

Directions of development of road in terms of interregional integration in Russia

Alexander Seleznev¹, Angela Mottaeva², Larisa Andreeva³ and Svetlana Izmaylova⁴

¹ St. Petersburg Branch Russian Customs Academy, Sofijskaya str., 52 - A, Saint-Petersburg, 1912236, Russia;

² Moscow State University of Civil Engineering, Yaroslavskoe shosse, 26, Moscow, 129337, Russia

³ Moscow people's friendship University, Ordzhonikidze str., Moscow, 129300, Russia

⁴ Russian New University ROSNOU, Radio str., 22, Moscow, 129300, Russia

E-mail: angela-1309.m@yandex.ru

Abstract. The article is aimed at disclosure of the theoretical foundations of the development of transport infrastructure in the region. Sustainable transport and transport links allow to determine the direction of development of modern economy in the regions. Ensuring the availability of strategically important resources for many economic entities is one of the priorities of economic development of regions. the article presents the author's approach to determination of perspective directions of development of relations of economic systems of regions and regional infrastructure. Important role in the processes of spatial integration of the regions transport infrastructure plays, which, on the one hand, determines the level of development of intra-regional production of goods and services, the availability of social welfare for the entire population, on the other hand, helps to establish strong intra-regional ties, thereby bringing together the socio-economic situation of neighbouring regions. Technological solutions for the transportation may be different in Russia, the developed network of Railways, efficiently functioning system of inter-regional pipelines, experiencing a rebirth water transport, however, a special place is occupied by road transportation.

1 Introduction

The main purpose of the study is the urgent need to reduce information availability on the development of transport infrastructure in the region to empower productions.

Ensuring the availability of strategically important resources for many integracija between regions is a complex process, which is based on combination of interests of many economic entities that generate the performance results gross regional product.

For many Russian regions activities at the interregional level became important, and in some cases a dominant factor of socio-economic development. Active development of such linkages has a significant positive impact on the economic situation of subjects of the Russian Federation, contributes to the rise of standard of living and increase employment, stimulate business activity, and occupancy of local budgets, contributing to the sustainable economic development of territories.

But the economic interests intersect with social and political interests of the regions. Every decision at the regional level are focused primarily on the interests of private economic actors, however, the



combination of social, political and economic interests within the region requires a thorough analysis that should precede any management decision [1].

2 Methodological approaches and analysis

In the study of transport infrastructure, made a systematic analysis of relations of producers and the transportation infrastructure elements, as well as discrete analysis of time intervals for grouping and regrouping of cargo.

In the real sector, we can observe different forms of cooperation of economic entities when features of production and consumer demand require building partnerships.

Inter-regional cooperation ensures the following tasks:

- improving the level and quality of life of the population of the region;
- creating an enabling environment for sustainable economic growth in the region;
- stimulation of the processes of mutually beneficial Commerce, the development and strengthening of economic, cultural and humanitarian ties between cooperating regions;
- overcoming the region's specific problems, improvement of the socio-economic situation in the region;
- strengthening and diversification of the directions and forms of cooperation [2, 3].

In accordance with the action of these features can be divided into four groups of regions:

The first group includes regions with a high level of development of regional legislation, developed by the elite and its active position, wide contacts in the international sphere, significant volumes and a diversified structure of external trade. This group includes Moscow, Saint-Petersburg, Tatarstan, Bashkortostan, Sakha (Yakutia), Rostov, Samara, Novgorod, Nizhny Novgorod, Sverdlovsk region, Khabarovsk Krai, etc. The second group of regions is characterized by a relatively high level of development of regional legislation, the presence of the concept of development of export-oriented industries, substantial contacts in the international sphere, mainly due to its border position. The group consists of: Kaliningrad, Leningrad, Volgograd, Arkhangelsk, Sakhalin region, Primorsky Krai, Republic of Karelia, Komi, etc. The third group includes regions that have great natural resource potential and high level of socio-economic development, a significant foreign trade turnover. This Tyumen oblast, Khanty-Mansi, Yamalo-Nenets, Nenets Autonomous district, Perm, etc. [4].

The fourth group includes regions with a low level of development of legislation in the interregional sphere, a low level of development of international contacts, weak export capacity. Such entities often referred to as "subsidized". This is Chita, Ulyanovsk, Penza, Pskov region, Republic of the North Caucasus. In the income structure of these regions occupy a significant share of revenues from the Federal budget in the form of various forms of financial support.

