Graduate School of Management

St. Petersburg State University

Development of logistics business in railway companies: comparative study of JSC Russian Railways and Deutsche Bahn AG

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ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ

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26.05.2016 (Date)

**АННОТАЦИЯ**

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| Описание цели, задач и основных результатов | *Цель исследования* состоит в том, чтобы оценить текущее состояние логистического бизнеса в компании ОАО Российские железные дороги и на основе успешного опыта накопленного в Deutsche Bahn AG предложить направления для его совершенствования.  *Объектом исследования* является железнодорожные компании - ОАО Российские железные дороги и Deutsche Bahn AG.  *Предметом исследования* является особенности развития логистического бизнеса  В ходе исследования были выявлены основные проблемы, препятствующие развитию логистического бизнеса в ОАО Российские железные дороги, и главные факторы, которые способствовали Deutsche Bahn AG добиться успеха в логстиеском бизнесе. Затем на основе полученных результатов, были разработаны предложения по совершенствованию логистического бизнеса в ОАО РЖД. |
| Ключевые слова | Логистический бизнес, железнодорожные компании, ОАО Российские железные дороги, Deutsche Bahn AG |

**ABSTRACT**

|  |  |
| --- | --- |
| Master Student's Name | Anna V. Melnikova |
| Master Thesis Title | Development of logistics business in railway companies: comparative study of JSC Russian Railways and Deutsche Bahn AG |
| Faculty | Graduate School of Management |
| Main field of study | International Logistics and Supply Chain Management |
| Year | 2016 |
| Academic Advisor's Name | Yuri. V. Fedotov, Dr./PhD, Associate Professor |
| Description of the goal, tasks and main results | *The goal of the study* is to the current state of logistics business in JSC Russian Railways, identify the main problems and based on successful experience of Deutsche Bahn AG suggest the directions for its improvement.  *The object of study* is railway companies - JSC Russian Railways and Deutsche Bahn AG.  *The subject of the study* is peculiarities of logistics business development  During the study were identified the main problems with the setting up of logistics business in JSC Russian Railways and main factors allowing Deutsche Bahn AG to achieve a success in logistics business. Then based on these result, there were developed proposals for the improvement of logistics business in JSC Russian Railways. |
| Keywords | Logistics business, railway companies, JSC Russian Railways, Deutsche Bahn AG |

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**Introduction**

JSC Russian Railways is of extremely high strategic importance to the Russian Federation and its economic development This company is one of the largest consumers of goods and services in the country, one of the biggest employers and performs state-forming and social functions, linking vast territory of Russia. It plays a crucial role in transportation of the essential goods, ensuring uninterrupted functioning of the industrial complex and has a significant share of turnover in the country transport system.

About 90% of JSC Russian Railways revenue is generated by the provision of basic transportation services (infrastructure and locomotive traction), which is regulated by the government and experiences, according to recent estimates, a gradual decline on the market of transportation and logistics services. While the value-added services (freight forwarding, warehousing services, contract and integrated logistics) are expected to grow significantly due to the economy growth, the increasing complexity of supply chains and the increasing demand for complex logistics products by 2030. Moreover, today JSC Russian Railways faced with significantly increased competitive pressure from road transport, able to provide door-to door servicies.

During last several years in order to secure its long-term development, JSC Russian Railways was forced to make a transition from the old business model, where the company acts only as a carrier to a new model, where JSC Russian Railways should become a transportation and logistics company.

***Research problem***

Realization of this significant change, especially in such large company as JSC Russian Railways having complex structure and processes is not a trivial task, requiring analysis of current situation and successful experience. Company already has implemented several steps towards the development of logistics business, however, the overall progress is hard to estimate and rather slow due to different reasons that are not obvious in most of the cases and require thoughtful consideration.

*The goal of this study* is to investigate the current state of logistics business in JSC Russian Railways and based on successful experience of Deutsche Bahn AG suggest the directions for its improvement.

*The object of study* is railway companies - JSC Russian Railways and Deutsche Bahn AG.

*The subject of the study* is peculiarities of logistics business development

In this regard, the main research question of the master's thesis is “How to improve the development of logistics business in JSC Russian Railways?”

In order to answer to the main research question and gradually show how theoretical background can be used to support the answer, the following *sub-questions* were developed:

* Why Russian Railways experience difficulties with setting up logistics business?
* How logistic business was developed in Deutsche Bahn AG?
* What practices used by Deutsche Bahn AG may be implemented in JSC Russian Railways in order to improve the development of logistics business?

In order to answer on these questions it will be necessary to conduct a thorough analysis of the literature related to the main topic, such as logistics concept, supply chain managment concept, levels of logistics providers, reforming of railway sector, new institutional economics, strategic management and strategic human resource management.

The next step will be the analysis of the current stage of JSC Russian Railways Transportation and logistics business unit, created for development of logistics business, in order to identify the main problems.

Then the Transportation and logistics division of Deutsche Bahn AG will be analyzed. In particular, its business unit - DB Schenker, which is one of the world's largest providers of integrated logistics services with the global logistics experience and significant railway base, offering land operations, air and sea freight as well as logistics solutions and global supply chain management from a single source in order to understand how it has achieved such successful position.

Comparative analyses of both companies will help to identify the main trends and patterns in development of logistics business in railway companies and define proposals for the improvement of logistics business in JSC Russian Railways.

***Research methods***

A comparative case-study approach will be adopted as the main guidance for the study.

Under the principle of case studies, multiple instruments will be used in the data collection in selected case study companies. Data will be collected by means of theoretical and empirical methods:

* Primary data (interview);
* Secondary data (databases, reports, etc.)

The results of the study are supposed to the scientific, practical and social value, since the undertaken research devoted to the actual problem, which is not examined on decent level, and aims to investigate the general patterns and propose possible solutions for improvements.

1. **Theoretical bases of logistic approach to the organization activity**

Transportation plays a key role for any country at both on national and global level of operations, stimulating or hindering the economic development (Krugman, 1979).

As a rule, there are the following transportation modes functioning in parallel in each country: road, maritime, air, pipeline, railway. In order to choose the transportation mode the following set of constraints should be taken into the account such as transportation time, transportation cost, transportation distance, cargo peculiarities, as well as environmental factors including geographic, weather conditions and navigation (in case of river and sea transport). According to (Mesut Kumru, Pınar Yıldız Kumru, 2013) the main criteria for selection of transportation mode for a logistics are the transportation cost, speed, safety, accessibility, reliability, environmental friendliness, and the flexibility of transportation. However, it is not the only tasks in the field of planning of the transportation process, which also includes the determination of vehicle type, the specification of the route and the tracking of the planned activities.

Modern transport market requirements identified new challenges to be met by the participants, organizing the movement of cargo and passenger flows in the system. The formation of customer-oriented market requires the creation of delivery schemes to meet customer demands on the highest level to gain competitive advantage. While market becomes more competitive and less predictable, customers become more experienced and demanding (Yakunin, 2012). In the field of transportation services, in order to attract, satisfy, and retain customers there should be placed an increased attention to expansion of the logistics services range, customer information, long-term relations on a contract basis and ability to support complex transportation projects that will increase customer value (Bowersox et al., 2000).

First of all, we should investigate the concept of logistics and its role in the development of transport sector.

1.1.1 Evolution of logistics concept

The concept of logistics is not new, and historically there are references to it in ancient Greece and then in Rome. Nowadays, there can be defined at least three its directions: mathematics, military area and economics.

Semantic roots of logistics come from ancient Greece language (logo- to think), laying the foundation of its mathematics development, where logistics is using for designation of mathematical logic systems. The logistics concepts found in sources until the middle of the last century for the military area, where still has not lost its relevance. In 1958, as per Webster’s New World Dictionary of American Language, logistics was used purely as a word to describe military strategy. The development of the term in the field of the national economy was especially noticed in the period after the Second World War.

Table 1.1 - Evolution of the term "logistics"

|  |  |
| --- | --- |
| Definition | Source |
| The art of managing of the troops movements both far and near from the enemy, the organization of their rearward support | Military Encyclopedic Lexicon. St. Petersburg, 1850 |
| Mathematical logic | Dictionary of modern Russian literary language. MA: LA: USSR Academy of Sciences, the Institute of Russian Language T. 1-17, 1948-1965 |
| Staff service technology, rears calculations, transportation and supply | Mueller V.K., English-Russian dictionary. Moscow: Gos. Publishing House Foreign  and national dictionaries 1963 |
| Rear and supply, rear work | Mueller V.K., English-Russian dictionary. Moscow: Russian language, 1990 |
| Military science associated with the supply, support and movement of materials and people | Webster’s Desk Dictionary. N. Y. : Portland House, 1990 |
| Control of motion and logistics of the armed forces. Along with the tactics, strategy and exploring logistics is one of the four major elements of military science. The term "logistics" can also be referred to supply and sales activities of civil enterprises | The Encyclopedia Americana. International Edition. Danbury : Grolier Inc., 1991 |
| Organization, planning, control and execution of the flow from design and procurement through production and distribution to the end user in order to meet market requirements with minimal operational and capital costs | Terminology in Logistics. ANNEX  Dictionary. European Logistics Association, 1994 |
| The process of planning, implementing and controlling the efficient, effective flow and storage of goods, services and related information from the point of origin to the point of consumption for the purpose of confirming to customer requirements | The Counsel of Logistics Management, 1998 |
| Planning, monitoring and transportation management, warehousing and other tangible and intangible transactions occurring in the process of bringing raw materials to the manufacturing facility, in-plant processing of raw materials and semi-finished products and bringing the finished product to the consumer in accordance with the interests and requirements of the latter, as well as transfer, storage and processing of relevant information | Rodnokov A.N. Logistics: Glossary. MA: Economics, 1995 (2nd ed M.:. INFRA-M, 2000) |

Despite the fact that there are different perceptions of logistics, it is possible to define the two main streams:

* *Logistics as an integrated management tool*, which involves the integration of logistics functions, such as transportation, warehousing, distribution of material resources, inventory management in supply chains, information and service support, material flows, planning, management and control of logistics activities in compliance with rules 7R - "to ensure the right product in the desired quantity and quality specified in the right place at the scheduled time for a particular customer with the best cost" (Sergeev, 2006)
* *Logistics as scientific direction* involves optimization of economic flows by the overcoming of the links isolation of the logistics chain with the aim of coordinated management of material flow (Kovalev, 2014).

Moreover, the main trend in the evolution of logistics is integration, which may be traced ***from 1960s***, when all functions were highly fragmented. In this period, the focus of business development shifted from production to sales, determined by demand, which pushed companies to increase product range and inventories and, as result, pay more attention to physical distribution in order to reduce costs.

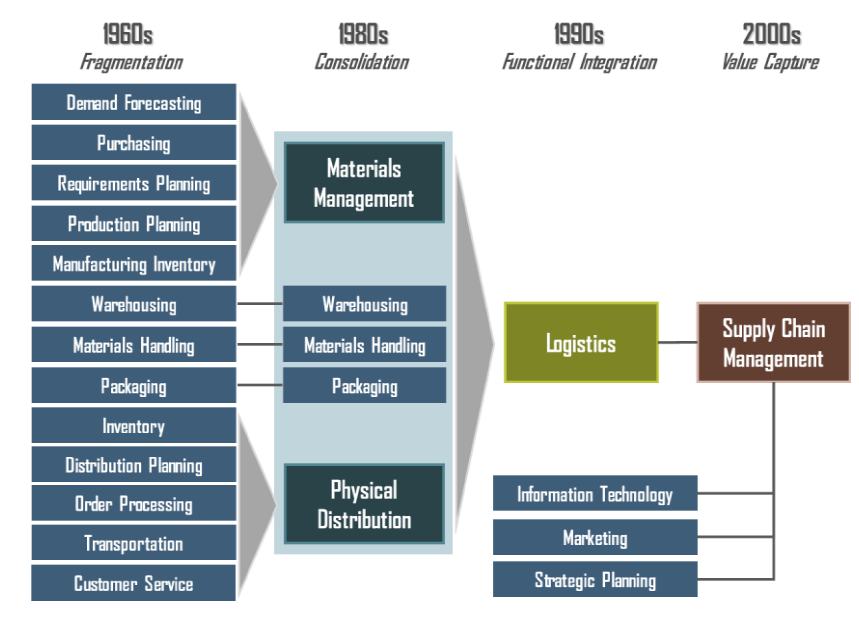


Figure 1.1 - Evolution of Supply chain management concept

Source: The Geography of Transport Systems. (n.d.). Retrieved May 26, 2016, from https://people.hofstra.edu/geotrans/

***By the 1980s*** logistics systems was developing in the direction of more close coordination and integration of material, information and financial lows, resulting in development of two isolated functions - materials management and physical distribution. Transportation sector started to perform more and more specialized services. Moreover, requirements to the transportation increased due to the development of *quick response* logistics strategy (Salmon, 1993), basing on continuous analysis of market demand and production of minimal needed amount of goods. That trend pushed transport companies to work on *just-in-time* principle, when shipment volumes changes according to market conditions and timeliness of delivery becomes important factor of service quality. Moreover, on the market appeared new players – *3PL providers* (Croucher et al., 2000), which will be described in detail further. In general, such changes added complexity to the transportation organization and inventory management, triggering processes of business restructuration and consolidation, creation of diversified holding structures in transportation industry.

