

# Synergies in the Interaction of the Transport-Logistics Services Market

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The article presents new approaches to the integration of companies in the transport and logistics services market. The methods of integrating companies in Russia are very relevant today, as they allow uniting the efforts of organizations in this market. Integration of companies into unincorporated associations will allow not only reducing transaction costs, but also costs for the development of transport and logistics infrastructure.

**Keywords:** market of transport and logistics services, transport and logistics companies, logistics operator rating, synergy.

## 1. RELEVANCE RATIONALE

The development of the transport-logistics services market (further TLS) is a necessary condition for the national economy development as it provides correlation branch complexes. Problems which we have in the Russia foreign policy can be briefly summarized by the following data [1,2]:

- 1) Russia's foreign trade turnover in 2014 decreased by 6.8%, which amounted to \$ 58,823 million.
- 2) The slowdown in GDP growth with external growth of absolute indicators, so Russia's GDP growth was 12, 11% in 2012, in 2013 - 6.16%, and 9.62, respectively, and 3.23% in 2014 and in 2015.
- 3) The volume of foreign trade turnover of Russia dropped by more than 33% in 2015 which amounted to \$ 261,454 million.

These processes are related not only to political events happening in the country and the world, but they also are connected with the development level of the state of the national transport -logistics system.

Thus, the economic performance of the national economy underlines the need for new scientific approaches in the sphere of interaction management on the transport-logistics market on

the regional and national level, and to control it in the mezo- and micro-logistical systems.

The economic and political situation can be expressed as a shift of Russia's geopolitical interests in the direction of trade cooperation expansion with the Asia-Pacific region countries. The proof of this fact is the growing volume of trade between Russia and the countries of the Asia-Pacific region.

## 2. THE PROBLEMS ON THE RUSSIAN TLS MARKET

The processes of international and domestic movement of goods must be provided with a supply chain, the formation of which depends on the effective interaction of participants of transactions, as well as the timely use of transport and logistics infrastructure by moving the material stream.

In this regard, we consider the following problems of the Russian transport and logistics services market:

- the uneven development of territorial transport and logistics infrastructure of the Russian Federation;
- exceeding the segments of transport and forwarding services as compared to the management of logistics services;

- poor development of partnerships between the subjects of the market average of transport and logistics businesses and corporations;

According to the testimony of practitioners and analysts in the field of logistics, confirmed by a study of the territorial logistics services markets, one of the most important issues is the coordination of the activities of partners in the supply chain of material resources.

The symptoms of this problem are:

- high level of transaction costs in logistics;
- failure to provide logistics services for outsourcing in the Russian market (which is also expressed in the desire of foreign companies to carry out this service independently in Russia);
- insufficient development of controlling instruments and management of logistics processes.

It is possible to solve the existing problems of developing the market of transport and logistics services if modern methods of managing the interaction of companies are applied, as well as the processes of their integration. In particular, it is necessary to consider issues of obtaining a synergistic effect from the merger of companies and the joint organization of an integrated service.

The research objective is to develop a mechanism for integrating companies in the market of transport and logistics services, as well as to elaborate a formula for calculating the effect of integration. Thus, the calculation of the synergy effect arising from the interaction of companies is a tool for the economic justification of the rationality of interaction: in a corporation, in a cluster, in a strategic alliance, etc.

### 3. SCIENTIFIC AND METHODOLOGICAL APPROACHES TO THE CHOICE OF FORMS OF INTERACTION BETWEEN COMPANIES ON THE MARKET OF TRANSPORT-LOGISTICS SERVICES

To begin with, it is necessary to clarify the term "synergy" given by foreign scientists. In general, the concept of synergetics is due to Herman Haken [3], who introduced this term in his lecture at the University of Stuttgart. Later, under the leadership of Edgar Morin, the French synergetic school developed a school.