In implementing the concept of regional integration should be introduced new requirements governing the priority of creating a common economic space in relation to their regional interests. At the same time, it is necessary to consider interests of regional businesses. Thus, the process of interregional spatial integration consists of several stages and involves consideration of the following points:

- the need to support regional economic entities;
- maintenance and development of conditions for the social protection of the population;
- expansion of markets in key industries of the region;
- implementation of programmes for the support and forming the Foundation for the realization of interregional and intersectoral innovation;
- ensuring timely and sufficient funding of infrastructure provision of production;
- participation in inter-regional infrastructure programmes to ensure interregional integration processes.

Thus, interregional spatial integration should be based on the regulatory framework of development cooperation relations of business entities. At the same time, it is necessary to provide favorable conditions for the development of transport infrastructure, including businesses engaged in trucking [5].

3 Results

Highlight the several types of regional trucking network structures based on the combination of regional competitive advantages and promoting spatial integration regions:

1. Multi-tasking or universal network of motor structures, whose activities are built on the sources of competitive advantages transit, industrial, and financial-economically developed regions. They help to overcome the regional socio-economic differentiation and the formation of the common economic space of Russia.

2. Specialized network of motor structures, focused on import-export operations, whose activity is connected with implementation of the competitive advantages provided by industrial, transit and border regions.

3. Intersectoral network of motor structures that combine several interrelated industrial regions through the required number of transit regions.

Interdisciplinary and specialized network of motor structures, along with the solution of problems of Federal, interregional level, able to optimize transport infrastructure of the region in the areas of development allocated as a priority by the leadership of the region.

Regional power, solving complex problems of spatial integration should not overlook the need to preserve the motivation of their motor structures. Their flexibility and versatility are often the determining factor for the development of small and medium enterprises modern regions of the Russian Federation.

Increase of profitability of motor carriers in the face of competition, especially at the interregional level is an important issue. The goal of increasing the profitability of motor carriers in a single interregional network on the basis of the stepwise solution of several problems (Figure 1) [6].

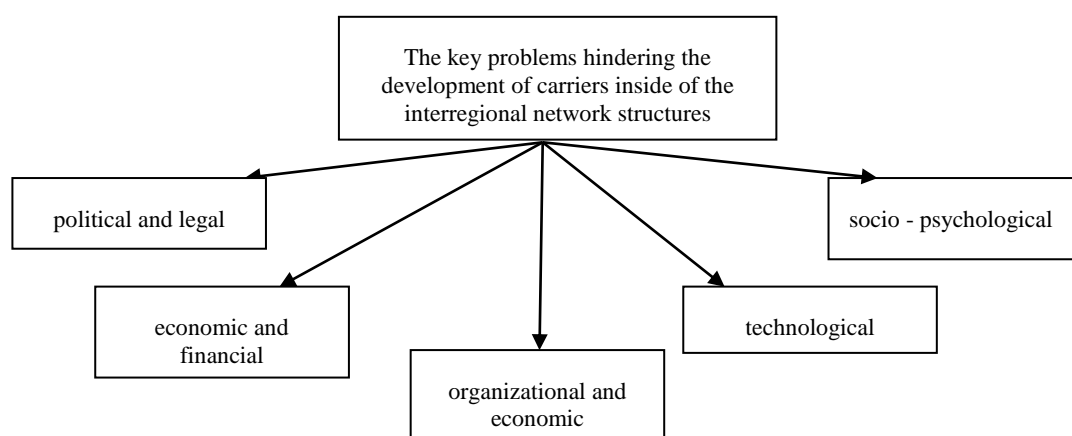


Figure 1. Challenges to the development of carriers in interregional

Let us consider selected issues in more detail.

Organizational-economic problems.

1. The abolition of licensing of road freight transport with carrying capacity over 3.5 tons. This increased unfair competition in some segments of trucking. As for interregional network structures, this innovation has increased the complexity of satisfaction with networks of forwarders local small needs.

2. The trend towards unbundling the traditional motor structures established in a planned economy, which reduces the possibility of formation of inter-regional network structures.

3. A large number of illegally operating carriers, which leads to the growth of the shadow competition and reduced profitability of legal activities carriers.