***In 1990s*** globalization caused a functional integration and, as result, the development of logistics, which with further complete integration based on modern information and communication technologies led to emergence of supply chain management experiencing continuous developments ***during 2000s*** in order to increase value capture and will undergo radical transformations by 2025 due to new technologies, competition, and customer demands. In 1998, Council of Supply Chain Management Professionals, determined logistics management, as a subset of SCM that will be investigated in the following chapter.

1.1.2 Supply Chain Management concept

Porter (1985) developed a concept of business management based on “value chain”, showing that single management of processes such as design, procurement, production, distribution, sales, services allows to obtain total added value greater than that resulting from different processes. As result, competitiveness of such integrated network becomes higher than competitiveness of isolated organizations, which interacts in production and distribution process, but lacks the single management.

The development of such idea led to emergence of Supply Chain Management concept, which becomes fundamental at modern logistics. The concept of the supply chain in the scientific literature often revealed as a linearly ordered set of individuals and/or entities (suppliers, intermediaries, transporters), directly involved in bringing the particular batch of products to the consumer in order to add value to customers and stakeholders (Lambert, 1998). The overall performance of the enterprise largely depends on chain to which it belongs. The achieving of effective inter-institutional coordination in the supply chain increases the effectiveness of the supply chain and its individual units (Mentzer, 2001).

However, at traditional supply chain inevitably occurs "the conflict of interest" between links-companies that focus on profit from their activities and are not always ready to possible concessions, as management is decentralized. Moreover, the traditional supply chain mostly applies undifferentiated “one size fits all” principle to supply lines, service offerings and customers, while modern time require more customer-driven and risk-aware approach (Lawrence, 1990).

At modern supply chain, the first priority is system integration of all chain characteristics and negotiation of occurring processes. The total cost of development, procurement, production, storage, transportation, marketing and other functions implemented in different parts of the chain, as well as the associated risks are recorded and intelligently distributed so that the interests of individual participants of the chain were agreed and coordinated. The leading role to resolve such task should be assigned to the *focus company*, which will define supply chain structure and take management and strategical decisions.

To sum up, the transition from traditional supply chain to modern is, first of all, transition from local solutions, provided by individual participants in order to achieve their own interests to unified management in order to increase the competitiveness of the whole supply chain. Nowadays the real competition is not between companies, but between different supply chains (Handfield, 2006)

Transportation companies, participating in supply chains started to provide services beyond the basic transportation function: warehousing, packaging, pre-sale preparation of goods, information processing, and even the simplest forms of production services, such as customization.

To conclude with, we can observe the deepening of the logistics theory with the simultaneous expansion of the practical application of the logistics tools. It is marked by the appearance and active use of the new logistics concept - Supply Chain Management, transformation of logistic services market, formation and accelerated development of production, commercial and retail networks structures, the emergence of a new type of logistics intermediaries, so-called 3PL and 4PL providers, which nature will be described further.

**1.1.3 Main interrelated layers of logistics services**

In recent years, third-party logistics (3 PL), also called logistics outsourcing has received considerable attention from different researchers, investigating this field (Knemeyer et al., 2003; Maltz and Ellram, 1997; Razzaque and Sheng, 1998; Marasco, 2008).

3PL-operator market is developing, as a result, of the growing requirements for more complex logistics services due to such changes as globalization, reduction of lead times, customer orientation and outsourcing. The integration of the supply chain has become an important process for companies on their way to gain a competitive advantage (Sanders et al. 2007; Anderson et al., 2011).

It should be noted that there is quite a significant difference in the interpretation of the key terms of logistics in the Western and Russian literature. Russian literature defines 1PL, 2PL, 3PL, 4PL, 5PL operators, while in the Western literature terms 1PL, 2PL does not exist (Saglietto, 2013). 1 PL-"first party" of logistics is the shipper, the "second party" - the consignee, and the term third-party logistics is associated with the appearance of the third player (third-party of the contract), but not with the "generation" of the operator (PL). Therefore, under the «PL» should be understood not a single logistics operator, and the model of strategic relations between the players in the logistics market. Most likely, these differences are born as a result of an incorrect interpretation of the term «logistics», which in English means the process, rather than a function, and is part of the supply chain management (Christopher, 2011).

*The development of logistics providers from Western literature perspective*

To begin with, there will be considered the Western literature devoted to the classification of logistics providers. Chronologically, development of the logistics services market originates from the logistics performed by the company «in-house», passes through an appeal to the third-party company - provider of a logistics services - "insourcing” and reaches 3PL level - the emergence of an intermediary between the supplier and the consumer, who, on behalf of the supplier carries out logistics processes. It is hard to find only one definition of 3PL as it includes many different aspects ([Lieb, 1996](http://www.emeraldinsight.com.ezproxy.gsom.spbu.ru:2048/doi/full/10.1108/09600031211250587)). Terms such as “logistics outsourcing”, “logistics alliances”, “third party logistics”, “contract logistics” and “contract distribution” are frequently blurred. (Marasco, 2008).

The main drivers for companies to outsource their logistics functions is ability of 3PL provides to create value ([Stauss, 2008)](http://www.emeraldinsight.com.ezproxy.gsom.spbu.ru:2048/doi/full/10.1108/09600031211250587) trough cost cutting, quality improvements, more flexible processes, innovation and service provider's know‐how.

However, according to [Stauss (2008)](http://www.emeraldinsight.com.ezproxy.gsom.spbu.ru:2048/doi/full/10.1108/09600031211250587) there are three paradoxes: core‐competencies vs innovation, cost vs innovation and standardization vs innovation. There is a goal conflict between developing and reduction of cost, quality deficits, and/or complexity, especially in terms of diversity.

Further, there is an expansion of services package provided by the operator. So, 4PL-operators integrate the actions of several 3PL company level. The participation of 4PL service provider, resulting in sustainable competitive advantage throughout the supply chain (Büyüközkan et al, 2009).

According to the Council of Supply Chain Management Professionals the main differences of 4PL from 3 PL are:

* 4 PL-provider - a private company, founded as a joint venture or resulting from long-term contract between the main client and one or more partners;
* 4 PL- provider - the only one mediator between the client and multi-functional logistics services providers;
* 4 PL- provider, ideally, manages all the aspects of the client's supply chain;
* 4PL – provider may be created from the large 3PL - company based on its current structure.

All of the above types of outsourcing in logistics are shown schematically on Figure 1.2

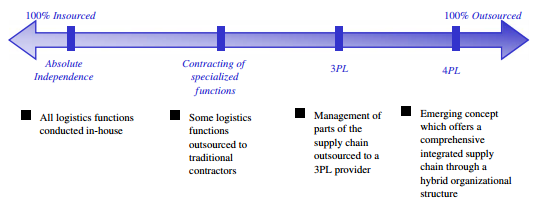


Figure 1.2 - Types of outsourcing in logistics (Büyüközkan et al., 2009)

The chronological order of outsourcing in logistics is reflected in Figure 1.3

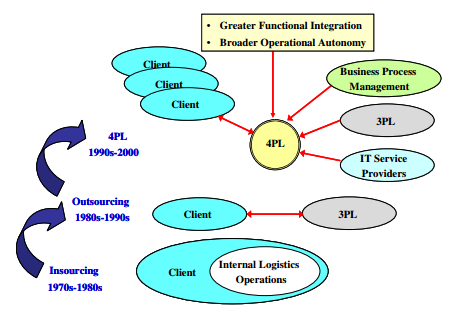


Figure 1.3 - Evolution of outsourcing in logistics (Gattorna, 1998)

Relatively new is the concept of 5PL, bringing together the key elements of all functions in one entity on the basis of an electronic platform (Screeton, 2009). However, now this type of integration is rather a commercial project than a new stage in the supply chain management development, as outsourcing level of 5 PL is the same as that of 4PL.

*The development of logistics providers from Russian literature perspective*

As it was mentioned before Russian literature in comparison with Western one identifies not only 3 PL, 4 PL and 5 PL, but also the 1 PL and 2 PL providers. Summarizing the papers (Yakunina, 2014; Glazkova, 2013, Dementyev, 2013) there can be provided the following classification.

1PLoperator is represented by cargo owner and is usually perceived as an autonomous logistics, when all the necessary operations (warehousing, transportation, etc.) are carried out by the cargo owner using its own infrastructure and staff.

*2PL -* the simplest form of outsourcing of logistics services and relates to the carriers (rail operator, trucking company or a maritime shipping company), which provide a transport service inside the particular stage of a transport chain, such as: transportation, warehousing, transshipment, operating their own assets or the assets of other business units included in the overall holding company. The main driver for firms to work with 2PL operators is to decrease logistic system operational cost and avoid high capital investment. The work of 2PL operators does not require advanced IT systems to control and coordinate their activities.

*3PL* is a more elaborate form of outsourcing and represented by qualified logistics providers, which may obtain physical assets and share in particular transport segment, with a broad range of services. A complete range of logistics services, from the delivery and storage to orders management and goods tracking is given to the transport and logistics organization, which, however, has not been integrated into the client's business and does not work with the entire supply chain. The 3PL services: transportation, warehousing, crossdocking, inventory management, packaging, tagging services etc. that are outsourced by the customer and confirmed by the signed long-term contract. 3PL needs advanced IT solutions for coordinating and managing of logistics activities within the supply chain.

The fact that 3 PL operators focus mostly on tasks implementation, but not on the whole process as the SCM concept requires it, triggers the appearance of the next outsourcing level– 4PL in the 1990s. 4PL provides not only services of complex transportation logistics, but also takes responsibility of client supply chain management and development as well as client business processes management.

Nowadays *4PL operator* perceived as the integrator of the supply chain and accumulator of its and other organizations (usually 3 PL) resources, opportunities and technologies. In comparison with 3 PL provider, which services actually have tactical nature, 4 PL focuses on strategic tasks such as analysis and reengineering of clients business processes and new technologies implementation. To the main characteristics of 4PL firms may be attributed:

•“virtual coordinator” of all 3PL providers activities operating within the supply chain;

• “non-asset based logistics providers”, supported by advanced IT and software solutions. and based on “real-time” information)

*5PLprovider* - logistics operator, which offers a full range of services by the use of high-tech IT-products, allowing to collect all information about logistic capabilities of market participants and to build the most optimal logistics chains. 5PL similar to 4PL has no tangible assets and focuses on strategic supply chain management, but simultaneously more oriented on “virtual enterprise" model. Some experts suppose that 5PL does not significantly differ from 4PL and only improves the previous level by the optimization of searching for logistics solutions.

In order to summarize the main findings based on the analysis of (Yakunina, 2014; Glazkova, 2013; Dementyev, 2013), different types of logistics providers are represented in Table 1.2

Table 1.2- Comparison analysis of different types of logistics providers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Criteria** | **2PL** | **3PL** | **4PL** | **5PL** |
| Services type | Tactical | Tactical | Strategic | Strategic + IT-management |
| General function | Simple transport service inside the particular stage of a transport chain | Several or all function connected with physical movements in client interest | All logistics functions within supply chain with the stress on improvement of all supply chain | Convert client supply chain into system managed by IT |
| Contract | Without a permanent contract | Long-term contract | Partnership, joint business | Partnership, a joint business |
| Assets ownership | Possess tangible assets | Can possess or not tangible assets, the main of which is knowledge | Almost doesn’t have tangible assets, the main- knowledge and technologies | Almost doesn’t have tangible assets, the main- knowledge and technologies |
| Potential clients | Companies with no resources or knowledge to execute operations | Companies with no resources or knowledge to execute operations | Companies with sophisticated supply chains | Huge companies with very complicated supply chains |
|  | Optimization of the individual functions | Integrated optimization of business processes | Optimization of business processes through the integration of the supply chain | A significant reduction in the cost of logistics services through the use of advanced IT- solutions |

To conclude with, the development of logistics outsourcing passed through a number of stages accompanied by the emergence of different types of logistics providers, each of which is represented by a number of characteristics. However, in some cases the boundaries between logistics layers is blurred, moreover, even between the theorists there is no only one precise classification of logistics services providers that may also cause misunderstanding in practice and the erroneous assignment of any company to the one or another level of logistics operators.

**1.2 Reformation of railway transport**

According to the analysis of structural changes carried out in the last century in different countries, the reformation of railway sector was a strategic goal supported by the State. The change in the interaction mechanisms between participants, the allotment of new players, change of the State role as the regulator of a new relationship are carried for a long time with considerable financial and legal support from the first industry investor –State.