The modern school of management uses the concept of synergism with respect to research and

management of corporations. By introducing the concept of synergetics into the theory of management, we are indebted to such scientists as David A. Aaker and Jerry Johnson. They argued that the essence of "synergy" is the excess of the whole over the sum of parts, the effect of greater returns on the interaction of several strategic business units than each one gives separately. So yes. Aaker says: "Synergism is the business advantage that arises from relationships with other business units. Achieving synergies between different business areas is a key point of strategic vision. Alliance - instantaneous acquisition of synergy" [4, c.28, 233, 234].

The issues of integrating companies in logistics are of interest to many Russian scientists. To such researches and works it is possible to carry scientific works of G.M. Grejz [5], A.E. Ivanov [6], V.M. Katoctkov [5,7]. Methods for calculating the synergy effect in the creation of corporate systems in logics were considered by G.M. Greys [5] and L.I. Zhurova [8].

However, the first scientific papers dealing with the measurement of effects in clusters belong to such scientists as Y. Sheffy [9], M. P. Feldman [10]. The scientific value of these works is to assess the possibilities of clustering companies, as well as the inclusion of logistic components in the analysis.

It should be noted that a single way of assessing the effectiveness of mergers, including in the market of transport and logistics services has not yet been proposed. In this regard, the methodology for rating the benefits of integrating companies in various forms of associations was developed and it is discussed in Table 1.

The basis of effective interaction between companies is the mutual, agreed choice of organizational form of the association. To this end, it proposed the rating model for evaluating preferred logistics operators, presented in Table 1.

Each term of the contract is considered in terms of completeness, and the presence of conditions is evaluated as "1", partial presence of conditions such as "0.5", the lack of a "0". Based on the weight of each feature and the degree of fulfillment of the conditions of the contract of association formed rating

The calculation of the total index rating held by the formula 1:

$$R_j = \sum_{i=1, n} a_i f_i \quad (1)$$

where  $R_j$  - rating combining the system of the preferred conditions of the contract,  $a_{ir}$  - each of the conditions of the contract,  $f_j$  - weight conditions.

the regional markets is seen in the creation of regional cluster associations, and in the longer run in the creation of consortia or forming strategic alliances (slide, which was confirmed during the

Table 1. The evaluation of the associations preferred rankings of logistics systems on the market of transport and logistics services.

Type of association	preferences								$R_j$
	judicial independence $a_1$	Production autonomy $a_2$	Financial independence $a_3$	commercial independence $a_4$	Drinking specialization $a_5$	cooperation Period $a_6$			
	$f_1=0,2$	$f_2=0,15$	$f_3=0,2$	$f_4=0,2$	$f_5=0,2$	$f_6=0,1$			
	Complete	Complete	Complete	Complete	diversifie $d$	LT	MT	ShT	
A	1	2	3	4	5	6	7	8	9
Corporation	1	0	1	1	0	0	0	1	5,65
Holding	1	1	0,5	0,5	1	1	1	0	6,7
Concern	1	1	0,5	0	1	0	0	1	6,5
Trust	0	0	0	0,5	0	0	0	1	0,35
Conglomerate	0,5	0	0,5	0,5	1	0	0	1	3,95
Consortium	1	1	0	0	1	0	1	0	6,4
Cartel	0	1	1	1	0	0	0	1	0,8
Syndicate	1	1	1	0,5	0	0	1	0	5,7
Pool	1	1	0	0,5	0	1	1	0	6,6
Association	1	1	1	1	0	1	1	0	5,9
Strategic alliance	1	0	0,5	0,5	1	1	1	0	6,55
Cluster	1	1	1	0,5	1	1	0	0	6,7

The information from Table 1 can be concluded as the tendency to form in a short and the average period of time of clusters or consortium, and in the long term to the formation of a strategic alliance.

#### 4. METHODS FOR ASSESSING THE ECONOMIC EFFECTS OF THE INTERACTION IN THE SUPPLY CHAIN IN CLUSTER-TYPE ASSOCIATIONS

One of the strategic aspects of the interaction between market players of transport and logistics services is to improve the activities of the business unit affiliated dependent companies of the railway industry, representing mezologistic system.