4. Insufficient attention to the management of transport enterprises to the competitiveness and quality of services, in the framework of creating a network of carriers at the interregional level is of particular importance.

5. Lack of financial sustainability of the enterprises-carriers.

Political and legal problems.

This set of problems largely depends on the rules and principles of activities, regulated by various legislative acts and arbitration decisions in modern jurisprudence. So, the arbitration decision on the damage of cargo during the implementation of customer relations – the carrier is often wrongly interpreted in favor of the customer, while modern production allows a lot of hidden defects which are revealed when the sale of services trucking. In interregional transport may change the conditions of carriage, depending on supplies of vehicles and conditions of transportation to the various market actors that is not taken into account properly.

Imperfect tax legislation, the disadvantages which give rise to additional difficulties for the most vulnerable - small enterprises - carriers.

Financial and economic problems.

Occur in organizations of all interactions, while the coordinated development of many motor carriers may be difficult owing to financial difficulties.

So, a pair of interconnected enterprises, in different ways taking into account VAT, it is difficult to apply the principles of financial planning.

On the other hand, this aspect of the work pushes carriers to unite in regional trucking network structure, able to flexibly meet the growing needs of markets.

Another aspect of the financial problems would be the book value of assets of enterprises that can act as a guarantee for the implementation of appropriate transportation. Insufficient currency balsa in the first place, typical for small businesses. These obstacles naturally disappear when you turn on a small enterprise with the required quality of road transport services in the inter-regional network structure.

Technical and technological.

The obsolete transport fleet of cargo does not allow to fully meet coming from the part of economic complexes of region queries in a transport system of the region. The wear and tear of the key assets of the motor transportation enterprises is approaching, according to experts, to 70 %.

The complexity of the technological process of cargo transportation is the coordination of requirements to the organization of loading and unloading of aligning machines and warehouse equipment.

The need to ensure the ongoing development of interregional networks of the carriers is also associated with difficulties exercising control over the vehicles and accept the goods in transit [7, 8].

Social and labor problems.

Arise in the formation of long-term cooperation relationships with manufacturers of products [9, 10]. This is due to interregional differentiation in the level of wages, social guarantees, opportunities of labour mobility.

The adoption of the conceptual foundations for the development of a shared corporate culture, the development of effective instruments of corporate social policy for all participants of the regional trucking network structure allows to reduce the number of internal conflicts in the enterprises.

Considering the main challenges to the development of the motor transportation enterprises - carriers, we have discussed features of organization of cargo transportation, which determine the processes of formation and development of interregional network of transportation structures.

In accordance with the directions of spatial integration of the regions can be found solutions to the systemic problems of motor carriers.

Thus, the development of interregional networks, which includes trucking companies - carriers providing commercial relationship for the sale of finished products between regions, contributes to the strengthening of the ties between economic entities of different regions, the formation of the common

economic space at the level of Federal districts, thereby creating a single economic space of the national economy.

For the effective organization of the trade turnover of finished goods required harmonization of requirements for handling and providing economic and physical safety on the roads.

Industrial production has its specific requirements to cargo. Industrial equipment requires technical training machines to implement complex lifting operations. And the implementation of some transport services is due to the particular organizational challenges (e.g., transportation of explosives in quarries, copper and iron ore).

Organizational solutions to ensure cargo security, the organization of loading and unloading of cargo that requires special skills, are the priority directions of development of management innovation in the transport sector in the organization of extraction of natural resources.

Thus, the leading direction of development of the regional trucking network structures is maintaining a strict control of the services of the state inspection on the road, and priority to monitoring the infrastructure components of the road.

Another activity of the interregional network of transportation agencies is to satisfy the needs of customers from different regions in the combined goods. The solution to such problems is based on the modernization of the truck fleet for the transport system.

Thus, it is necessary to develop programs of innovative modernization of road, warehouse and transportation management, including at the interregional level. In accordance with the objectives of inter-regional exchange can be claimed program of support of manufacturers of components for trucks and trailers, development of road construction.