The traditional organizational structure for most of the world’s railways in the post-war period was that of a vertically-integrated monopoly owned by the public sector. According to the retrospective analysis, many developed countries at different times faced the problem of low sector profitability or even its losses. This problem is solved by a variety of different algorithms, however, there is a general trend - the reforming of the existing relations within the system. The fundamental change in the structure, management of logistics and the allocation of competitive market segments identified opportunities to address the problems of low economic performance of the railway (Dyubanov, 2009).

As a rule, when the government face the problem of infrastructure and rolling stock depreciation, inefficient system of industry management and the lack of the necessary investments it takes a decision to restructure the industry.

As there are significant differences between the rail systems (transportation structure and length) and large number of targets in different countries there can not be a single model and reforming scheme (Thompson, 2013).

Experience shows that railways structure formed of three basic structural elements:

* *Business organization* - the extent to which its executive units should be formed by commercial principles, including the option of private property or the implementation of core functions of the railway;
* *Market* competition- extent to which rail transportation services should be competitive, such as competition between rail operators;
* *Separability*- the extent to which its monolithic structure must be broken down with the separation and decentralization of some of its units.

Naturally, these three elements are interrelated and their combinations determine the specifics of the industry structure.

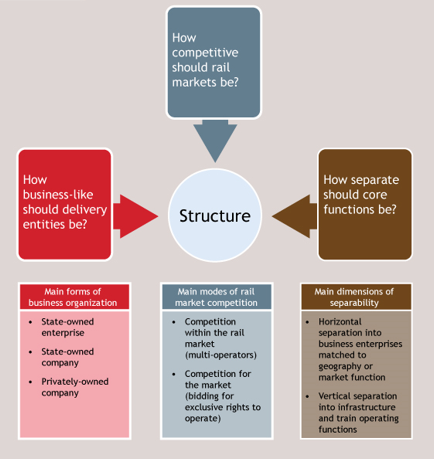


Figure 1.4-The main building blocks of rail industry structure

Source: Railway Reform: Toolkit For Improving Rail Sector Performance. (n.d.). Retrieved May 26,2016,from http://www.ppiaf.org/sites/ppiaf.org/files/documents/toolkits/railways\_toolkit/ch3\_1.html

Despite the apparent diversity, all regulatory models tend to the following three forms (Khusainov, 2011):

1. **Unitary model** - railways are a state monopoly converted during the reforming into one of the above models;
2. **American model** –no single economic entity, the presence of a few vertically integrated companies competing in overlapping networks (the high level of monopoly power, a high probability of discrimination in terms of infrastructure access, but higher incentives to invest into infrastructure);
3. **European model** - the infrastructure, belonging to a single owner (state or private, receiving state subsidies), is separated from carriers who, in turn, compete with each other for the right to infrastructure access (easier to regulate, lower level of carriers monopoly power, low probability of discrimination in terms of infrastructure access, but low incentives to invest into infrastructure).

Low incentives for investment is not a minor factor. It should be noted that the infrastructure consists of the network of various types of transport, informational channels and systems, means of communication and locomotion, storage facilities, external provision of energy resources, financial supply systems for logistic processes, service companies for citizens, etc.

So, the investment process into logistics infrastructure ensures the productivity of logistics systems and sectors of production and services. Finally investment causes the country’ competitiveness and economic growth (Masiulis et al., 2009).

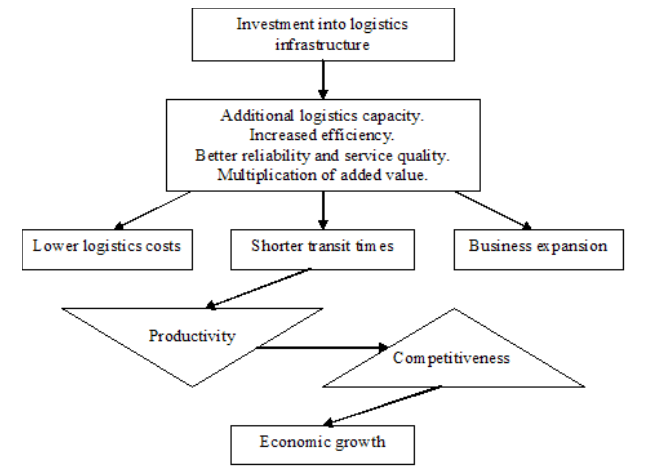


Figure 1.5 - The impact of investment into logistics infrastructure (Masiulis et al., 2009)

At the moment, the period of reforming the railways is insufficient in order to draw conclusions about the success of the industry reform. Below is brief analysis of reforms in different countries in table form in order to identify the main tendencies

Experience in a number of successful reforms allows us to formulate four main points (Moyer, 1992):

* the separation of the existing railway system from government regulation (isolation of operational and commercial functions from the social and political implemented by the Government).
* the introduction of a management system by type of transportation (freight and passenger transportation in suburban and long-distance communications have particular characteristics of demand, competition, regulation, subsidies);
* the introduction of vertical separation system (division of exploitation and management of infrastructure);
* the creation of private partnerships (the private sector has a huge potential for implementation of projects for the construction and commissioning of new railway lines, but the privatization can not give the expected results in case of incurred significant preliminary expenses under not properly evaluated premises).

Analysis of the reform of the railway sector allows to identify the most promising areas of the transformation processes and relationships, identify potential problems that the domestic structure may face not only during the restructuring, but also in subsequent periods, as not all changes in existing relationships had positive results and can be considered as successful.[[1]](#footnote-1)

1.3 New institutional economics principles.

As the logistic theory, rail transportation systems as well is under continuous development and sometimes significant transformation, therefore it is reasonable to turn to the new institutional economics (NIE), which “is an interdisciplinary enterprise combining economics, law, organization theory, political science, sociology and anthropology to understand the institutions of social, political and commercial life”. The primary aim of NIE is to show “what institutions are, how they arise, what purposes they serve, how they change and how - if at all - they should be reformed” (Peter G. Klein 1999).

To begin with, it is important to determine the four levels of social analysis that are distinguished in Figure 1.6 (Williamson, 2000).

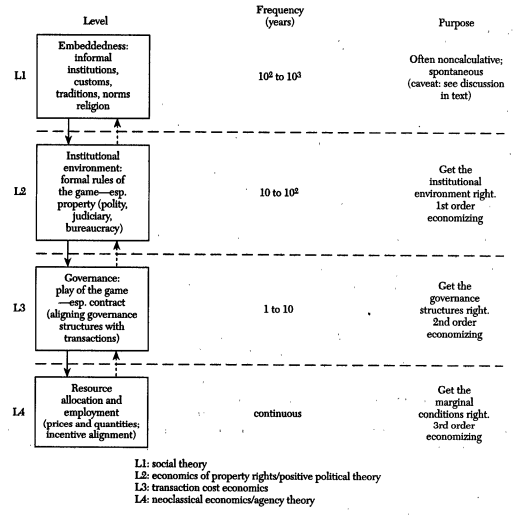


Figure 1.6 -Economics of Institutions

*Level 1*- is the social embeddedness level (informal constrains: norms, customs, mores, traditions, etc.). There may be differentiated several types of embeddedness—cognitive, cultural, structural, and political (Smelser, 1994). The most important factor to consider at this level is a very slow speed of institutions changes (centuries or millennia), because here institutions are functional, having symbolic value to true believers or linked with other formal and informal institutions, etc.

*Level 2*- is called as the institutional environment (formal rules: executive, legislative, judicial, and bureaucratic functions of government, power distribution between government levels).

*Level 3*- the institutions of governance. Here the focus is on management of contractual relations. Based on transaction cost economics, the transaction and governance is creating an order to mitigate conflict and receive mutual benefits.

*Level 4* is the level connected with neoclassical analysis. Here the firm is usually shown as a production function. Agency theory suggesting ex ante incentive alignment and risk management instead of ex post governance creates provision for nonneoclassical complications such as multi-tasking (Holmstrom, 1991).

Further there will be investigated several ideas and theories connected with NIE.

*Theory of the firm*

The theory of the firm from the economist point of view is theory of production, where firm just is a ‘black box’ converting inputs into outputs, while the NIE describes “the firm as a set of arrangements - as an organization” (Klein, 1999), where its internal structure provides as economic effect.

Moreover, it was shown that besides the production technology the organization boundaries related to costs of transacting business (Coase’s 1937). In the further development of this framework, the ‘make or buy decision’ (transactions organization within the firm or on the open market) should be based on the comparison of internal and external exchange costs (Williamson, 1985), which then determine the nature of the firm.

This new economist thinking perceived the firm as a management structure, which succeed in case if managers will be able to effectively coordinate firm activities and “match people and inputs to current technologies and markets” (Roe, 1994, p. 7).

*Agency problem*

Another important approach that should be taken into consideration is the moral-hazard or agency-theoretic approach, which is connected with ‘separation of ownership and control’ in the large companies that are governed by managers, which may have different goals in comparison with stakeholders (Berle, 1932).

*Transaction cost economics*

Transaction cost economics (TCE) -occasionally called as the NIE ‘governance’ branch -is an approach to investigate the institutional arrangements focusing on management of transaction that require governance structure, depending on transaction characteristics (Williamson, 1985), to escape from different hazards caused by exchange. This approach states that costs appear at economic organization due to the unavoidable incompleteness of complex contracts caused, according to Williamson, by ‘bounded rationality’.

In general, the main factors causing transactional difficulties are asset specificity, uncertainty, arrangement complexity and the transaction frequency, where the asset specificity represent different relationship-specific investments, such as physical and human capital as well as intangibles. Moreover, the higher such factors the higher the probability to observe the more integrated governance structure.

Governance structures, as it shown on the Figure 1.7 varies from market to hierarchy, where on the one end is pure anonymous spot market with simple transactions, where prices provide not only incentives for taking advantage of profit opportunities, but also information helping participants to adapt quickly to changing environment. While on the other end fully integrated firm lies, implying the single ownership and control over all trading parties, which means greater protection for specific investments and coordinated adaptation allowing to effectively respond to change, however there are weaker incentives for managers to maximize profits and bureaucratic costs.



Figure 1.7 - Governance structures (Klein, 1999)

As result, there are a lot of different ‘hybrid’ structures between these two extreme side. In order to choose the most appropriate one it is important to consider “a tradeoff between the high-powered incentives and adaptive properties of the market and the safeguards and central coordinating properties of the firm” (Klein, 1999, p.469).

Eventually market forces identify more and less efficient transactions and governance structures, especially if their particular results are observable over five and ten years, but it dies not happen automatically. In case of vertical integration - ‘backward integration that lacks a transaction cost rationale or serves no strategic purposes will presumably be recognized and will be undone’ (Williamson 1985, p 119-20), especially when the firm faced increased competition.

* 1. Strategic approach to the realization of company goals

The field of strategy was investigated significantly in the last twenty-five years. In general, strategy defines the business model to compete on market, while business model explains how firm works in order to create value for its stakeholders (Casadesus-Masanell, 2010).

In Literature as usual the three levels of strategy are defined (Figure 1.8) called as corporate, strategy strategy, business strategy and functional/operational strategy (Salimian, 2012).

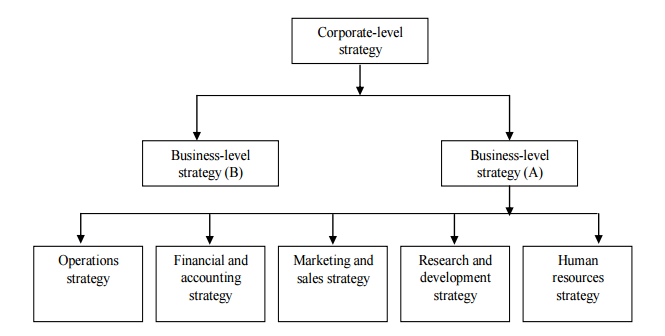


Figure 1.8 – Levels of strategy

*Corporate level strategy* defines the businesses, which are included into the company, and their relationships. *The business level strategy* is responsible for definition of company competitive advantage, that should differentiate it from competitors. *Operational or functional level strategy* explains the specific actions of each operational unit should implement in order to achieve competitive advantage. .

*Business Model****:*** Business model is the structure on which the business is grounded, determining what the business does in order to generate profit without deep explanation of operating systems (Casadesus-Masanell, 2010). Margeretta, (2002). The reasons for the strategy fail are the setting of unrealistic goals, performance targets and lack for clear direction ( Madu, 2013).

1.5 Strategic human resource management

Human resources are the subject of a number of management disciplines (organization theory, theory of organizational change, organizational behavior, human resources management) and labor sciences (labor economics, economics, personnel, labor psychology), developing some methods and technologies of work with the staff to improve the social and economic efficiency of the organization, however, sometimes overlooking long-term goals of the organization. While the strategic human resource management (SHRM) is trying to integrate the business strategy of the organization with the final results of its activities through the human resource management function.

