, transport and logistics business, inter-system integration, protocluster, virtual network.

Background. *With regard to building and modification of mesologistical system of JSC Russian Railways at the regional level, there is a need for a study of regional markets of transport and logistics business.*

The example of that kind of study is proposed below in the article as a result of the research on market of transport and logistics businesses of Irkutsk region, which was carried out in the period 2012–2015 as a part of a proactive scientific research «Methodology of mesologistical systems management: cluster approach».

Objective. *The objective of the study was to identify the prospects for formation of mesologistical association of the territorial branch of JSC Russian Railways, namely, a branch of East-Siberian railway (hereinafter – ESR) with the actors of market of transport and logistics services (hereinafter – TLC).*

Thus, basic directions of research were as follow: collection, processing and analysis of information used to select TLS market participants, that in future could be included in the control center of mesologistical system serving as a protocluster of logistics operators, as well as identification of problem areas of activity at the level of micrologistical systems of freight forwarding and logistics companies.

In course of the work the following particular objectives were set:

1) to receive a summary of data regarding the market of companies offering freight forwarding and logistics services, based on the official register of the area;

2) to arrange interviewing of company managers and to systematize its results;

3) to group and segment companies, which are constantly in business contact with ESR by two following criteria: completeness of logistics activities and level of networking. It should be noted that the methodology of segmentation is the author's one and was previously publicized in scientific articles [1].

Methods. *The author uses contents analysis, interviewing, general economic and sociological methods, graph construction, comparative analysis, evaluation approach.*

Application of this methodology allows to characterize the level of logistics service of future mesologistical system and make decision on building of cluster structures. It is necessary to add that the methodology of selection of intermediaries in an integration structure is based on principles of cluster approach and the use of hierarchy method of Salai [1].

Results. *According to the regional registry there are 278 companies that provide freight forwarding and logistics services in Irkutsk and region.*

However, interviewing, which was conducted through telephone survey and personal meetings with representatives of companies, revealed the following discrepancies:

– Presence of double entries in the database of logistics providers due to repeating registration of companies regarding various types of freight forwarding services;

– Errors in the registration of companies (some organizations do not actually carry out logistics activities);

– Absence of some companies in the market at the time of the research.

As a result, really 81 companies were surveyed. Of those, 24 companies had annual contracts with East-Siberian Railway, some of which are its subsidiaries. It is necessary to draw attention to the fact that the registration system does not present all companies of the city. The register does not reflect large national logistics providers, operating in Russia and abroad. Research program did not take into account state-level transport companies either, since the purpose of the study was modification of mesologistical system of JSC Russian Railways in the framework of its territorial units.

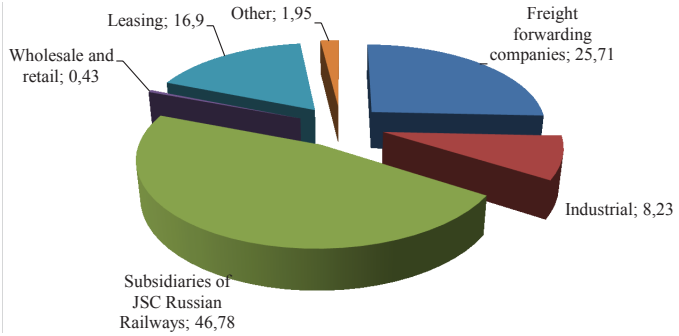
The study revealed that major wholesale and retail network companies are not interested in integration into the cluster system, by virtue of their independence and the possession of their own car fleet.

Study on legal forms of organization of operating companies led to the conclusion about prevalence of limited liability companies and of linear functional structure. Analysis of legal forms and organizational structures was conducted in order to identify opportunities and prospects for unification of departments of actorsof the market of transport and logistics businesses into the cluster structure in case of possible takeover.

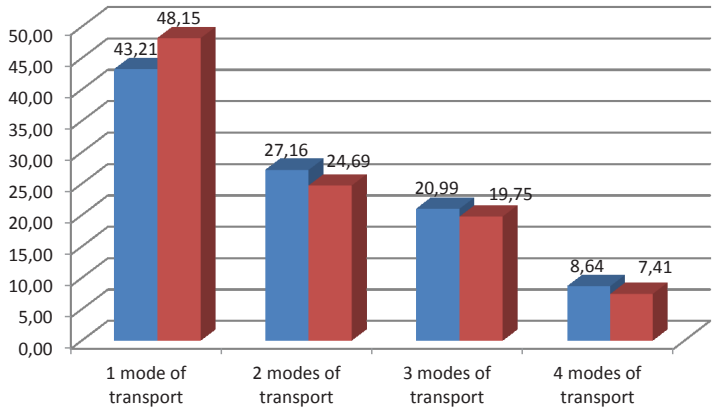
The whole range of companies that interact with ESR has been divided into groups according to the main types of activities and in view of affiliation to JSC Russian Railways into the following groups: freight forwarding companies of free market; leasing companies; subsidiaries of freight forwarding and logistics companies of JSC Russian Railways; wholesale and retail companies; others[1]. The rate of each type of companies in the total volume of shipments of goods is shown in Pic. 1 [3].