4 Discussion

Regional transport infrastructure is an element of the market infrastructure that brings together the spheres of production, redistribution and final consumption in a single chain (network), creating the conditions for intraregional and interregional exchange of commodity-material values. Patterns of functioning associated with the concept of spatial network structures, of which the elements are linked at the regional level and beyond. Nodes of these networks are the transport businesses and organizations. In modern scientific literature the transport infrastructure is generally regarded as the totality of complex urban infrastructure and engineering structures, which include a wide range of structural elements (communications, equipment and facilities navigation systems, emergency services, etc.)

Transport infrastructure of a particular region should provide the necessary conditions not only for simple but also for expanded regional reproduction, to meet the needs of key industries, to provide modern transport communications for development of business structures, engaged in the business of innovation.

A special place for regional transport infrastructure is to ensure interoperability between entities in different regions, because the travel of the material flow is only possible through the use of all types of transport communications. However, transport enterprises in the region often operate in isolation. At the same time, from the viewpoint of formation of uniform economic space it is reasonable to build up networks, nodes (companies) which are distributed in the neighboring regions.

Thus, the improvement of regional transport infrastructure is an important factor not only to the sustainable growth of the regional economy and interregional cooperation, through the development and implementation of relevant mechanisms, among which we relate the development of interregional network structures. It appears that regional transport infrastructure must form a leading vector of development compared to other sectors of the economy that will allow it to act as a catalyst for the intensification of interactions of economic entities within the region and at the interregional level, removing a significant part of transport restrictions in production, trade, and also in the social sphere.

The basic components of the regional trucking network structures are carriers. Support of regional authorities should be aimed at the development of these business structures, capable of flexibly serve the needs of regions and their industries in a strategically important components and resources.

If we talk about the share of transportation in the North-Western region in the framework of the Russian Federation, it amounts to about 13% by rail and 34% of marine transport and about 30% by road. For the period of the economic crisis of 2008-2009, the drop in traffic in the North-Western region amounted to 10% compared to other industrial regions appear to be more optimistic. It happened because it is more developed and full of road, rail, aviation and port infrastructure in comparison with other regions of the Russian Federation.

5 Conclusions

A special place in the infrastructure ensuring interregional exchange belongs to the road infrastructure, because the flexibility and multi-tasking provide motor transportation services helps to better meet the dynamic needs arising in the course of interregional integration of production.

To ensure interregional spatial integration it is advisable to use the development potential of network structures. Common properties of network structures in the economy is their distribution, the finite elements, the presence of the coordinating center. Therefore, the development of network organization of economic activities in different sectors contributes to the intensification of integration processes.

Technological solutions for the transportation may be different in Russia, the developed network of Railways, efficiently functioning system of inter-regional pipelines, experiencing a rebirth water transport, however, a special place is occupied by road transportation.

The length of roads, the role of road transport in trade relations, regional road network form the potential of interregional cooperation.

From the standpoint of transport infrastructure and potential network structures is a promising direction that promotes more intensive spatial integration of the Russian economy, is in this regard, the development of interregional network of transportation structures.

Under the interregional transportation network structure refers to the interconnected regional enterprises of motor transport support, organizational into a single interactive information, resource and technology networks and coordinating their actions in the process of moving material flows between regions. The greatest importance to the regional economy and the integration of interactions are carriers.

The development of road infrastructure at the interregional level is constrained by a number of problems that can be solved as the methods of state regulation, and from the standpoint of the development of the very trucking companies.

References

- [1] Akimova E and Knyazev D 2015 *International Journal of Applied Engineering* **10** 18
- [2] Polyakova I and Vasilyeva E 2016 *Procedia Engineering* **165** 1380-1387
- [3] Panteleeva M and Borozdina S 2017 *MATEC Web of Conferences* **106** 080471
- [4] Meshcheryakova T 2017 *MATEC Web of Conferences* **106** 06021
- [5] Rozhentsova I and Mottaeva A 2017 *MATEC Web of Conferences*, 08076, DOI: <https://doi.org/10.1051/matecconf/201710608076>
- [6] Akimova E 2017 *MATEC Web of Conferences* **106** 01043
- [7] Verstina N 2017 *MATEC Web of Conferences* **106** 08091
- [8] Polyakova I and Chibisova E 2016 *Journal of economy and entrepreneurship* **5** (70) pp 579-582
- [9] Chibisova E 2015 *Journal of International Scientific Publications* **5** 2 pp. 600.
- [10] Glazkova V 2017 *MATEC Web of Conferences* **106** 08095