The resource-based view of the company has become the base for the theoretically grounded interpretation of the potential role of human resources as a strategic asset of the company. (Wright & McMahan, 1992). , defines resources according R. Daft - "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by the company that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness.". (Daft, R. 1983)

According to J. Barni, one of the founders of the resource-based view concept, organizational resources have four specific characteristics: value, rarity, inability to be imitated, lack of substitutes - and can be divided into three groups: physical, human and organizational capital. J. Barney argues that a competitive advantage is the result of the acquisition and effective use of the distinctive resources that competitors can not copy. For human capital, he considers education, professional experience, views, intelligence, relationships, understanding of organizational processes by managers and employees.(J. Barni, 1991 ).

While G.Hamela and K.Prahalada noted that a competitive advantage can be achieved if the company will receive and develop human resources that will enable it to quickly learn and efficient to use their knowledge than its competitors (Prahalad, Hamel, 1994)

Armstrong's states that states that SHRM determines the intentions and plans of the organization to achieve its business objectives through people that should be based on the following principles:

* Human capital is the main source of competitive advantage;
* There are people that implement the strategic plan;
* Systematic approach should support the direction of the organization development (Armstrong, 1992).

One of the most controversial issues in the literature on SHRM is the question about how to connect HR function with the business strategy (Kucherov, 2014). There are the following three approaches:

1) Situational ("best fit") states that there is no ideal HR strategy, which will be more effective if it is properly integrated with specific external context. (Wright, Snell, 1998, p. 756)

2) Universal ("best practice solutions") based on the belief that there is an perfect HRM system.. (Brewster, 1999, p. 45);

3) Configurational ( "one binding site") based on horizontal or internal integration of individual HRM practices, which contribute to achieving the best business results and change under the influence of organizational context » (Richardson, Thompson, 1999, p. xi).

SHRM requires a systematic approach not only to the development and to implementation of HR strategy, but also to personnel policies and HRM practices in order to establish long-term relationships with each employee. Moreover, according to Guest (1987) there are three levels of integration:

* HRM policies into business strategy-there is little practical guidance, organizational politics and culture are important factors;
* Between HRM policies – difficult to achieve especially in organizational structures central and line departments divide their responsibilities;
* HRM into the line management function – line managers should have decent training, reward and appreciation by senior management.

[S. Fleming](https://www.amazon.co.uk/s/ref=dp_byline_sr_book_1?ie=UTF8&text=Sile+Fleming&search-alias=books-uk&field-author=Sile+Fleming&sort=relevancerank) suggested the following framework for developing of HR Strategy presented on Figure 1.9 in order to achieve integration on all levels:

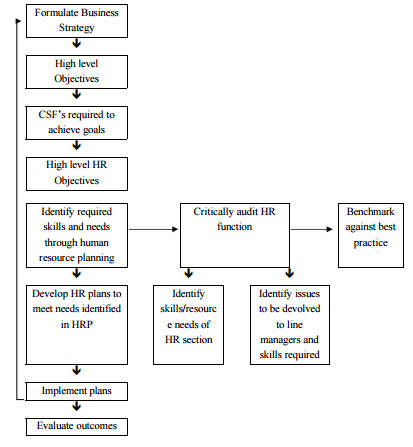


Figure 1.9 - Process for developing HR Strategy

Source: From Personnel Management to HRM Key Issues and Challenges

According to (Humphreys and Worth-Butler, 1999) the successful implementation and effect of the HR strategy strongly depend on the senior and line managers involvement as well as personnel, that should be actively engaged sometimes even through reconfiguration of their relationships and roles.

As result, in order to achieve the sustainable competitive advantage the organization should identify and analyze comprehensively its internal resources. Special attention should be devoted to human resources that can significantly contribute to achieving long-term competitiveness of the organization.

**Summary**

Theoretical background for this particular research, provided in the literature review and based on the different related to the main topic fields, such as logistics concept, SCM concept, levels of logistics providers, reforming of railway sector, NIE, Strategic management and SHRM, is aimed to show their development and current state to identify the main implications that should be taken into account.

The development of logistics and SCM concept leads to the transition from traditional supply chain to modern one, where the real competition is not between companies, but between different supply chains that in order to increase their competitiveness should implement unified management ensuring and prioritizing the profitability of the whole supply over interests of individual participants.

Examination of the reforming of railway sector based on the experience of several countries revealed the main models, problems and trends of railway transport development as well as importance of development of logistics infrastructure.

NIE covered a lot of topics, where main are levels of social analysis (social embeddedness, institutional environment, institutions of governance and neoclassical economics), theory of the firm, presenting the organization as a management structure, which success depends on effective coordination of firm activities by the managers and fit between people and markets, and TCE investigating the governance structures and main tade-off on the way to choose the most appropriate one for a particular company.

Finally, exploration of the strategy levels, business model and SHRM showed which role each of them play in or order to realize the goals set by the company to achieve its competitive advantage and create value for the stakeholders.

However, there is no clear explanation of how vertically integrated railway companies should implement the transition from traditional supply chain to modern one as well as transition from the provision of basic transportation function to more complex ones, such as: warehousing, packaging, pre-sale preparation of goods, information processing, customization. And, what is more important how they should organize their internal structure in order to realize the synergies.

**2. Methodology**

This chapter is devoted to the description of methods chosen to receive results and how they should be interpreted and analyzed. Moreover, there are provided procedures used in data collection and analysis. Today a lot of different research methods exist and in order to choose the decent one it is important to assure that it is suitable for the main problem and research objectives.

According to research ‘onion’ (Saunders, 2011) before reaching the central point (data collection and data analysis) we need to consider the outer layers, which are essential to the building of an justiﬁed and explained research design.

First of all, we need to start with research philosophy and research approach, then we proceed to research strategy, approaches and time horizons in order to ultimately describe data collection and analysis procedures.

**2.1 Research philosophy**

The researcher world perception (taken-for-granted assumptions) of the human knowledge and existing realities, affects the statement of the research question and the research design as a whole. In general, there are several ways of thinking about research philosophy, which defines what knowledge is acceptable and which process should be used to develop it.

*Positivism* mostly related to scientific method, where theories tested with large samples of highly structured and measurable data and statistical hypothesis testing. In case theory is not confirmed by findings, it should be revised (Remenyi, 1998).

*Realism* as well related to scientific research, stating that the real world exist independently from human mind and information provided by senses is the truth. Moreover, researcher is affected by its own experience and word views. Realism may be divided into two categories: *direct* (senses provide accurate information) and *critical* (information perceived by senses is subjectively handled by the mind, therefore, there is a need to take into account underlying complexity). Hence, data collection and analyzing procedures may be as quantitative as qualitative (Bhaskar, 2010).

*Interpretivism* is mostly connected with the social phenomena research in natural environment and, therefore, focuses not on objects, but on the people investigation. Data collection and analysis techniques include qualitative data received from small samples by in-depth investigations.

For the current research, the most intuitively appealing philosophy is *pragmatism*, which focuses on finding of practical results and states that in the world exist multiple realities and entire picture cannot be perceived from a single point of view. Pragmatist researcher may use different data collection techniques and analysis procedures in order to create appropriate research design allowing obtain credible, reliable and relevant data to support following actions (Tashakkori, 1998).

**2.2 Research approach**

The nature of research topic is rather new and debatable, moreover, there is no so much literature exactly focusing on core problem. Moreover, research is highly concerned with the background, in which events are taking place. Therefore, it is reasonable to use *inductive approach* and work mostly with qualitative data, collected by a variety of methods in order to have views from different perspectives on investigated phenomena (Easterby-Smith, 1999).

However, it is important to notice that time becomes an issue for conducting inductive research, as for example, *deductive* method is much more quickly to complete, due to the fact that all data is collected in same time, while for inductive research it takes a longer period.

Moreover, inductive research is riskier, as there is a threat to generate no any theory or patterns and managers usually trust more to the conclusions brought by deductive research.

Due to the fact that it is very important to have understanding of the problem nature on a high level it is worth effort to dedicate some time to the *exploratory research* (Robson 2002):

* Literature search;
* Experts interview.

As initial focus is quite broad and needs to be narrowed. Then it will be possible to conduct a *descriptive research* to determine the accurate and precise picture of the situation before proceeding to data collection.

**2.3 Research strategy**

The choice of the research strategy should be driven by the stated research question and objectives as well as by available resources (time, knowledge and so on). In general, there is no only one best strategy. Some of them pertain to deductive approach, others to inductive. The main of them are presented below:

* *Experiment* (classical form aimed to investigate casual links taking into account the size of influence between variables and their relative importance; used in exploratory and explanatory research to answer ‘how’ and ‘why’ questions; however, can be not suitable for many business research problems and it is hard to obtain decent sample (Hakim 2000));
* *Survey* (in general, linked to deductive approach; used in exploratory and descriptive research to answer who, what, where, how much and how many questions; let to obtain economically a huge standardized amount of quantitative data to find out relationships between variables, possible reasons for them, build models based on them and provide conclusions for the whole population; however, it is time consuming process to ensure that sample is representative and to make result analysis)
* *Case study* (empirical investigation of particular problem in its real environment through multiple perspectives using different sources; there is no clear boundaries between phenomenon and context , in which it is investigated; used in exploratory and explanatory research to answer ‘why’, ‘how’ and ‘what’ questions (Robson, 2002);
* *Action research* (research focused on resolving of organizational problems involving directly those who actually is affected by these problems, while a researcher integrates into the organization and face the problems from within using iterative process;
* *Grounded theory* (usually linked to the inductive approach; used in prediction and explanation of behavior with stress on theory, which is built from data gained from multiple observations to generate predictions tested further (Glaser 1967);
* *Ethnography* (related to the inductive approach; used to describe society from the subject perspective; needs a lot of time to be completed, high level of flexibility from researcher and trust from participants)

However, for this particular research a ***case study*** approach will be adopted as the main strategy and guidance. As (Yin, 2013) states that case study should be used to answer how and why questions, when researcher is trying to explain a particular features of the organization. Moreover, case studies is often used for investigation of the companies *implementing changes*, allowing us to look on the situation as retrospectively as in real –time.

Depending on this, there can be the following types of case study(Yin 2013).:

• Holistic case study;

• Embedded case study.

Holistic case study is used when researcher focuses on organization as a whole. However, when there is a need to investigate a number of different units inside the company, as in this particular case (for example, Russian Railways logistics business unit includes 12 subsidiaries and affiliates, 2 branches and 1 structural unit) it will be an *embedded* case study.

Case-study research strategy may be also split into two groups, depending on number of investigated cases:

• Case-study, assuming research of the one case;

• Case-study, assuming research of two and more cases.

Unfortunately, it is not easy question to determine how many cases should be investigated. Sometimes one case is enough due to the reasons such as this case allows test important and wide theory, organization was not investigated before in research purposes or it can be stated that this organization is a unique case. The possible explanations for using several cases may be the need to test and prove results as evidence from more than one case may look more reliable.

The major insight to consider multiple cases is to follow “replication logic”. Each case must be selected to: a) predicts similar results (a literal replication- a few cases: 2 or 3) or b) predicts contrasting results but for predictable reasons (a theoretical replication- 4 or 6). An important step of all replication procedures is the development of a rich theoretical framework, which needs to state the conditions under which a particular phenomenon is likely to be found ( a literal replication) as well as when it is not likely to be found ( a theoretical replication).

For this particular research, it is needed to conduct *comparative case studies.* The methodology is based on the investigation of each individual case in the chronological sequence of emerging developments with further deeper analysis of the most important ones and conduction of their cross-analysis, based on the goals and objectives of the research project.

(Goodrick 2014) states that comparative case-studies provide “more generalizable knowledge about causal questions” and comparison conducted over time within and across context in order to analyze and synthesize similarities, differences and main patterns in several cases that have a similar focus or aim.

In order to it, first of all, it is important to develop a clear understanding of peculiarities of each case and develop evaluation questions about overall performance to establish an analytic framework for the cross-case comparison.

Based on (Yin 2003) the actual comparative case study should be conducted in the order shown on Figure 2.1.

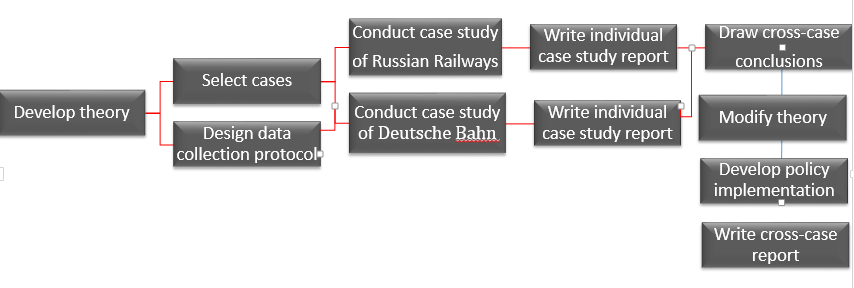


Figure 2. 1- The logic of comparative case studies

The main difference of comparative case studies from multiple cases is the focus on investigation of causality - the extent to which the interference induce the results. For current research, the following case companies will be investigated:

* JSC Russian Railways, which is going to implement a change and develop a logistics, in order to determine the current stage and problems;
* Deutsche Bahn AG, which managed to develop a successful logistics business in order to identify the best practices and suggest possible solutions for improvements.

