

The Necessity to Improve the Competitive Power of “Bulgarian State Railways - Cargo Freights” Ltd.

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Abstract—“Bulgarian State Railways - Cargo Freights” Ltd. is the leading association on the Bulgarian market for carrying out railway cargo freights. In recent years, however, the freight volume has decreased and the company has reported negative financial indicators. The changes that have occurred in Bulgarian economy, the market’s liberalization, the impossibility for making investments, the obsolete rolling stock, the deteriorating quality of transport services and the reduced competitive power are among the main reasons for that. The substantiated necessity for increasing the freight volume, improving the financial indicators and retaining the market share is the main motive for writing this paper. To that end, factors from the internal and external environments have been analyzed through the implementation of PESTEL, 5 FORCES and SWOT analyses. For research purposes, a qualitative assessment has been made through a questionnaire survey among consumers of the service. The following conclusions have been drawn: strong competitiveness on the market; unsatisfactory quality; low competitive power; impossibility for carrying out investment policies due to lack of free financial resources. In order to improve competitive power, authors recommend: implementing immediate measures for improving techno-economic indicators by optimizing activities and processes, identifying the excess capacity of non-operating assets and human resources.

Index Terms—cargo railway transport, measures to increase the competitive power

I. INTRODUCTION

Bulgaria’s entry into the EU marked the beginning of deep reforms in all fields of economics and transport. The liberalization of the railway cargo freight market is already a fact and private railway cargo operators have been operating in the country since 2007. In a short amount of time, competition led to improved quality of services. These are the private carriers whose market influence becomes stronger with each passing year. The state enterprise failed to restructure and optimize itself and continued to lose customers, with its market share dropping below 50% in late 2017. The threat of

replacement services in cargo railway transport can be evaluated as HIGH, which has a negative reflection on freight volumes in the sector, with it reaching up 10% in comparison to other types of transport. The traction-rolling stock is growing old, which leads to operative problems, increased repair costs and deteriorated quality of services, which respectively reduces the competitive power.

The financial situation of “BSR – Cargo Freights” Ltd. is serious. In its short 10-year history, the association has registered negative financial indicators which result from the external environment and from ineffective internal activities and processes. The total amount of losses for this period is approximately 131 million BGN. During the 2007-2009 period the association was run through an unstable business model where earnings and expenses were determined in an administrative and non-transparent way, this reducing visibility on the state of business and impeding the making of objective management decisions. As a result, “BSR – Cargo Freights” Ltd. generated an operating loss of 25 million BGN in 2009 (the profit/loss indicator before interests, taxes and depreciation – EBITDA), despite a profit of 137 million BGN.

The 2010-2013 period was a period of reforms which removed the previous unstable business model and expenses started to be controlled in comparison to earnings. In 2011 the company managed to turn around the trend of yearly contraction of the work volume by increasing the number of transported ton-kilometers. As a result, the association gradually began to make an operating profit in 2013 (EBITDA). 2014 marked the end of the reforms. Because of the receding work volume, profits went down, expenses went up again and the association returned to a state of operating loss, with its own capital contracting by about a third, reaching 54 million BGN. During the 2015-2016 period the earnings from the main activity continued to drop, but the effect of the undertaken reforms was reflected and the association improved its financial indicators – EBITDA is a positive quantity. In 2017 “BSR – Cargo Freights” Ltd. achieved a growth of 49 000 tons of transported cargo for the first time since 2012, with a 3% growth for earnings and a 5% growth for expenses.

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Bulgarian economy is changing its balance – land transport has registered a 2% growth over the past year compared to 2016, including a 10% growth in railway transport compared to 2016. On the whole, this growth is due to two enterprises: “Aurubis” with a growth of 840 000 tons of cargo with “BRC” JSC as carrier, and “TBD” – 830 000 tons, carrier of personal production – coal [1].