Solving the problem of organizing the partnership between the subsidiaries and affiliates of OAO "Russian Railways" and the operators on

research preferences of regional logistics operators and freight-forwarding companies. In the short and medium-term partnership in the cluster solutions will solve such tasks as:

- creation of a unified information database of orders;
- monitoring transit logistics flows;
- reducing order cycle time;
- improving the safety of transport and logistics services;
- the introduction of controlling a system of indicators to control the interaction.

In a clustered environment the interaction of territorial divisions SDCs of JSC "Russian Railways" with the subjects of the territorial markets TLB proposed measurement model

(assess) the synergies, including the following aspects.

Model for calculating the synergies of the cluster form of a partnership (for the effects of species)

Designation Content effect Manifestation effect in cluster form partnership:

1. *Effect direct income (Marketing)  $E_v$*  - is formed by increasing the number of orders at the expense of network forms of cooperation Added value occurred while expanding the range of services and attracted additional customers.
2. *Organization effect (transactional)  $E_{tran}$*  - formed by reducing the response time savings for loss of profits arising in the event of failures and the resulting long waiting time
3. *Infrastructure effects*
  - 3.1 *Savings in capital costs  $\Sigma (C + E_w)$*   
 $E_w$  - at the expense of cost savings within the boundaries macrologistical system (RTLS) Savings in capital costs for the design and construction of transport and logistics infrastructure and its placement.  
 $C$  is formed through the redistribution of cost savings in the differentiation of the cost of reconstruction of transport and logistics system between the cluster members within the RTLS
  - 3.2 *Effect of the joint use of vehicles  $E_r$*  - formed by savings from the empty language runs at full loading of the rolling stock
4. *The effect of shared storage building  $E_{wp}$*  - at the expense of reducing the cost of rent or maintenance of storage space savings, while providing space cluster members to each other, increasing the utilization of warehouse space
5. *Innovative effect  $E_{inov}$*  - formed by co-financing cluster partners to scientific technologies information and getting information technologies knowledge for the development.

The proposed model for evaluating the results of interaction of logistics systems, presented as synergies will allow drawing conclusions about the effectiveness of management practices.

Partnerships in the framework of the cluster association would be possible to achieve such results as:

- elimination of the problem areas in the field of integrated transport and logistics services, through the implementation of the parallel provision of additional services from the resources of different providers;
- expansion of the geography of rendering services through joint venture logistics network operators with a high level of adaptability to regional markets and micro;
- maintenance and / or improvement of the quality of services through the use of technologies of competitive selection of intermediaries in managing conditions mezologistics virtualization and cluster system;
- optimization of the cost of maintaining the transport and logistics infrastructure and its development/

Effects of interaction of members are formed due to such properties of logistics systems as additivity and complementarity. The property of complementarity allows to unite partners in integration, while the additivity property allows to combine efforts of partners and, thus, to increase their total technological, economic and market capacity.

Thus, the effects obtained as a result of interaction in the logistics integration structure can be differentiated into the following groups:

- 1) commercial, arising from the joint use of the client base, its preservation and growth;
- 2) operational, arising as a result of cooperation of partners in the process of carrying out logistic operations;
- 3) organizational and managerial, arising as a result of reducing the cycle time of the order and the response time, due to the use of a single information database and the "one window" method;
- 4) infrastructural, arising from the joint use of transport, storage, information infrastructure and joint training of personnel
- 5) innovative and investment, arising in conditions of co-financing projects to develop the transport and logistics infrastructure of as a macro platform for cluster formation.

The proposed model for assessing the results of the interaction of logistics systems, presented as a synergy effect, will allow us to draw conclusions about the effectiveness of management methods

and develop further scenarios for the development of the TLS market.

The organization of partnership within the framework of a cluster association would achieve the following results:

- 1) elimination of problem areas in the field of integrated transport and logistics services, by implementing parallel provision of additional services at the expense of resources of different providers;
- 2) expansion of the geography of service provision through the joint operation of network logistics operators with a high level of adaptability in regional markets and micro;
- 3) maintenance of and / or improve the quality of services through the use of technology of competitive selection of intermediaries in the virtualization of the management of the mezzological system and the cluster;
- 4) optimization of the costs of maintaining the transport and logistics infrastructure and its development.

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