The most popular service of the full range of TLS complex is transportation and freight forwarding of

[1] Segmentation was conducted independently on the basis of reports provided for the purposes of different researches conducted in IRGUPS. – author's note.



Pic. 1. Structure of transportation volume of participants of market of transport and logistics services in the integration system with East-Siberian Railway – a branch of JSC Russian Railways according to 2015 data (O. A. Freidman) [2], %.



Pic. 2. Distribution of freight forwarding and logistics companies on the number of types of transport used, according to the survey of companies in 2014–2015, %.

cargo, which amounts to 95,06% among all the companies, and to 87,5% among companies having annual regular contacts with East-Siberian Railway.

During the survey it was found that the majority of companies provide transport and logistics services using the one and the sole mode of transport, which is either railway or road transport (Pic. 2).

However, given that 57% of all companies have everything to deliver goods by two or more modes of transport, organization of multi-modal and combined transportation in the future is possible to the same extent.

It should be noted that consolidated indicator of use of car fleet is not 100% because companies use simultaneously multiple modes of transport. Table 1 shows a steady demand for road transport services and increase in the number of orders on organization of supply chain with inclusion of rail transportation: for three years 22,31% of applications have dealt with that mode of transportation. However, due to the fact that commercial information remains closed for the study, assessment of the dynamics of the volume of shipments of goods by different modes of transport and traffic areas is not possible. Meanwhile, such an assessment would allow to more correctly implement investment projects designed to improve transport and logistics infrastructure of the area using public-private partnerships.

The analysis shows that the number of companies that provide full (or close to it) range of services is small. The largest share of the market is occupied by freight forwarding and related services that are performed in 95,6% of cases, and often it is a mere paperwork (85,19%). Meanwhile, operations of warehousing and delivery of rental storage space are implemented in 60,49% of cases, storage and handling of goods are carried out only by 48,15% of logistics operators.

The actual supply chain management is assumed by 29,63% of operators. Given the fact that in previous years the figure was lower, both in Russia and in Irkutsk region, it is believed that there are prerequisites to increase the quality of services, as well as technical capabilities of market participants. In addition, the growth of the indicator suggests the growth of information equipment of logistics operators. The share of those companies that are immediately ready to carry out information service of customers among them is clearly lower and is estimated at 13,58%.

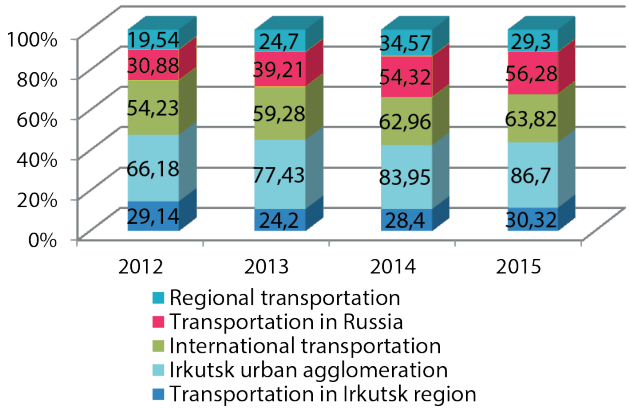
An analysis of transportation directions and areas of providing services allows to conclude on increase of the relative share of medium and long distance transportation in total supplies. In parallel, the increase in the share of international transportation and transportation outside the Siberian Federal District for the past three years has been observed. However, when answering a question about directions of transportation, some representatives of companies are confined to the option «across Russia», without specifying cargo routes that can only be understood as the presence of the very possibility to carry out such shipment.

Pic. 3 shows the dynamics of transportation to destinations during 2012–2015.

Table 1

The structure of use of different modes of transport in TLS in 2012–2015[1] (in %).

