

# Strategic Development of Enterprises in the Freight Services Market

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**Abstract**— The paper deals with the freight services market in Russia. The authors distinguished the main risks for freight forwarders and the factors that hinder the growth of the freight and logistics services market. They justified the cost functions against the distance of rail movement, trucking activities or river traffic and defined the optimal means of transport according to the cost minimization criterion. The authors of this paper specified strategic guidelines in the development of enterprises in the freight services market such as improving the quality service and the flexibility for cargo owners, developing the logistics infrastructure and making prompt decisions. The assessment method for evaluating shipping carriers' competitiveness according to the customer preferences, the complexity of provided services, the company's position in the market and customer satisfaction was suggested. The choice of the optimal private strategy under risk and uncertainty for enterprise development in the freight services market was justified.

**Keywords**— *transport, freight services market, shipping carrier, forwarding services, development strategy, risk, competitiveness.*

## 1. INTRODUCTION

The economy of any country cannot be imagined without well-functioning freight services market. The transport system determines the conditions for the country's economic growth, the increase of national economy competitiveness and living standards. The development of the transport infrastructure is an essential condition for trade expansion. The availability of high-quality and safe freight services affects all economic sectors and the quality of social services [19]. According to the Federal State Statistics Service [15] and the Ministry of Transport of the Russian Federation [10], 1787.7 million tons of cargo were transported by all means of transport in 1st quarter 2016 in Russia, which is 1.2% more than for the same quarter in 2015. The structure of freight traffic activity by various means of transport indicates that 65.11% of the total volume of goods was transported by road, 17.94% by rail, and 16.27% by pipeline. In this regard, the role of transport in the economic and social development of the country is enormous, consequently the subject of the paper is of immediate interest. The freight services market is highly competitive and this fact motivates shipping carriers to look for a strategic guidance for their business development. This study deals with the strategic development of enterprises in the freight services market. For this purpose, we determined the risks for shipping carriers,

specified the cost depending on the delivery distance, tested the assessment method of transport companies' competitiveness and studied the strategies for enterprise development in the freight services market.

## 2. RESULTS

Grouping of Russian freight forwarding organizations according to their services showed that, in addition to freightage, 83% of freight forwarders provide information services, 42% - cargo insurance and customs formalities, 37% are able to develop the logistic structure and only 18% - financial services. Recent empirical studies on transport services procurement showed that logistics managers give priority to reliability, freightage quality, geographic coverage and low price when choosing transport providers [17]. Currently, the service quality is becoming increasingly important in the freight services market. Quality is an effective tool for maintaining and increasing the shipping carriers' competitiveness in the freight services market [16]. For its part, the increase of the supply reliability is impossible without the development of information transport technologies [18, 20]. However, the current state of the freight and logistics services market does not meet the growing needs of the population and cargo owners [6]. In this regard, the main strategic guidelines for the enterprises development in the freight services market can be considered to increase the quality service and flexibility for cargo owners and passengers, to improve logistics infrastructure and decision-making efficiency in freight management.

Different means of transport have different cost functions depending on distance [8]. The managerial decision of choosing the mean of transport in supply chains is multi-criteria and multi-faceted because it is necessary to take cargo specificity, its cost, environmental conditions, safety and service level into account [4, 5]. The cost function development of different types of freightage is based on the statistics of Public Corporation TogliattiAzot. The company produced and shipped 530,000 tons of ammonia, 240,000 tons of carbamide, 130,000 tons of creatine phosphokinase, 60,000 tons of ammoniacaliquor in the national market in 2016. The authors examined the freightage of 600 tons of carbamide by railway, vehicular and river transport to national consumers in the European part of the Russian Federation (Vologda, Moscow, Kirov and Tula regions, and Krasnodar Krai). The way is bulk transportation, the minimum batch size is 60 tons

in a specialized car, 600 tons in a riverboat and 6 tons in a specialized vehicle. The algorithm includes the following steps [12]. The cost components (S) include the freightage costs (S1), losses from deceleration of current assets movement in the transportation inventory (S2), insurance payments (S3), losses within the spoilage allowance (S4), environmental costs (S5) and security costs (S6):

$$S = \sum_{i=1}^6 S_i \rightarrow \min .$$

After taking the regression analysis with

the help of the software product, we determined the following cost dependencies (y, millions of rubles) against the delivery distance of carbamide:

- by railway vehicles (x, thousand km):  $y = 0.353 \cdot e^{0.444 \cdot x}$
- by river transport (x, thousand km):  $y = 0.917 \cdot e^{0.728 \cdot x}$
- by vehicular transportation (x, thousand km):  $y = 0.535 \cdot e^{0.307 \cdot x}$

As it follows from the calculations, the minimum costs take place when carbamide is transported by rail, and the maximum ones take place when carbamide is transported by the vehicular transport.

The main risks for the freight and logistics services market in Russia are the financial and economic instability in the country, the production stagnation (the closure of small and medium-sized enterprises), the reduction of international cargo flows, the slowdown of personal incomes and domestic demand because of the change in the consumer behavior (from consumption to saving) and the reduction of investments in infrastructure [7]. In addition, it is possible to identify factors that block the growth of freight and logistics services market: the recession in the economic development of the Russian Federation; the drop in the ruble rate in comparison with the world's leading currencies; the market slump in the Russian goods export. Probable Consequences for the Russian Federation: the capital outflow, the decline in investment activity, personal income rates and retailing; the slowdown of import rates, the import substitution by national production, the increase of the national goods competitiveness in the embracing market, the rise in the prices of imported industrial and consumer goods including food; the decrease of raw materials and semi-finished products export, the reduction of currency supply from foreign trading.