II. ANALYZING THE ASSOCIATION’S EXTERNAL ENVIRONMENTAL

PESTEL Analysis

Political Factors:

- The significant investments from European funds for OP “Transport” in railway infrastructure will increase the number of high-speed routes, faster cargo delivery and improved quality of services. Nevertheless, the primary focus in the country seems to be on the development of automobile transport, with a lack of prioritization of railway transport [2];
- The interest in development on an EU level has also been strengthened by Bulgaria’s key geographical position in Southeastern Europe, which aids the development of international lanes in both main directions: West-East and North-South;
- The goals set in the White Paper focus on transference of medium-distance and long-distance cargo freights from automobile to railway and sea transport. This can become clear from the specific objectives set in the document: transference of 30% of the cargo in automobile transport over 300 km to railway/sea transport by 2030; this percentage grows to 50% by the forecast period of 2050. In addition to cargo redirection, infrastructural insurance is also being worked on, which could cover similar large-scale projects. The plan is to triple the current length of the European high-speed railway network by 2030, with 2050 being the set date for the project’s finalization [3];
- The guidelines for the development of the Trans-European Transport Network have been defined in Regulation № 1315/2013 of the European Parliament and the Council. The defined objectives are aimed at approximation, efficiency, stability and increased number of benefits for network consumers. The transport infrastructure development policy covers all types of transport and envisages the structuring of the network on two levels: primary network (it includes the most important transport connections and hubs for the EU and it should be realized by 2030) and expanded network (it guarantees full coverage of the EU’s territory and it should be completed by 2050). The primary TEN-T network on the territory of the Republic of Bulgaria includes: railway and traffic routes along the Vidin-Sofia-

Kulata and the Sofia-Plovdiv-Burgas/Svilengrad (the Turkish border) lines and the Sofia-Gorna Oryahovitsa-Ruse-Bucharest railway line.

- The mechanism for connecting Europe finances projects which fill in the missing links in Europe’s energy, transport and digital structure. The tool also helps European economy become greener by advocating for cleaner types of transport, high-speed broadband connections and the easier use of energy from renewable sources in the “Europe 2020” strategy. “The Transport Sector” will co-finance TEN-T projects and projects of “common interest”, such as infrastructure projects with high added value for the EU, along the “Mechanism for Connecting Europe” (MCE). These infrastructure investments can work with projects financed by the “European Fund for Regional Development” (EFRR), the “Cohesion Fund” (CF) and the “European Agricultural Fund for the Development of Rural Regions” (EAFDRR). Railway transport, which is significantly more environmentally friendly than automobile transport, has all the prerequisites to be preferred by multiple companies as the primary means of transporting their cargo;
- The strategy of OP “Transport and Transport Infrastructure” (OPTTI) 2014-2020 ensures the continuity and logical succession of investments from the 2007-2013 programming period, which guarantees the completion of the directions which have already been invested in. One of the priority axes formulated in OPTTI is “Development of Railway Infrastructure Along the “Main” Trans-European Transport Network” whose purpose is to facilitate the flow of merchandise and people between EU countries.

Economic Factors

- Bulgaria’s economic and financial situation has a strong influence on the demand for transport services;
- Changes in the indexes of industrial production branches directly concern the Bulgaria’s railway transport. On a yearly basis, a 1,7% growth /in November 2017, compared to the same period for 2016/ has been reported, with the data showing [4]: drop in coal mining - 23,2%; growth in metal ore mining - 0,4%; growth in the production of basic metals – 11%; drop in timber production and timber products – 3%.

Social Factors:

- Reduced harmful emissions of greenhouse gases and noise in railway transport lead to a drop in environmental pollution and minimize the negative effects on the population’s health;
- The policy of unchecked high-capacity automobile traffic during holidays has an unfavorable effect in terms of traffic accidents, considering that railway transport is twice as safe as automobile transport [5].

Technological Factors:

- One of the main technological factors is completing priority railway and road directions and advocating for multimodal transport by constructing intermodal terminals and the railway network's connections with harbors and airports;
- Progress in the development of information technology is actively reflected in the transport sector. New information systems are integrated, giving complete solutions for the freight process, the simplification of activities and "on-line" customer service.