**Research design**

Every type of empirical research has an implicit, if not explicit research design. In the most elementary sense, the design is the logical sequence that connects the empirical data to a study’s initial questions and, ultimately to its conclusions. A research design is a logical plan for getting from here to there, where here may be defined as initial set of questions to be answered, and there is some set of conclusions (answers) about this questions. Between “here” and “there” may be found a number of major steps, including the collection and analysis of relevant data

Another way of thinking about a research design is a ”blueprint” of research, with at least four problems: what questions to study, what data are relevant, what data to collect, and how to analyze the results (Philliber, 1980).

For case studies five components of a research design are especially important:

1. a study’s questions (“how” and “why” questions);
2. its propositions, if any (specification);
3. its units of analysis (fundamental problem);
4. the logic linking the data to the propositions;
5. the criteria for interpreting the findings.

**2.4 Method choices**

It is well known, that there are two types of data collection and analysis procedures in business and management research:

* Quantitative data (generate numbers);
* Qualitative (non-numerical data).

According to (Goodrick 2014) comparative case studies usually include both qualitative and quantitative data.

In order to answer on the main research question it is important to determine the research method, which can be mono method (single data collection and analysis procedure) or multiple methods:

* Multi-method (combination of data collection techniques used with corresponding analyzing procedures completed in itself only within one word view- quantitative or qualitative);
* Mixed method (mix of quantitative or qualitative data collection strategies within one project at the same time or sequentially).

From the (Morse, 2003) point of view the fact that in multimethod all projects are completed in themselves is the main distinction of the multimethod from the mixed method.

In this particular study will be used a multi-method. The other important consideration connected with the fact that all methods have their own advantages and disadvantages, so the implementation of different types may decrease the risks and increase the possibility to obtain the reliable results.

**2.5 Time Horizon**

Determination of the time horizon is very important consideration (Bryman, 2006) as well and based on it there are two types of studies, which are both observational:

Cross-sectional (provides investigation of the phenomena in particular point of time; easier to complete, but doesn’t determine cause-and-effect relationships);

Longitudinal (provides investigation of the phenomena over a period of time, allowing to determine changes, developments and sequences of events).

For this particular research longitudinal study according to characteristics described above can be much superior, however, due to the time constrains it is rather hard to complete.

**2.6 Data collection techniques and procedures**

Under the principle of case studies in order to develop a deep understanding of the cases and their context, multiple instruments (observations, interviews and archive searching) will be used for the data collection in selected case study companies.

Comparative case studies need more extensive conceptual, analytic and synthesizing work than a single case study, despite the similarities between them in data collection strategies (Goodrick, 2014).

Data will be collected by means of theoretical and empirical methods. There are two types of data:

• Primary data;

• Secondary data.

Secondary data should be collected before primary as it allows to formulate assumption for the further testing and provide some benchmarking techniques and measures that could be used further for comparison with study results.

To collect *secondary data* we need to consider two categories - internal companies documents and external. It is reasonable to search for information inside the company by the analysis of annual, committee and internal reports. However, it should be noticed that it can be difficult to get access to some of these materials due to the security and privacy reasons or internal policy that, as result may affect perception of the situation.

The other place to obtain the information is publically available literature, which is easy to find out on the web and in specialized newspapers and journals. However, it should be taken into account that very often such source of information can be not completely accurate as company may change some information before placing it on the web, also reporters may distort or bias the information to some extent. Moreover, secondary data usually collected for other purposes may be not suitable for current research (Coakes, 2014).

Usually there are different ways to collect *primary data*: experiment, observation, survey or interview, while the last two may be performed by mail, by phone and personally. In the current research the primary data will be collected mostly through the interview conducted in the personal way. The general process of data collection is shown on Figure 2.2.

After the Interview

During the Interview

Before the Interview

Figure 2.2 - Process of data collection

***Interview***

Interview is important tool to collect valid and reliable data relevant to the research with the possibility to obtain an insight view from persons that work directly with the investigated sphere. There are several interview types:

* Structured interviews (in this case questionnaires include standardized set of questions read by the interviewer who then records all respondent answers; mostly used for collection of quantitative data);
* Semi-structured (non-standardized interview including the list of interesting for interviewer questions, which may be reformulated, skipped or changed during the interview, moreover, their order may be changed as well and there is a possibility of emergence of new questions);
* Unstructured or in-depth (non-standardized informal interview similar to conversation; there is no list of prepared questions, however it is important to have a clear topic understanding).

In our research *in-depth interviews* will be helpful to “ find out what is happening and to seek new insights” (Robson, 2002) on the first stages. However, the most appropriate method that should be used is *semi-structured interview*, as for the case studies, in general, qualitative data are necessary in order to understand the nature of services, company performance and personal perception of company development.

Therefore, semi-structured interview allows us to collect this information, as it is possible to change and adapt some aspects of the initial questions list in order to direct interview into necessary way and, as result, to obtain more relevant and accurate information. The interview should be design in a such way to allow us to cover investigated topic as a whole and obtain the comprehensive responders viewpoint. Hence, there should be a mix of questions, where some of them will be strictly formulated and some will be stated in more free way allowing responder to show positon and elaborate on the topic.

In general, there should be involved middle level managers as they fully integrated in to the main processes and usually aware of the main problems and trends. Top managers are also very interesting to be interviewed as they responsible for the general company strategy and responsible for important decision-making. However, it is quite difficult to reach them.

Table- Data collection

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Company | Interviewee | Position | Date | Type | Duration |
| JSC Russian Railways Logistics | Dmitry | Director of the branch in St. Petersburg | 12.04.2016 | Face-to -face | 50 min |
| Gefco | Oleg | St.Petersburg Subsidiary Manager | 20.04.2016 | Face-to -face | 1h 20 min |
| Department of Management of the Transport and Logistics Business Unit | Pavel | Deputy chief | 28.04.2016 | Face-to -face | 40 min |
| Central Directorate for Management of the Terminal & Warehouse Complex | Artem | Deputy Head of Centre | 10.05.2016 | Face-to -face | 45 min |
| DB Shenker | Vyacheslav | Manager of the Department of Special Projects in Saint-Petersburg | 17.05.2016 | Phone call | 30 min |

**Empirical Part**

3. Setting up of logistics business in JSC Russian Railways

JSC Russian Railwaysis a vertically integrated company that is one of the one of the largest Russian enterprises and largest transportation companies in the world with headquarters in Moscow.

Key Highlights:

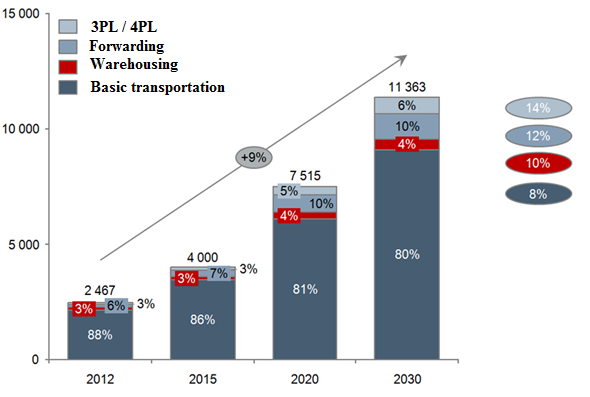
* Obtains world's third-longest rail network-  *Natural monopoly*;
* World’s third largest railway in terms of freight turnover - dominant position in freight transportation segments;
* The main owner and operator of locomotives, as well as operator and lessor of freight rolling stock in Russia;
* One of Russia's largest companies in terms of assets (company value was estimated at about RUB 4.4 trillion (about USD 79.2 billion) in 2014;
* One of the largest single contributors to Russian GDP (about 1.4% of the GDP in 2014);
* The largest commercial employer in Russia (835.8 thousand employees in Holding as of the end of 2014).
* A responsible corporate citizen (RUB 104.8 billion investment into social development projects in 2014).

**3.1. JSC Russian Railways external environment**

**3.1.1 The market of logistics services**

The competitive environment in the Russian market of transport and logistics services in general can be defined by the activities of Russian companies - transport companies and freight forwarders.

The key players in the segment of 3PL services is considered to be the western logistics providers, with extensive experience in solving problems of maintenance of large industrial and commercial companies with which they are working around the world. As a rule, the scale of the western logistics providers on the Russian market are directly linked to the activity of their regular clients in Russia (Simonova, 2014).



Source: RBK, Global insight

Figure 3.1 -Russian market of transportation and logistics services

Source: The Concept of transportation and logistics business development of JSC Russian Railways, 2013

The volume of Russian market of transportation and logistics services was estimated at 2.5 trillion. rub in 2012. The basic transportation remains the main service with a share of 88%, while the shares of other services provided in the segment of value-added services are the following: forwarding (6%), warehousing (3%), and integrated and contract logistics 3PL / 4PL services (3%).

**3.1.2 Competition between rail and road transport**

The problem of "outflow" of goods from rail to road transport is actively discussed among industry experts, participants of the transport market, JSC Russian Railways specialists and managers.

I general, railway transport characterized by the following main advantages over the road transport:

* High capacity of railways;
* Traffic regularity, regardless of the time of year, time day and weather conditions;
* Possibility for transportation of various goods and in bulk quantities;
* Possibility to establish a direct link between large industrial enterprises by the house tracks;
* Relatively low cost of transportation in bulk over long distances.

This factors explain current dominance of railway transport on the transport market despite the relatively low quality of the transport services due to the fact that the railways transported mainly bulk goods, which have not sufficient demand elasticity to transfer these freight traffic to other transport modes. Indeed, according to the analysis raw goods currently dominate in the JSC Russian Railways turnover structure.

However, in the segment of high-margin cargos, which has a higher growth rate than the segment of raw goods, railroads are losing their ***position to road transportation***. The main reasons for it are:

1. The different government approaches to the infrastructure development and to the tariffs regulation prevent the development of full-fledged market relations in the transport market;
2. Higher flexibility and quality of service of road transport compared with the rail due to the :

* Simplicity of transportation handling;
* High-speed delivery and safety of goods;
* Compliance with the principles of "door to door" and "just in time";
* Flexible pricing approach to the client.

The delivery speed is an essential factor. The analysis shows that at a distance of 200 km freight can be delivered by road transport 12 times faster than by the rail - road intermodal traffic, and 5 times faster than by only rail transport; at a distance of 500 km - delivery is 7 and 3 times faster, respectively.

The price of transportation over short distances is also an important factor of competitiveness, as rail transport tariff (in terms of 1 tonne-km) is higher there due to the fact that cost price increases by 4-5 times.

Moreover, the high competitiveness of road transport is strongly connected with the rejection of excessive requirements for positioning and securing cargo. According to world experience the shipper, who is financially responsible for the correct positioning and securing cargo, much more accurate than the carrier will assess risks arising from the transportation and find a balance between safety and economic efficiency.

The experts of the rail freight market state these trends of JSC Russian Railways will continue. According to estimates of "Center of Strategic Research" market segment of the freight transportation, where railway and road transport compete, is estimated at 130-140 mln. tons. Some of these volumes could potentially switch to the railways. Therefore, should focus the marketing efforts on this segment to improve the quality and the competitiveness of transportation services.

**3.2. JSC Russian Railways internal environment**

**3.2.2. Reforming process**

The reason for reforms in the mid-1990s became the profitability decrease to negative values, President Putin adopted the Railway Reform Program that incorporated the transition of all railway business functions to the joint-stock company with 100 per cent state involvement:

* October 2003- Establishment of JSC Russian Railways received more than 95% of the assets under the Ministry of Transport and Communications of the Russian Federation.
* On October 28, 2011, a subsidiary of Russian Railways- The Joint Stock Company Freight One- sold to Independent Transport Company (75% minus two shares)
* On October 16, 2012, remaining 25% plus 1 share stake of JSC Freight One was sold. To Independent Transport Company LLC.

The main aim of the reform is a transition from “monolithic” monopoly state railway to market-oriented system with elements of competition with private business involvement. As result, by 2010 there was developed a model of freight railway transportation market having no analogues at world practice.State-owned company JSC “Russian Railways” is a single monopoly carrier, possessing the all public infrastructure, freight stations and locomotives. JSC “Russian Railways” issue invoices and performs transportation, guided by state regulated tariffs.

Freight car fleet (1, 4 million units) is possessed by operators including more than 1, 8 thousands companies: JSC “Russian Railways” subsidiaries, companies created by the huge shippers and independent investors.

Creation of rolling stock operators and attraction of private capital allows to resolve problem of investments and rolling stock deficit, but in same time create a set of problems.