There is a high level of competition in the freight services market. To assess the competitiveness of shipping carriers, scientists developed the appropriate method [2, 11, 13, 14]. The evaluation criteria for this method are divided into three groups: customer preferences, the complexity of the provided services and the company's position in the market (see Formula 1):

$$R = (\bar{D} + \bar{L} + \bar{P}) / 3 \quad (1)$$

D is customer preferences,

L is the complexity of the provided services,

P is the company's position in the market.

The calculation is complex and integral. It combines several assessment methods: the evaluation of the company statistics, experts' evaluation (ATI web portal - AutoTransInfo), customers' evaluation [1]. Using the

proposed method, we considered the assessment of the competitiveness of LLC RIO-NORT GROUP which provides assembly-line shipments by vehicular transport, development of industry solutions for customers (with due regard to the specifics of supply, production and warehousing), cargoes delivery by ice road (with the help of cross-country vehicles and other means of all-terrain vehicles), dangerous goods delivery and delivery of goods with a special temperature regime. The company's particular business components are the over-dimensional cargo delivery, the guiding and the pilot car.

The authors of the paper distinguished eight most important factors for consumers: development of delivery plan; efficiency of finding and providing the necessary transport; Fee Policy; punctual presentation of documents; transportation stage informing; broad geography of cargo delivery; company reputation in the market; staff qualification. To take the significance of each factor into account, we introduced weight assignments. Its values are in the interval [0; 1]. The mean estimator for each factor is calculated as the sum of products of the estimators by weight divided by the number of weight assessments. Average D = 4.6. As being a criterion, the complexity of the provided services is calculated according to the company's statistics that include its particular provided services (various means of transport, customs clearance, insurance, warehousing services, etc.). If the answer is positive, the assessment is five, if it is negative - one. The weight assessment in this case is the same and for each service equals 0.1. Average L = 2.9. As being a criterion, the company's position in the market includes two assessment methods (experts' and a company's statistics) and consists of the following factors: 1) age of the company (a start-up (up to a year) - one point, from one to three years - two points, from three to five years - three points, from five to ten years - four points, more than ten years - five points); 2) number of employees (availability of staff to provide the services - from one to five points); 3) availability of vehicles (from one to five points); 4) availability of warehouses (from one to five points); 5) volume of services at runtime (if the current volume of services has increased in comparison with the previous one, it is five points, if not, one point); 6) experts' opinion. It indicates the company's rating according to the ATI web portal. The weight assessment of the presented factors is equal to 0.10, 0.05, 0.15, 0.20, 0.10, and 0.40. Average P = 3.32. Following the formula 1, you can find the final assessment describing the overall competitiveness of LLC RIO-NORT GROUP in the freight forwarding service market  $R = (4.6 + 2.9 + 3.32) / 3 = 3.6$ . As a result, the overall assessment of the competitiveness of LLC RIO-NORT GROUP is 3.6 points that is a very good result for a start-up company. The average rating is only 2.9 in the Russian market [3, p. 66]. The authors of this paper believe that another additional criterion should be introduced in addition to the proposed ones. This is a questionnaire for company's clients. We evaluated the satisfaction with the received services according to a five-point scale and then calculated the average

for each partner and the total amount. The formula 2 in this case determined the overall assessment of competitiveness.

$$R = (\bar{D} + \bar{L} + \bar{P} + \bar{S}) / 4 \quad (2)$$

S is the customer satisfaction with the received services.

This method for assessing competitiveness makes it possible to evaluate comprehensively not only transport-expediting enterprise but also any participants in the freight transportation market, to identify competitive advantages and determine its attractive sides in terms of awarding a carrying cargo contract. To maintain this level of competitiveness and/or increase it, each forwarding company builds a market development strategy that means to find various ways to business growth. For this purpose, the following capabilities can be considered: intensification growth, integration growth, diversification growth. Each of these strategies is implemented through a series of activities that are called private strategy and it involves a project or a set of projects for improving business activities and achieving company's objectives in a better way [9, p. 363]. The criteria "the complexity of the services provided" and "the company's position in the market" have minimum value in the competitiveness assessment that is why it is advisable to increase competitiveness through the improving just these criteria. Before implementing the particular strategy to increase competitiveness, a forwarding company needs to determine the possibility of sale that is the availability of the necessary funds. If there are none, the project is rejected and/or the financing plan is revised. We recommend choosing the optimal private development strategy for the company in the freight services market taking the risk and uncertainty into account.

### 3. CONCLUSION

In the current context, the needs of cargo owners are no longer limited to the simple cargo delivery from one place to another. The client becomes interested in receiving additional services, such as documentation execution, cargo and vehicles insurance, customs formalities execution and others. This is related directly or indirectly to the freight process. The freight and logistics market has grown by more than 19% annually over the past five years in Russia. The freight-forwarding segment has the fastest growth. In general, transport and forwarding activities have organizational and coordinating nature and are designed to regulate traffic flows and cargo delivery. There are thousands of freight forwarding companies of different sizes and activities in the market economies. However, when organizing this kind of activity, there are a number of problems and issues such as increasing of competitiveness, finding ways to optimize the freight process and improving the transport service quality. We carried out this research on the freight service market in Russia, the main risks of shipping carriers, the factors impeding the growth of the freight and logistics services market and the strategic guidelines for the development to address the problems listed above. The authors of the paper defined functional cost dependences against the railway, vehicular and river transportation distance with the help of the software product.

We proposed the method for assessing the company's competitiveness in freight forwarding or similar activities.

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