Environment:

- A specific ecological objective in the General Master Plan for Transport is the priority increasing of the share of railway transport, which will limit the amount of harmful emissions from transport, integrate the ecological requirements in the plans, programs and projects for transport development and reduce the noise load of populated places and their unfavorable influence on their residents by exporting transit traffic through detour routes.
- The completion of the ecological objectives gives railway transport some major priorities over other types of transport. Railway transport is the most environmentally friendly type of transport in the country – 70,3% of the railway network in the Republic of Bulgaria is electrified.

Legal factors:

- The law for railway transport determines the conditions and the order of construction, maintenance, development and use of the railway infrastructure, the requirements for access to it, the main rules for the movement of trains, as well as the relations between carriers and customers when providing freight services (conditions for signing contracts with customers, carrier responsibilities during freight, delivery deadlines, returns, maintaining the safe operating condition of vehicles, administrative-criminal provisions, etc.). The law corresponds to the international contracts and treaties that the Republic of Bulgaria is a party to;
- The levels of infrastructure taxes in Bulgaria are higher, compared to the average for all countries from EU 28. A process of harmonizing infrastructure taxes in the EU is currently underway, which will reduce their size in Bulgaria. This will reduce the cargo freight costs of "BSR – Cargo Freights" Ltd. and increase the competitive power of railway transport;
- The introduction of a Toll-system for road taxes, covering heavy-freight automobiles, is envisaged; tax payment will be based on "kilometers traveled". This change will have a positive influence on railway freights.

Influence of the Competition - 5 FORCES Analysis**Competition in the Industry**

The state of the railway market for "BSR – Cargo Freights" and the market share in terms of transported tons of cargo are indicated in the graph below (see Table I).

TABLE I. MARKET SHARE COMPETITION

| | |
|------------------------------------|--------|
| "BSR – Cargo Freights" Ltd. | 39,80% |
| "BRC" JSC | 21,70% |
| "Bulmarket DM" Ltd. | 17,20% |
| "DB Cargo Bulgaria" Ltd. | 10,10% |
| SE "TCR" | 7,90% |
| "Port Rail" Ltd. | 1,60% |
| "Rail Cargo Carrier Bulgaria" Ltd. | 1,30% |
| "TBD Cargo Freights" SJSC | 0,40% |
| Other | 0,20% |

Source: National Institute of Statistics

When the railway cargo transport was liberalized in 2005, the market had a total of two licensed carriers with a total market share of 1%, whereas in 2017 they are thirteen, with a total market share of 60,20%.

The market share of "BSR – Cargo Freights" Ltd. in 2017, compared to other railway carriers, is:

- as transported tons of cargo – 39,8%;
- as net ton-kilometer work – 45,7%.

Although the association continues to be an undisputed leader on the market of railway cargo transport services with these indicators, the threat of competition is high.

Supplier Power

The suppliers of "BSR – Cargo Freights" include manufacturers and distributors of fuels, electricity and railway rolling stock.

"BSR – Cargo Freights" is one of the largest consumers of materials and resources in the country, and can therefore influence supplier prices. This increases the competition between them for attracting the association as a customer and leads to offers for more advantageous conditions.

The Threat of Replacement Products

The threat of replacement services in cargo railway transport could be evaluated as high, as seen from the following table (see Table II) for the types of cargo transport:

TABLE II. MARKET SHARE OF DIFFERENT TYPES OF LAND TRANSPORT

| Land transp. Incl. (thou-sand tons) | 2015 | 2016 | 2017 | 2018 | 2017/2018 |
|-------------------------------------|-------|-------|-------|-------|-----------|
| | 123,6 | 121,9 | 123,8 | 126,3 | 2% |
| Auto-mobile | 85,2 | 82,5 | 83,4 | 85,0 | 2% |
| Pipe-line | 23,8 | 25,1 | 24,7 | 25,2 | 2% |
| Rail-way | 14,6 | 14,2 | 15,7 | 16,6 | 6% |

Source: National Institute of Statistics

Market conjuncture is expressed in growth of land transport - 2%, including:

- Automobile - 1%;
- Pipeline - 2%;
- Railway - 10%, mainly due to two enterprises: "Aurubis" - 840 000 tons, with "BRC" JSC as carrier and "TBD" - 830 000 tons, carrier of its own production - coal.