**3.2.3 Company results after reforming**

According to the Concept of transportation and logistics business development of JSC Russian Railways, 2013 rail transport provided 44.5% of turnover of the transport system in 2012. The revenues from cargo transportation and logistics services (excluding GEFCO), occupied about 44% market share in terms of value.

The share of international sales of the Holding is not more than 3% (around 11% with GEFCO), which indicates a significant business dependence on the Russian economy and on the volume of commodity exports, restricting the comprehensive understanding of international markets and international customers by the Holding.

An negative contribution to the reduction of the income from freight traffic was brought by the withdrawal from the JSC "Russian Railways' freight car fleet and subsequent sale of shares of subsidiary operating companies. During the period 2004-2012, the proportion of companies included in the holding company "Russian Railways" decreased by more than 3 times (from 74% to 22%) in terms of cargo turnover on the market of operating freight cars.

As result, company experienced an income reduction by 26% compared to 2004 with an increase in turnover of 27%. Consequently, operating income from freight transportation decreased from 17% in 2008 to around 7% in 2012. Moreover, due to structural reforms Holding dramatically reduced its presence on and income from high-margin market. The revenue base (revenue) of transport services for the period from 2003 to 2012 decreased by 13% and the EBITDA by 22%.

**3.2.4 Strategy**

In 2011 there was officially published corporate Strategy for Developing Rail Transport in the Russian Federation up to 2030 (the Strategy) (JSC Russian Railways, 2016), basing on the purposes set by the Russian Federation Government in the forecast of socio-economic development of Russia until 2030 (Overview. (n.d.). Retrieved May 26, 2016).

According to JSC Russian Railways annual report 2014, in order to achieve stable company development there was adopted target business model, which consists of the following business units:

* *Transportation and logistics business unit;*
* *Passenger transportation;*
* *Rail transportation and infrastructure;*
* *The international engineering and transport construction;*
* *Social.*

The main focus of this particular master thesis is the transportation and logistics business unit, as it was created for the realization of the particular JSC Russian Railways priority-“to establish a diversified product basket with a transition from providing mostly transportation services to providing freight owners with complex integrated door-to-door services with a subsequent expansion in the spectrum from 2PL to 3PL and 4PL services and the formation of global logistics chains”( Annual report. (n.d.). Retrieved May 26, 2016)

In order to determine the main directions of the practical implementation of the Strategy for Developing Rail Transport in the Russian Federation up to 2030 in terms of transportation and logistics business, there was adopted the Concept of transportation and logistics business development of JSC Russian Railways (the Concept). The Concept is the first attempt to determine the goals and objectives of the creation of the transport and logistics business unit as well as time frames, within which they should be achieved as it shown on Figure 3.2. Moreover, the Concept set up the target model of business unit, suggesting distribution of functions between the parts of business units and organization of management. Besides, the Concept determines the organization principles of services sales system, pricing policy and income distribution system in business unit and suggests the measures for the further development of transportation and logistics business.

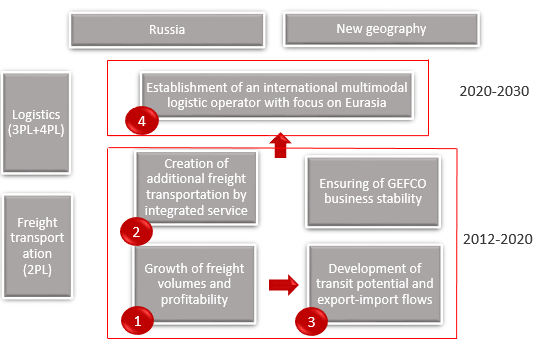


Figure 3.2 - The main directions for the development of the transportation and logistics business

Source: The Concept of transportation and logistics business development of JSC Russian Railways, 2013

The Concept states that during the 2013-2020 period, company should focus on the first three directions, while the ultimate goal- to establish the international multimodal logistics company - will be the main priority for JSC Russian Railways after 2020. At the same time until 2020 is necessary to ensure the GEFCO business stability (JSC Russian Railways subsidiary that will be described further) throughout the territory of JSC Russian Railways operations and its successful integration into the company.

To conclude with, it should be highlighted that despite the developed strategy on corporate level- the Strategy, company lacks updated business and operational strategy, which are now represented only by the Concept. As even if the Concept covers the main problem spheres for transportation and logistics business unit, basing on the conducted interviews during this particular study it was found that not all of the suggested in 2013 initiatives now can be considered as effective and feasible. The subsequent chapter are supposed to prove this statement.

**3.2.5 Operational model of Transportation and logistics business unit**

As it was stated in the Concept, the changes connected with the strategic development of transportation and logistics business in such huge company as JSC Russian Railways require an adequate reflection in the management system and the creation of a new operating model in order to allow to organize a clear and effective interaction between all parts of business unit and achieve the strategic objectives and target parameters.

It was planned that target architecture of transportation and logistics business unit would consist of the control body and a set of business sub-units. Each *business sub-unit* was supposed to implement through its own assets and/or the competences certain functions in the field of freight transportation and the transportation and logistics activities in order to create a certain value portion of the value chain of the products and services provided by the transportation and logistics business unit. While the main task of the *control body* - to ensure the maximization of synergies from joint activities of business sub-units through their coordination at all stages from the planning and allocation of resources to the direct implementation of technological operations and development activities.

Initially, it was asumed that the *Department of Management of the Transport and Logistics Business Unit* would take the role of control body. However, accoding to the interviews this department in general was dealing with statictics collection, reports preparationand and has never performed fucnctions described in the Concept, as it had no required authority, budget and resources. As it can be seen from Figure 3.3 - the business sub-units (12 subsidaries and affiliates, 2 branshes ans 1 structural sub-division) directly report not to the *Department of Management of the Transport and Logistics Business Unit*, but to Vice President. Finally, this department was recently abolished, in accordance with order of new company President - Oleg Belozerov, with transfering of department functions to the *Centre for Corporate Transport Service (CCTS)*, a branch of Russian Railways, as it is shown on Figure 3.3.

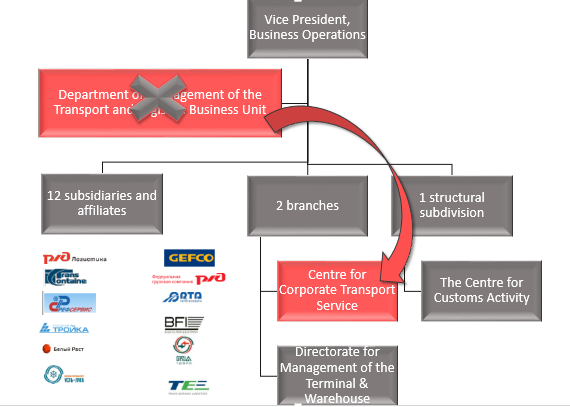


Figure 3.3– The perimeter of the transportation and logistics business unit

Source: Adopted from the Concept of transportation and logistics business development of JSC Russian Railways, 2013

However, for the current moment the *CCTS* as well is unable to function as control body for the same reasons as in case of Department of Management of the Transport and Logistics Business Unit and maintain effective coordination between all sub-units that will be investigated further.

3.2.6 The main sub-units of Transportation and logistics business unit.

As result of the implementation of the Russian Railways structural reform and the isolation of different business directions into the separate companies with their partial sale to private investors, now Transportation and logistics business unit consists of:

* 12 subsidaries and affiliates (GEFCO, JSC Russian Railways Logistics, PJCS [TransContainer](http://eng.rzd.ru/statice/public/en?STRUCTURE_ID=4309), JSC Refservice, JSC «Federal Freight» JSC RailTransAuto, TLC Bely Rast and others);
* 2 branshes (the Centre for Corporate Transport Service and t[he Central Directorate for Management of the Terminal & Warehouse Complex](http://eng.rzd.ru/statice/public/en?STRUCTURE_ID=4324));
* 1 structural sub-division (the Centre for Customs Activity).

Figure 3.4 shows the structure of *Transportation and logistics business unit,* which is rather complex, providing only hierarchical subordination, but not clear understanding of the horizontal links and relationships between sub-units. Moreover, the Concept states that there is intercompany competition and function duplication as between the subsidiaries, as between the branches of JSC Russian Railways and subsidiaries.



Figure 3.4 – The segment fixation and roles allocation between business units.

Source: Adopted from the Concept of transportation and logistics business development of JSC Russian Railways, 2013

In order to provide a solution for these problems, in the Concept was developed the segment fixation and roles allocation between business sub-units that are shown on Figure 3.4, basing on the following principles:

1. The clear separation of responsibility areas between 2PL operators. Operator companies provide the rolling stock and perform freight transportation for customers, not interested in the 3PL service, as well as for third-party logistics companies.
2. The limitation of 2PL operators ability to provide contract logistics (the elimination of competition in the provision of value added services between 2PL operators and GEFCO / JSC Russian Railways Logistics).
3. The distinction between customer segments of GEFCO and JSC Russian Railways Logistics (GEFCO focuses on industrial goods and the finished products, JSC Russian Railways Logistics- raw materials, in the same time achieving the companies’ specialization on different types of rolling stock with involving operators - affiliates of OAO "Russian Railways").
4. Organization of sales of basic transport services and value-added services basing on the principle of "one window". Attraction of new customers and cargos to the railways should be done by CCTS client managers, interacting with client managers in subsidiaries. The principle of their interaction should be realized as follows:

* CCTS client managers are working with their existing customers, offering them new products (services), and search for new clients, according to the segmentation provided above.
* If the CCTS client manager finds a new client, who needs a service of 3PL/4PL level (other value-added services), or reveals in the existing customer demand for services provided by other subsidiaries, CCTS client manager should bring to negotiations client manager from the corresponding subsidiary and lead the client with this client manager, remaining for the client the main contact point from JSC Russian Railways.

1. Sale of warehouse and terminal services, as separate service, is carried out by the Central Directorate for Management of the Terminal & Warehouse Complex (CDMT) (responsible for the management, maintenance, modernization and development of terminal and logistics centers and freight yards, implements the "last mile" service). Terminal and logistics services are provided by GEFCO and JSC Russian Railways Logistics within the 3PL / 4PL services (mainly involving the CDMT, the terminals of JSC TransContainer, TLC Bely Rast).

In order, to understand are there, indeed, any intercompany competition and functional duplication, as well as do described above principles of segmentation and interaction as between the subsidiaries, as between the branches and subsidiaries exist, further will be provided analysis of the main of them based on their annual reports, official web-sites and interviews with representatives.

From the large number of subsidiaries for analysis there were chosen, first of all- JSC Russian Railways Logistics and Gefco, because they should play the main role in the development of logistics business on JSC Russian Railways and the question about intercompany completion mostly related to them. PJSC TransContainer also was taken as one of the brightest representatives of rolling stock operators owned by JSC Russian Railways. With regard to branches of JSC Russian Railways both of them (CCTS and CDMT) were taken as they also have significant importance for development of logistics business.

First of all, there will be given a description of each mentioned above business sub-units in order to describe how their activities officially introduced, then there will be provided analysis of interviews conducted with chiefs and deputy chiefs of Saint-Petersburg offices of chosen subsidiaries and branches.

1. ***JSC Russian Railways Logistics***

JSC Russian Railways Logistics – subsidiary of JSC Russian Railways, established in November 19, 2010 in order to develop the logistics business direction of JSC Russian Railways (Transportation and logistics services. (N.d.). Retrieved May 26, 2016).

According to the official JSC Russian Railways web-site, the company provides integrated transportation and logistics services for industrial enterprises (such as scheduling, provision of raw materials delivery, dispatching control, development of schemes of loading, cargo handling, intralogistics, provision of finished products export -rail and road transport, consulting services). Company should provide the integration of all services of the JSC Russian Railways and third-party suppliers into a single supply chain on multimodal transportation market.[[2]](#footnote-2) JSC "Russian Railways Logistics" specializes in transportation of bulk, general cargo, oversized and heavy cargoes and small consignments.

JSC Russian Railways Logistics Annual report 2014 states that as the base model of the company's development was set a model of the evolutionary development from the freight forwarding company to operator of the 3PL/4PL level - «light assets» (operator without assets).

The main activities:

1. ***Freight logistics*** is the most important one, including forwarding services in the transportation by various types of transport in Russia, CIS and international traffic, and a set of complementary and integrated services with multimodal transportation, bulk shipping, oversized and other kinds of cargoes, requiring specific conditions of transportation.
2. ***Intermodal transit traffic*** on route China-Europe-China. Transit rail transportation through the “space 1520" from Asia to Europe and back. The company participates jointly with its affiliates and subsidiaries, Far East Land Bridge Ltd. and YuXinOu (Chongqing) in organizing regular transit container trains in Europe from six cities in China with "door to door" services and guarantees of minimum terms of delivery and its complete safety
3. ***Logistics outsourcing****-* a segment, referring to the transport and logistics services and integrated services, requiring for their provision information related to technology, production, internal customer processes (production plans, delivery schedules, warehouse management system, the interaction of c IT client system, etc.). Logistics offers customers unique services to coordinate their technology with railway technology.
4. ***Integrated transportation and logistics service*** *–* a segment of the market related to the services of the optimal supply chains organization of products exported by the holdings to the borders of the Russian Federation (seaports and land border crossings) with the main aim - to establish a system linking customer, railway and port needs, having its own unique technology.
5. ***JSC Russian Railways Express*** Services for the transportation of small and partial consignments (Less than Truck Load and Less than Container Load), based on the set of operations: including cargo acceptance from the client, documents execution, consolidation of cargo at warehouse, sorting by directions, packing and delivery organization the at the destination by the most suitable transportation mode.
6. ***Transportation for the needs of JSC Russian Railways*** - provide quality services to the JSC Russian Railways in order to increase the internal efficiency of the holding company and its capitalization.