№	Mode of transport	Years			
		2012	2013	2014	2015
1	Air	10,28	17,23	32,09	30,12
2	Railway	54,23	66,28	76,54	72,15
3	Water	9,34	14,18	20,09	22,3
4	Road	55,14	58,26	59,25	63,5



Pic. 3. The structure of transportation directions in the TLS market of Irkutsk region in 2012–2015, %.

As seen from the histogram, the largest proportion belongs to the transportation within the territory of Russia, and to deliveries within the region (Siberian Federal District, SFD). This fact is confirmed by the areas of transportation and delivery point specified by logistics and transport operators during the survey. Despite the fact that among delivery points there are countries of the far abroad, interviewers noted that similar routes (for example, to South America, USA and Canada) are isolated, used on one-time basis. The prevailing direction in international transportation is linked to the countries of Southeast Asia.

The presence of international transportation demonstrates the need for inclusion in the infrastructure of a designed mesologistical system of a module for registration of customs operations, as the share of foreign routes is essential and in the short term Irkutsk cluster can be positioned as a cross-border.

It should be noted that since 2015 shipment of goods into the territory of the Republic of Crimea is no longer considered foreign, so shipments' structure has changed and it is possible to carry out the comparison only on the results of 2016. The current political situation also influenced the formation of structure and volume of transported goods, reduced the number of shipments to countries of Western Europe, Turkey and the Ukraine.

Analysis of the structure of transported cargoes proves the predominance of food and assorted goods among transport and logistics operators. Transportation by rail and road transport over medium and long distances, as well as transportation over the near and medium distances in total for the period from 2012 to 2015 were as follows: 2012 – 83,64%, 2013 – 63,41%, 2014 – 82,72%,2015 – 84,23%.

A study on the state of warehouse infrastructure in the TLS market indicates that both logistics operators and freight-forwarding companies have a low share of equipped areas for storage and cargo handling. The data on provision of services in this sector confirm inadequate level, previously identified by analysts. So, only 49 companies (60,04%) are ready to carry out warehousing operations, storage services are rendered by 39 companies (48,15%), service on batching, packaging and repackaging of goods are offered by 22 companies (27,16%). Freight forwarding companies and logistics operators sometimes have facilities for transshipment and storage of goods, but they do not have enough (or do not feel necessity to have) storage conditions for the majority of types of goods. Increase in volume of processed cargo is impossible due to shortage of technical means.

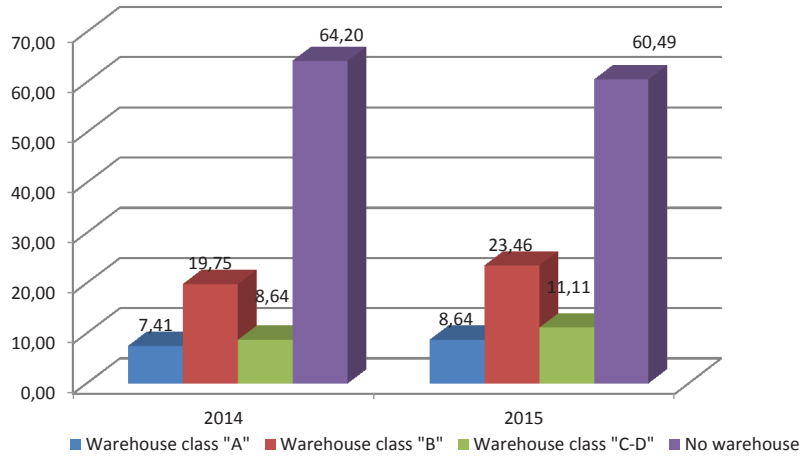
Interviewers determined the structure of warehouse space in three warehouses classes («A» and «B» were marked as a single class during interview, «C» and «D»). Conclusions about the differentiation of warehouses of «A» and of «B» classes were further made by the author basing on the analysis of policy documents, information from websites and personal description of the survey participants of equipment and size of storage space.

Pic. 4 shows the structure of storage space in the TLS market.

The absence of storage space is increasingly observed regarding transport and forwarding companies, most of which tend to deliver directly, minimizing warehouse operations.

At the same time, a number of logistics operators have warehouses in the cities of Irkutsk region, or, as network operators, they have an opportunity to place loads on the network warehouses in other regions and

[1] According to the author's survey of transport and logistics operators of Irkutsk region.



Pic. 4. The structure of warehouse space in the market of freight forwarding companies and logistics operators of Irkutsk and region in 2014–2015, %.