"BSR - Cargo Freights" SJSC partially overcame the significant drop from "TBL" (700 000 tons) from attracting new customers, including "Lukoil Bulgaria" SJSC and "Lukoil Neftochim Burgas" JSC. The prime cost of automobile transport is lower than the prime cost of railway transport for short-distance and smaller cargo deliveries, which are done door-to-door. It should be noted that the market share of "BSR - Cargo Freights" Ltd. for the 2006-2017 period was 96,8%. Presently, it is 39,80%, i.e. it has dropped by 57% (see Table III and Table IV).

TABLE III. LICENSED RAILWAY CARRIERS BY THE END OF 2017

| Carrier | License Date of Issue | License Number | License Scope |
|--|--------------------------------|----------------|----------------|
| Bulgarian Railway Company JSC | 15.04.2005 BG 16.03.2011 EU | 201 | Cargo freights |
| Bulmarket Rail Cargo Ltd. | 14.05.2015 EU | 212 | Cargo freights |
| "BSR - Cargo Freights" Ltd. | 16.10.2013 EU | 203 | Cargo freights |
| "Castrade" JSC | 19.12.2013 EU | 204 | Cargo freights |
| "Unitranscom" JSC | 01.10.2008 EU | 205 | Cargo freights |
| "DB Cargo Bulgaria" Ltd. | 13.05.2010 EU | 206 | Cargo freights |
| "Express Service" Ltd. | 12.06.2010 EU | 207 | Cargo freights |
| State enterprise "Transport Construction and Reconstruction" | 28.04.2011 EU | 208 | Cargo freights |
| "Cargo Trans Wagon Bulgaria" JSC | 11.05.2011 EU | 209 | Cargo freights |
| "Port Rail" Ltd. | 11.04.2012 EU | 210 | Cargo freights |
| "Rail Cargo Carrier Bulgaria" Ltd. | 21.01.2015 EU | 211 | Cargo freights |
| "TBD - Cargo Freights" SJSC | 16.06.2015 EU | 213 | Cargo freights |
| PIMK Rail SJSC | 16.03.2016 EU | 214 | Cargo freights |

Source: National Institute of Statistics

TABLE IV. MARKET SHARES FOR 2017 WITH RETENTION OF REMAINING CARGO

| Carriers, thousand tons | 2015 | 2016 | 2017 | % |
|-----------------------------|-------|-------|-------|---------|
| "BSR - Cargo Freights" Ltd. | 8 315 | 6 201 | 6 250 | 39,80% |
| "BRC" JSC | 2 611 | 2 561 | 3 409 | 21,71% |
| "Bulmarket DM" Ltd. | 1 001 | 1 782 | 1 579 | 10,05% |
| "DB Cargo Bulgaria" Ltd. | 2 023 | 1 746 | 1 237 | 7,88% |
| "TBD Cargo Freights" SJSC | 14 | 1 863 | 2 699 | 17,19% |
| Other | 1 | 88 | 197 | 3,37% |
| Total | | | | 100,00% |

Source: National Institute of Statistics

The large number of railway carriers which have already entered the Bulgarian market and the high initial fixed costs make the entry of new competitors difficult [5].

Customer Power

The freight volume has resulted in the formation of 3 categories of customers who have signed contracts with "BSR - Cargo Freights" Ltd. for carrying cargo by railway transport and central payment of freight expenses - A, B and C. In 2017 "BSR - Cargo Freights" Ltd. signed contracts for the formation of freight prices and the conditions of their payment with 59 firms. Five of said firms have not registered any freights for 2017.

Customers have been segmented by volume indicators, namely:

- Carried out freights, expressed in transported tons of cargo;
- Ton/kilometer work;
- Invoiced freight prices and supplementary fees.

As a result, the customers who have signed contracts with "BSR - Cargo Freights" Ltd. have been placed in the following categories:

Category A - customers whose freight volume is over 100 000 tons - 14 firms;

Customers from this category have transported a total of 4 917 529 tons of cargo for 2017, or 79,3% of the total freight volume, and they form 76,5% of the earnings from the association's main activity. In comparison to 2016, the total freight volume of these customers has increased by 4,2%, their ton-kilometer work has increased 9,8%, and their earnings have increased by 6,2% respectively.