***2) Gefco***

GEFCO was founded in 1949 as a logistics subdivision of automaker Peugeot. Today, GEFCO is a leading international logistics operator, 75% owned by JSC Russian Railways and 25% by concern Peugeot Citroen (Transportation and logistics services. (N.d.). Retrieved May 26, 2016).

GEFCO Group, a leading provider of logistics solutions and services for industrial companies, has integrated infrastructure in several key areas. The company provides global services based on innovative solutions for a wide range of sectors of the economy, transportation of finished vehicles, machinery, parts and components, equipment (including oversized);consumer goods. GEFCO develops and uses logistic solutions that are designed for specific client needs and combine the reliability and competitiveness throughout the supply chain to solve any business problems.

A wide network of offices around the world and many years of experience allows GEFCO to provide logistics solutions that are designed for specific client needs and combine the reliability and competitiveness throughout the supply chain to solve any business problems (GEFCO Solutions. (N.d.). Retrieved May 26, 2016):

* ***Basic Logistics:*** comprehensive support to customers from the organization and the choice of route, storage and customs clearance to full information provision and control at every stage of transportation in the different areas, such as air, rail transportation, shipping, road transport, warehousing, customs clearance and packaging.

1. ***Integrated logistics****:* unique offerings for the customers from industrial enterprises and transporting finished vehicles.
2. ***Project Logistics:*** solution of operational tasks and organization of emergency transportation; organization of the transportation of non-standard products and samples, heavy and oversized cargos.
3. ***Industry Logistics:*** international solutions on the organization of logistics chains, designed in accordance with the specifics of the client's industry (automotive, aerospace, electronics and home appliances, FMCG and retail trade) starting from the supply from manufacturers to distribution of finished products with continuous evaluation the solutions effectiveness and processes improvement.
4. ***Expert Logistics:*** management and control between all participants of the supply chain, using specialized center of Business Management (Control tower). Solutions in integrated logistics (4PL) serve as the basis for the optimization of transportation, financial and information flows of customers.
5. ***PJSC TransContainer***

PJSC TransContainer is a leading Russian company, providing a full range of services related to container transportation and terminal handling of bulk and packaged cargoes for different industries (timber, woodworking and pulp and paper industry; mechanical engineering, instrumentation and metal industry; chemical industry; products of the food, dairy and meat and fish industry) on the territory of Russia, the CIS, Asia and Europe (Transportation and logistics services. (N.d.). Retrieved May 26, 2016).

The main services of the Company:

* Railway container transportation;
* Container transportation of by road;
* Sea / river container transportations;
* Terminal handling of cargo;
* Forwarding and logistics services;
* Customs clearance;
* Services in customs warehouses of temporary storage.

PJSC TransContainer obtains a unique asset base: 26,923 flatcars, 64,212-tonnage containers, 742 units of motor vehicles, 233 units of loading equipment, 46 terminals in Russia, 19 terminals in Kazakhstan, 1 terminal in Slovakia. Moreover, PJSC TransContainer has 130 sales offices connected by the unified information system, providing an individual approach to each client and management of the supply chain of container cargo of any size and complexity (Company. (N.d.). Retrieved May 26, 2016).

1. ***Centre for Corporate Transport Service***

Centre for Corporate Transport Service (CCTS) was established in 1996 for the formation of a marketing policy and the realization of rail transport services in the field of freight transportation. In the process of reforming CCTS was joined to the JSC Russian Railways as a marketing and sales structure (Structure. (N.d.). Retrieved May 26, 2016).

According to the official web site, CCTS should work as a "one window", providing a *full cycle of interaction* with clients in the formation and execution of orders for freight transportation, and also carry out contract work with forwarding companies, owners of railway rolling stock and other participants of the transport market. As result, CCTS should act on behalf of the client as a single customer for all involved departments of JSC Russian Railways and on behalf of JSC Russian Railways as a guarantor of the quality and timeliness of order execution to clients.

CCTS Activities:

* Services for the organization and implementation of freight transportation;
* Services for the infrastructure use of public railway transport, owned by JSC Russian Railways;
* Information provision and other additional services;
* Organization and management of contractual work with forwarding companies.

1. ***Central directorate for Management of the Terminal & Warehouse***

Central Directorate for Management of Terminal and Warehouse Complex (CDMT) began its activity on October 1, 2010. As a branch of JSC Russian Railways it obtains freight yards on the entire network of Russian railways, offering its customers a full range of cargo handling and terminal and warehouse services, including temporary storage for traders, rolling stock washing services and offers rent for warehouse and office space (Structure. (N.d.). Retrieved May 26, 2016).

3.2.7 Interview analysis

*Perception of logistics layers*

To begin with, as the main focus of this particular research paper is logistics business, it is important to investigate how the JSC Russian railways Logistics and Gefco, which are expected to become the main driving forces, perceive and differentiate the levels of logistics providers and where they place themselves. In the table below summarized their answers accompanied by the official JSC Russian Railways perspective represented at Annual report 2014.

Table 3.1- Comparison of perceptions

|  |  |  |  |
| --- | --- | --- | --- |
|  | JSC Russian Railways Logistics | Gefco | Annual report 2014 of  JSC Russian Railways |
| 1 PL | Missed | Owner of material resources involved in the process (warehouses, infrastructure, loading and unloading equipment), which can be considered as a “party” | Freight owners |
| 2 PL | Tariff component + payment for transit | Rent these resources in order to realize transportation. | Provides logistics services to customers using its own assets (transportation, warehouses). Offers various types of transportation (sea, railway, road), warehouse services and customs clearance |
| 3 PL | Additional services, not related to the tariff component of transportation, (everything that used to be done by forwarder). Ensuring of delivery to the final destination by using different transportation modes. | Creates a chain (collects, consolidates, customs export component)- an integrator of 2 PL. Door-to-door services. | Creates complex solutions by integrating various types of logistics services |
| 4 PL | 3 PL + warehouse logistics (warehouse classes A, B). | Has no infrastructure, on behalf of customer deals with the logic of the cargo movement, designs and suggests guaranteed options, identifying their pluses and minuses and allowing customer to choose the most suitable one in exchange on percentage of operations (agency fee). | Develops, builds and implements turnkey solutions for the entire supply chain and also manages and oversees the logistics process |

Both JSC Russian railways Logistics and Gefco provide their vision from the practical experience, using their own professional slang that makes it difficult to provide an objective comparison between their classifications. However, it is possible to determine the most obvious differences:

* between descriptions of 1 PL and 2 PL levels, provided by Gefco representative and in Annual report 2014;
* Perception of 4 PL provider by JSC Russian Railways Logistic representative.

In Gefco representative perception, JSC Russian Railways is 1 PL (infrastructure owner) and 2 PL (uses locomotives to transport goods), and cannot be 3 PL as it provides its services only within railways. Even if JSC Russian Railways bought 75 % of Gefco, it is still independent, “not JSC Russian Railways”, but it is “ 4PL provider using services of 2 PL”.

JSC Russian Railways Logistic representative states that its company may be called as 3PL provider, according to the providing services, while interviewee from Cefco mention that JSC Russian Railways Logistic work “not to the full extent”.

*Intercompany competition*

In terms of intercompany competition between Gefco and JSC Russian Railways Logistics the representative of JSC Russian Railways Logistics stated that they are not competitors as they are divided by type of cargo and activities. Each company is strong in its own sphere:

* JSC Russian Railways Logistics – transportation of bulk cargoes and a strong presence in Russia,
* Gefco- transportation of vehicles and spare part, warehouse logistics and a strong position abroad.

While representative of Gefco identifies that in some cases the situation with competition between these two companies may appear. He personally tries to escape from it by making calls to JSC Russian Railways Logistics office in order to identify whether it works with this particular client and whether particular services are provided already by JSC Russian Railways Logistics, but without going into details, as Gefco by itself is reluctant to reveal its clients and contracts. The interviewee called such main principle of work with JSC Russian Railways Logistics - “not to interfere”. In terms of segmentation and limitation of subsidiaries movement from one segment to another (from 2PL to 3Pl and vise versa) Gefco interviewee (as well as from CCTS) believe that it will hinder companies to provide full and effective services to clients.

*Interaction between business sub-units*

While interaction with other subsidiaries, for example with PJSC TransContainer, is organized on market principles, which means that JSC Russian Railways Logistics or Gefco are trying to work firstly with PJSC TransContainer, but are not obliged to. If PJSC TransContainer suggest rates higher than other rolling stock operators, both companies will not work with PJSC TransContainer. Companies representatives explained such situation by the fact that as each subsidiary is commercial and autonomous enterprise focused on maximization of their own profit and not motivated to search for synergies.

Deputy chief of CDMT suggested that such first scheme based on market relations is not effective as it does not allow profit maximization for JSC Russian Railways as a whole, especially when there is a decline in railway freight transportations. That is why he stated that second possible scheme is when CCTS coordinates the interaction between subsidiaries (for example, CCTS gives to JSC Russian Railways Logistics a task to sell N % of PJSC TransContainer services). The third scheme of interaction may be realized through creation of an information platform, which “allows evaluating the profitability of the request from the client” for JSC Russian Railways as a whole, while for several subsidiaries it is unprofitable and then should be compensated. According to CDMT representative, some steps at this direction have been already done, but still such system will be implemented in rather long-term perspective. Ultimately, “there should be a mix of all these three schemes”.

To talk about the second scheme of interaction described above, currently CCTS does not have the necessary powers and budget, as such issues are resolved by the Vice-President. Moreover, deputy chief of CCTS confirmed that after abolishment of *Department of Management of the Transport and Logistics Business Unit*there was not any transferring of its functions to CCTC and CCTC didn’t receive any instructions about expansion of its powers. CCTC currently may interact with other subsidiaries basing on agency or contractor agreement. While CCTC may sale warehouse and terminal services of CDMT and JSC Federal Freight services of rolling stock, as there is package deal between them, when client sign a contract with CCTC and pay for all services, and then after service provision CCTC pays to CDMT and JSC Federal Freight. According to JSC Russian Railways Logistics representative, it is an example of functional duplication as they did the same as JSC Russian Railways Logistics, but “when client come to them by itself” and need the service only within railroad. Moreover, forwarding can be offered at different prices by operators of rolling stock, JSC Russian Railways Logistics and "GEFCO"

According to the view of JSC Russian Railways Logistics representative in order to realize synergies all subsidiaries, indeed, should be run by one company, which would organize a single process. However, it should be not CCTC as its staff mostly represented by the people having not decent *mentality* and attitude to perform this function. According to this interviewee, historically interaction with client was based on the principle –“if the customer wants to carry the goods by rail, he will come by himself”, meaning that they are not ready “run for the client”. That is why interviewee suggested that the role of focus company should be assigned to Gefco or JSC Russian Railways Logistics, which is more preferable as it has not only mentality “oriented to the client”, but also understanding of the work specifics on Russian Railways.

Gefco representative vise versa believes that there is no need for any focus company and search for synergies, in such situation “it is better to follow portfolio diversification strategy in order to reduce risks”. However, he also confirmed the idea that specific mentality make it difficult to work with JSC Russian Railways, where Gefco should be integrated. He elaborated that statement by explaining that if Gefco and JSC Russian Railways Logistics organize their work basing on the customer needs and satisfaction “in order to earn money”, CCTS and CDMT as branches of JSC Russian Railways put the first priority on the infrastructure capabilities without any customization as they “do not earn, but allocate money”. For example, there will be firstly organized some "finished product" (container trains with particular schedule) and only then CCTS will sell it to interested clients, or if there is some warehouse that should be to be loaded, despite its inconvenience, JSC Russian Railways may use administrative or force methods to push Gefco use exactly this warehouse.

*Quality of services and client orientation*

Moreover, company representative expressed his concerns about Gefco integration into JSC Russian Railways, which expects that Gefco will attracts new cargoes to the railways. However, JSC Russian Railways do not provide suitable conditions for it in terms of :

* *Tariffs* that are altered too often, while Gefco needs them fixed for longer period;
* *Safety*, which means that JSC Russian Railways from the personal interviewee experience may not take responsibility for cargo damage if it was transported into the right destination in the right quantity.
* *Transit time*, as JSC Russian Railways cannot guarantee it to the clients, except for piggyback trains that have allocated train path, while some clients due to specificity of their production process require that cargo has to be delivered exactly on time.