Table 2

The results of answers to the question about possibility of cooperation between companies within VN TLC

Possible answers	Number of companies, units	Relative share,%
Yes, ready to cooperate	30	37,04
No, not ready	22	27,16
Not ready to answer now	17	20,99
Other	12	14,81
Total	81	100,00

Table 3

Matrix of clustering of transport and logistics service providers based on features of completeness of logistic activities and the level of network integration

K_{log} – completeness of logistics activity		Value of interval 0,7–1	Value of interval 0,33–0,7	Value of interval up to 0,33
K_{net} – network integration		high	average	Low
Value of interval 0,7–1	high	VV – network companies 0	SV – network federal company 1	NV – closed zone
Value of interval 0,33–0,7	moderate	VU – transport-logistics companies («old market») 3	SU – developed regional transport companies 7	NU – closed zone
Value of interval up to 0,33	low	VN – local freight forwarding companies 2	SN – «young» regional copmanies 6	NN – logistics company – «market newcomer» 1

abroad. Among such companies can be noted «Asia-Import», «Altek», «Baikal-Transit-Continent», «Dvizhenie», «Delovoe mnenie». In addition, there are companies of federal and international level, ready to carry out warehouse operations in the territories adjacent to Irkutsk region: «Pony Express», «DHL», «Dimex», «Cargo-Service», «Far East Transport Company».

Monitoring of deliveries in Russia can be conducted by companies «TransContainer», «Vostsibtrans», «Baikal-Sib», «Baykaltransgroup», «Baikal courier», as well as by «Irkutsk regional transport company», «Irkutsktransservis», «Irtransvostok», «IRTEK», «Auto Trading».

The structure of answers to the question of appropriateness and readiness to join a virtual network transport and logistics cluster (VN TLC) for the most effective use of information, improving material and technical equipment and increase in supply speed is presented in Table 2.

Positive responses were given predominantly by companies that use road and rail transport and do not have their own areas for warehousing, storage and cargo handling. Representatives of these companies

believe that participation in the cluster will provide an opportunity to increase competitiveness by expanding the range of goods transported and by strengthening cooperation with the structures of JSC Russian Railways and JSC Irkutsk Airport, as well as through joint construction and use of storage terminals space.

Representatives of the companies, that gave a negative answer, explained that they do not see any opportunities for growth and benefits of participation in the cluster, or are limited by the terms of the parent company and are, in fact, their subsidiaries.

The respondents that gave vague answers, underlined that they needed clarifications on the role of their participation in the cluster, as well as about possibilities of growth of their competitiveness, options of public federal and regional support. Further segmentation using Salai hierarchy method was conducted only among those companies that had maintained relations with East-Siberian Railway over the previous three years, as they have enjoyed a high level of reliability. 24 such companies were allocated [3].

The conduct of research and distribution of operating companies by groups on the basis of completeness of their logistics activities and the level of network integration made it possible to segment the market of transport and logistics intermediaries, as shown in Table 3.

As seen from the matrix of segments, the market of transport and logistics services within the field of attraction of territorial branches of JSC Russian Railways cannot be described as developed. Hence there are problems with delivery «from door to door» and quality of logistics services.

Conclusions. *From the above analysis it follows that it is required to expand direct partnership field of ESR that will lead to synergy, which manifests itself in such effects as:*

- *reduction of cost of transportation of goods due to railway transportation organized by shippers;*
- *reduction of regional costs for repair and reconstruction of road bed, by switching from road to rail transport;*
- *increase in the number of customers of JSC Russian Railways in the regions and increase in profits at the expense of cargo transportation;*
- *increase in quality of transport and logistics services within the boundaries of territorial branches of JSC Russian Railways.*

It can also be concluded on the necessity of development of a transport and logistics cluster, based on integration of network and non-network freight forwarding companies acting in the field of rail and road transport, as well as on the usefulness of attracting to a cluster network of logistics providers, which will improve the quality level of transport-logistical services in the region and beyond.

Designing a network transport and logistics cluster should begin with regional information center, and with focusing of investment on creation of information programs, supporting logistics processes and centralized solution of a problem of choice of an intermediary, as well as with organizing supply chain for each future transaction. The introduction of information technologies in a system of counterparties' interconnections will reduce capital costs at the initial stage of clustering, and will also reduce transaction costs. The self-organized system will own virtual links.

Special attention should be paid to shaping of the interest of companies in implementation of a cluster project in a form of private-public partnership, because it can become one of the main motivating conditions for cooperation.

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Information about the author:
Freidman, Oksana A. – Ph.D. (Economics), associate professor, senior researcher of Research management department of Irkutsk State Transport University, Irkutsk, Russia, oksana-frey@mail.ru.

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