Compared to the same period from 2016, 14 companies have been registered as customers in this group, transporting 5 024 270 tons of cargo for 71 672 169,88 BGN.

Category B - customers whose freight volume is between 10 000 and 100 000 tons - 24 firms.

Customers in this category have transported 1 211 565 tons of cargo in 2017 and their relative share of the total freight volume is 19,5%. They form 22,1% of the

earnings from the association's primary activity. Compared to 2016, the total freight volume of these customers has dropped by 11,4%, their ton-kilometer work – by 13,4%, and their earnings have dropped by 16,5% respectively.

Compared to the same period from 2016, 18 companies have been registered as customers in this group, transporting 1 032 331 tons of cargo for 19 654 904 BGN.

Category C – customers whose freight volume is lower than 10 000 tons – a total of 16 firms.

These companies have transported a total of 71 106 tons of cargo for 2017, meaning they form 1,1% of the total freight volume and 1,4% of the earnings. Compared to the same period from 2016, this category registers a 12,0% drop in freight volume and 17,0% drop in earnings.

Compared to the same period from 2016, 12 companies have been registered as customers in this group, transporting 37 234 tons of cargo for 775 142,36 BGN.

Analysis of the three categories of customers shows that for 2017:

- Category A customers form 78,7% of the volume of carried out work and 76,5% of the earnings, transporting 4,2% more cargo compared to 2016;
- Category B and Category C customers form 21,3% of the volume of carried out work and 23,5% of the earnings.

In order to retain its customers, “BSR – Cargo Freights” Ltd. needs to make constant efforts on a daily basis to: improve the quality of freights, shorten delivery deadlines, prepare cars for loading/unloading in a timely fashion and provide timely and accurate information about the position of the cars at all times during transportation.

The majority of customers from Categories A and B are forwarding agents, like “CONSORTIUM MT TRANS”, “TRANSLAND” Ltd., “SHENKER BULGARIA” Ltd., “PRIME SPED” Ltd. and “TTL” Ltd. They carry out automobile and sea transport freights along with railway transport freights. The policy of shipping firms involves conducting dialogue on a daily basis and fully specifying freight conditions in order to avoid the real threat of redirecting their cargos from railway transport to competitive types of transport or other railway carriers.

An analysis of freights by customers and all related expenses from 2017 makes it clear that the achieved results are mainly influenced by freight organization. In the conditions of intense competition from private railway carriers and alternative automobile transport, increased prices would lead to loss of customers. The association focuses its efforts on reducing expenses for the realization of its primary activity.

Based on data provided by customers (forwarding agents and major shippers) and analysis of transported cargo by types, relations and quantities, a plan for 2018 by customers has been developed [6].

SWOT Analysis

Strengths:

- Commercial contracts with all neighboring and European railway carriers;
- Strategic contracts with European carriers for exchange of rolling stock;
- Capacity for transporting various types of cargo;
- Full coverage for customer services within the country;
- Developed operational activity;
- A single ferry line operator (Varna – Chomomorsk, Varna – Poti/Batumi, Varna – Caucasus);
- The largest and most varied fleet of cargo cars and locomotives;
- Flexible pricing policy;
- Well-built customer base;
- A wide range of services.

Weaknesses:

- Outdated locomotive fleet – 85% of the locomotives have excess mileage for basic planning repairs, which leads to 1858 units in need of repairs for 2017;
- Lack of qualified personnel;
- Average staff age – 49 years;
- Mandatory implementation of the Public Procurement Act (PPA) when repairing the rolling stock, delivering materials and consumables – 6-month delays in deliveries;
- Low effectiveness due to excess capacity, large cargo car turnover, high percentage of vacant runs, isolated movement and single-car freights;
- Extended cargo delivery deadlines due to low speed along the railway network;
- High rate of cargo theft and damage;
- Low employee commitment;

Opportunities:

- Increasing customer satisfaction – optimizing the processes of accepting, carting away and delivering cargo (preparation to carry out the order, delivery time, preparation of cars for unloading and their acceptance by recipients);
- Achieving a 15% growth in fuel freights (or 170 000 tons) to the value of 2 500 000 BGN (The necessary number of wagon-tanks have been provided to January 2 2018 due to a tend for growth in the oil refining industry);
- Achieving a 10% growth in construction material freights, or 140 000 tons to the value of 2 000 000 BGN due to the continuing construction and repair activities of the “Stuma” and “Hemus” highways, as well as for rail trail repairs [6];
- Increasing the volume of import/export freights – partnership with strategic Bulgarian and foreign customers for increasing the existing volumes and/or starting new freights organized with block-

trains (“Kaolin” JSC, “Trakia Voice” JSC, “Shenker” Ltd.), cooperation with terminal operators for providing complex services;

- Improving employee commitment to the association’s activity – categorizing train stations based on criteria and introducing a bonus system of employee payment;
- Developing a plan for outsourcing nodal shunting points – Iliyantsi, Burgas, parts of Ruse and Plovdiv – analyzing the maneuverable activity, starting a 3-month experiment in Iliyantsi train station;
- Developing intermodal freights and increasing transit traffic – analyzing the international market and identifying potential customers and partners, promoting the association’s services at national and international transport-logistics events, negotiations with potential customers and partners, flexible pricing policy [7];
- Improving the quality of the “transit freight” service – reducing transit time by 50%, minimizing the prerequisites for cargo damage, 24/7 information services for customers, possibilities for providing additional security for trains transporting precious cargo, etc.

Threats:

- Improving automobile infrastructure and increasing the share of automobile transport freights;
- The poor condition of the railway infrastructure and delays in the realization of infrastructure projects; the existing infrastructure does not allow the development of speed which will make the offered service competitive;
- Outflow of qualified personnel [8].

III. INFERENCES AND RECOMMENDATIONS

Based on the conducted analyses, it can be concluded that the enterprise is functioning in the conditions of strong competition on the market, with automobile cargo transport on one side and licensed carriers on the other. The quality of the offered transport service is unsatisfactory and its competitive power is low. An investment policy is impossible due to the lack of available National Institute of Statistics – official website; financial resources. Because of these conditions, it is crucial that urgent measures be adopted in order to improve the quality and competitive power of the offered transport service. There is also the growing necessity for “BSR – Cargo Freights” Ltd. to start managing its customer relations more effectively in order to retain its customers, which would also have a positive effect on the association’s market and financial results. The association’s technical-economic indicators also need to be improved through adequate actions with a view to the optimization of the operational activity, elimination of inefficiency and improved employee qualifications.

IV. CONCLUSION

Despite the difficulties it faces, the railway sector has a number of ecological advantages over other types of land transport [9]. Because electric traction is so widely applicable, railway transport is more energy efficient than automobile transport and it has a far less negative impact on the environment. Compared to automobile transport, it consumes 8 times less energy for the transportation of one ton of cargo. The completion of the ecological objectives gives railway transport major priorities over other types of transport. Railway transport is the most environmentally friendly type of transport in the country – 70,3% of Bulgaria’s railway network is electrified. In order to become a more flexible and permanently profitable enterprise, “BSR – Cargo Freights” Ltd. needs to react adequately and proactively to market realities and seek effective approaches and innovative methods for retaining its market positions, increasing its competitive power and improving the quality of the services it offers [10].

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- Research Activity Project №1-21/2011 “Strategies for Improving the Competitiveness of Transport Enterprises in Conditions of Crisis” (University RA project of the Department of “Economics of Transport and Energy”, UNWE) – member of the research team headed by Associate Professor PhD Violeta Bakalova;
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- Research Activity Project № 1-7/2014 “Improving the Effectiveness of Passenger Transport in the City of Sofia” (RA project of the Department of “Economics of Transport and Energy”) – project leader;
- Project for a Scientific Forum (conference) on the subject of “The Stable Development of Urban Passenger Transport Within Sofia Municipality” (University RA project of the Department of “Economics of Transport and Energy” – project leader (2018).

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