Such case shows that JSC Russian Railways may provide their services not in full compliance with rules 7R and “just in time” principle that not allow Gefco include railways in the supply chain that it creates for its clients.

Representative of CCTS agreed that branch, indeed, build its work with clients basing on infrastructure capabilities and is blamed frequently for its mentality and, as result, low level of customer focus. However, he believes that it comes mostly from the misunderstanding who are CCTS customers. In general, he defined two types of JSC Russian Railways customers:

* *Customers that are focused on the work with JSC Russian Railways* - *Large industrial companies*, for example, PJSC Severstal, Company EuroChem and other companies dealing with coal and gravel. For such companies railway transportation is the part of their process cycle. Interaction with railway transport is laid in the design of companies production (building of house tracks), which huge volumes may be carried only by railways. Such companies in its composition as a rule have special transportation departments and units that are responsible for interaction with JSC Russian Railways.
* *Customers that are not focused on the work with JSC Russian Railways*. For such type of clients it is doesn’t matter by which transportation mode their cargo will be transported (in some cases there is a need for intermodal transportation) and they require higher level of service.

As result, the first type of clients are key for CCTS and their satisfaction is the first priority for CCTS that provides them scheduled transportation and standard delivery time. While the second type of clients CCTS directs to Gefco or JSC Russian Railways Logistics, which in comparison to CCTS are able to satisfy such clients requirements and organize transportation by different transportation modes. However, there is no special system or procedure that allow tracing if these clients, indeed, appealed at any of these companies.

CCTS representative explained such approach that CCTS is not “oriented on the market”, when there is a search for the new clients in order to suggest them company services, but “oriented on the client”, when the main focus is on existing key clients. That is why CCTS cannot let itself to switch to new clients and deteriorate the service quality for old key ones.

3.2.8 Personnel structure

Before the coming to the conclusion of the situation analysis in JSC Russian Railways, there is need to investigate several topics that appeared during the provided above analysis of the interviews with representatives of different sub-units of Transportation and logistics business unit of JSC Russian Railways, such as mentality of people working in JSC Russian Railways and their customer focus.

First of all, one of the strategic goals of JSC Russian Railways set up in the Strategy is to become one of the top 5 most attractive large employers in Russia, attracting the best professionals, ensuring competitive salaries, increasing productivity, improving working conditions and offering modern social package. This means that the company understands the significance of the development of an employer brand and consider staff as its most important asset in order to develop a competitive transportation business in domestic and international markets.

However, according to the SHRM concept described in the literature review, such company goal has to be formulated not only on corporate level, but also systematically integrated with HR strategy on business, functional and operational levels.

Secondly, the consideration of the personnel structure of JSC Russian Railways will allow us to understand the one of the sources for such specific behavior of JSC Russian Railways staff that may become a significant constraint on the way to development of logistics business.

As it can be seen on Figure 3.5 the number of employees is decreasing every year. Due to the economic situation and the government's decision to freeze tariffs for 2014 the company had two options: to reduce the huge number of employees or to find another solution. As a result, after consultation with staff and trade unions, it was decided to switch about 133 000 employees to part-time. In November of 2015 the company withdrew from underemployment two-thirds of employees - about 89 thousand people and announced that it does not plan reductions, as well as increase of underemployment regime (The number of employees of Russian Railways fell by 5.9% in the I half-year. (N.d.). Retrieved May 26, 2016)

Figure 3.5 - Personnel portrait of Russian Railways

Sourse: V. Stepov., Vice-President of JSC Russian Railways, Presentation on Conference “Management of the Future 2015”.

From historical perspective the company implements promotion from within policy, where 95% of the top and middle managers started their work from the lowest positions that was confirmed by the phone interview with Vice-President of JSC Russian Railways.

In the company exists so called a “closed caste” of railwaymen. There are even several hereditary dynasties with a total work period of all members about 786 years and a lot of with 400 years. Besides, there is a system of continuous training - "kindergarten - school - university - a structural division of the company". The percentage of graduates accepted from non-railway universities and other educational institutions to work in JSC Russian Railways is no more than 10%.

From the presentation of V. Stepov., Vice-President of JSC Russian Railways, on Conference “Management of the Future 2015” it is possible to conclude that development of human resources in terms of additional education in non-railway universities, Corporate University of JSC Russian Railways, foreign business schools is provided only for top-managers.

From the one hand promotion from within policy allows companies to use to full extent valuable firm-specific skills accumulated by internal workers in order to achieve better performance, while external new workers lacking such firm-specific skills do not always achieve the best results in a new company culture, even if they are more educated and experienced. However, in case of JSC Russian Railways, which are going to change their business model, such long lasting internal promotion policy becomes a significant obstacle, as there is a lack of staff having decent skills to deliver more wide range of transportation and logistics services.

According to SHRM concept in order to achieve competitive advantage the company should receive and develop human resources that will enable it to quickly learn and to use efficiently their knowledge than its competitors. Due to this fact achievement of JSC Russian Railways goal in terms of development of logistics business is strongly dependent on how it will be able to get and develop people with right competences. It requires the integration of the business strategy of the organization and HR strategy with continuous involvement of top, middle, line managers and personnel on all company levels.

The situation becomes even worse, if we take into account the fact that there is a more significant need for change of mentality, norms, customs, mores, and traditions of JSC Russian Railways staff that were shaped over long period of time. It is not trivial task as according to four levels of social analysis provided at NIE, all these factors are attributed to the fist level- social embeddedness, where period of changes takes centuries or millennia.

3.2.9 Client-oriented approach

Issues of the development of client-oriented approach in JSC Russian Railways are raised during several years. In 2010, the concept of "Customer focus" was provided in the Corporate Competency Model of JSC Russian Railways (Competence, Corporate responsibility, Creativity and innovation, Customer focus, Quality and safety, Leadership) as one of the core values of the company's brand (Brochure: what is the model of corporate competencies?).

The Strategy also specifies that one of the key values of the Company is a customer-oriented and mutually beneficial long-term partnership with customers, the continuous development of products and services portfolio in the interest of consumers.

However, for such huge company as JSC Russian Railways, for which the State defines regulatory conditions, social responsibility and the special role in the economy, cardinal turn of all resources and processes in the client side is a unique challenge, covering all processes from planning to direct the implementation of transportation and its resource provision.

3.2.10 Infrastructure

According to the World Bank's Logistics Performance Index Russia (based on customs performance, infrastructure quality, and timeliness of shipments) occupies 90th place among 160 countries of the world (Logistics Performance Index. (n.d.). Retrieved May 26, 2016). Russia is among the countries with a high level of logistic costs, which reach about 19% of Russian gross domestic product and significantly reduce the efficiency of production and trade, adversely affects the competitiveness of companies and the country as a whole.

The great expectations associated with the building of terminal and logistics center (TLC) "Bely Rast" (area of 100 hectares; capacity of 290 000 TEU per year; universal terminal, customs clearance center administrative and business center) near the Moscow with direct involvement of JSC Russian Railways strategic partner Deutsche Bahn AG. However, it starts to operate only recently, which makes it hard to estimate the results.

In 2012 JSC Russian Railways approved the Concept for the Establishment of Terminal and Logistics Centers in the Russian Federation with the aim to ensure the fast delivery of goods by the various modes of transport, the processing and the preservation and reduce logistics costs and reduce the cost of transportation. There was set the task to create TLC support intermodal network across the country through the building of 50 TLC, complex reconstruction of about 60 large freight yards, facilities modernization of a technological complex, the reconstruction of tracks leading to the terminals.

However, so far it was not systematically realized as sites suitable for the TLCs creation are often occupied by the commercial structures and the possible to buy out their land is rather questionable (Prokofiev, 2016). At the same time, according to the representative of the JSC Russian Railways, the current macroeconomic situation, difficulty in attracting investment, and the limited company investment budget naturally leaded to review of the timing and projects prioritization. The total investment required for the implementation of the first stage of the concept of 560.8 billion rubles, including the railway infrastructure -. 100 billion rubles[[3]](#footnote-3).

In general, for a long period of time (about 20 years) transport system of the Russian Federation as a whole and some of its key segments were chronically underfunded. The volume of investments in fixed assets in 2011 amounted to about 2.1% of GDP (Klimenko, 2016).

Today The President and the Russian government are aware of the importance of increasing investment in infrastructure, as it is one of the key factors stimulating economic growth in the country The level of investment in transport infrastructure in Russia now is close to the developed countries - around 3% of GDP. This is enough for moderate development, but not for quality improvement (Gazprombank, 2014).

Summary

To sum up, basing on all discussed above it is possible now to come up with the following conclusions, which explains why Russian Railways experience difficulties with setting up logistics business:

* JSC Russian Railways lacks, despite the developed strategy on corporate level (the Strategy), updated business and operational strategy. The Concept covers the main problem spheres for transportation and logistics business unit and provide possible principles how they may be improved. However, in this particular study it was found that not all of the suggested in 2013 initiatives now can be considered as effective and feasible. There are no other documents of lower layer, for example, regulations of interaction.
* The organizational structure of TLBU provides only hierarchical subordination, but not clear horizontal links and relationships between sub-units. The *Department of Management of the Transport and Logistics Business Unit*, that had to take the role of control body (focus company) was not performing this assigned to it in the Concept function due to the lack of resouces and authority in practise. Ultimately, it was abolished with transferenig of its real funtions (statistics, reports etc.) to the CCTS, which according to its representative didn’t receive any official order about its functions and authority expansion.
* Between the representatives of sub-units of TLBU, established for subsequent expansion in the spectrum from 2PL to 3PL and 4PL and the formation of global logistics chains, there is no unified understanding of levels of logistics providers;
* The limitation of movement for companies from one segment to another was described by the interviewees as meaningless and hindering the services provision;
* Intercompany competition in some cases, indeed, exist. At least between JSC Russian Railways Logistics and Gefco, as they both have capabilities to provide the same services to the clients. They have an unofficial agreement to not conflict and interfere with each other, but no clear official procedure how to regulate it. Functional duplication is represented by services realized within package deal (CCTS,CDMT and JSC Federal Freight) and JSC Russian Railways Logistics. Also forwarding can be offered at different prices by operators of rolling stock, JSC Russian Railways Logistics and "GEFCO";
* Interaction as between subsidiaries as between subsidiaries and branches is based on market principles. Currently each subsidiary works as commercial and autonomous enterprise focused on maximization of their own profit and not motivated to search for synergies in order to achieve the profit maximization for JSC Russian Railways as a whole;
* Sub-units representatives expressed different views on how these interactions and synergies realization may be organized (proceed with market relationships, create a focus company, implement high level IT system);
* Quality of services provided by JSC Russian Railways not allow Gefco to integrate railways into their supply chain and, as result, attract new cargoes on them.
* Different approaches for work: Gefco and JSC Russian Railways Logistics is basing on the customer needs and satisfaction, CCTS and CDMT as branches of JSC Russian Railways put the first priority on the infrastructure capabilities, as they work mostly with big industrial clients and, fist of all, satisfy their needs.
* CCTS does not search for new clients, moreover, while new small customers come to them by themselves they are seen rather as noise or extra load for infrastructure; they tell such client to apply into JSC Russian Railways Logistics or Gefco, but do not trace whether such application was indeed done or client was lost;
* Mentality of staff, formed during significant period of time, its structure, type of education and development is strongly focused on the railways;
* Underdeveloped transport and logistics infrastructure, requiring significant investments.
  1. **Analysis of business models of global leader DB Schenker**

In the context of Russian railways reforming and development of logistics business, investigation of Germany experience may provide useful insights

3.3.1 Reforming process

From 1950 to 1990s both railways of Western and Eastern Germany (Bundesbahn and Reichsbahn, respectively) experienced a steady economic decline. Continuously increasing competition from road transport and decades of political neglect of the railways as a mode of transport led to long-term loss of market share in passenger and freight traffic and significant financial burden caused by the repair of the war damage. As result, such factors put pressure on politicians to reach cross-party consensus to implement a rail reform, which converted Bundesbahn and Reichsbahn into “joint stock company with strict entrepreneurial approach to business” Shwilling, A. (2014) in order to reduce government influence.

The first phase of railway reform began in 1994 with the creation of Deutsche Bundesbahn AG, where were allocated operational and infrastructure sector.

The second phase (since 1998.) was marked by the appearance independent economic entities. Separation of five joint stock companies was made on the basis of specialization - DB Regio (regional transportation), DB Cargo (freight transportation), DB Netz (infrastructure management), DB Station & Service (maintenance). The infrastructure of the railways became available for private companies and created joint-stock companies became able to provide their own transport services.

The regulatory and supervisory powers in the transportation sphere were transferred to the administrations of local and regional authorities. A special cover funds have been created to cover the operating costs and expenses for the modernization of infrastructure.

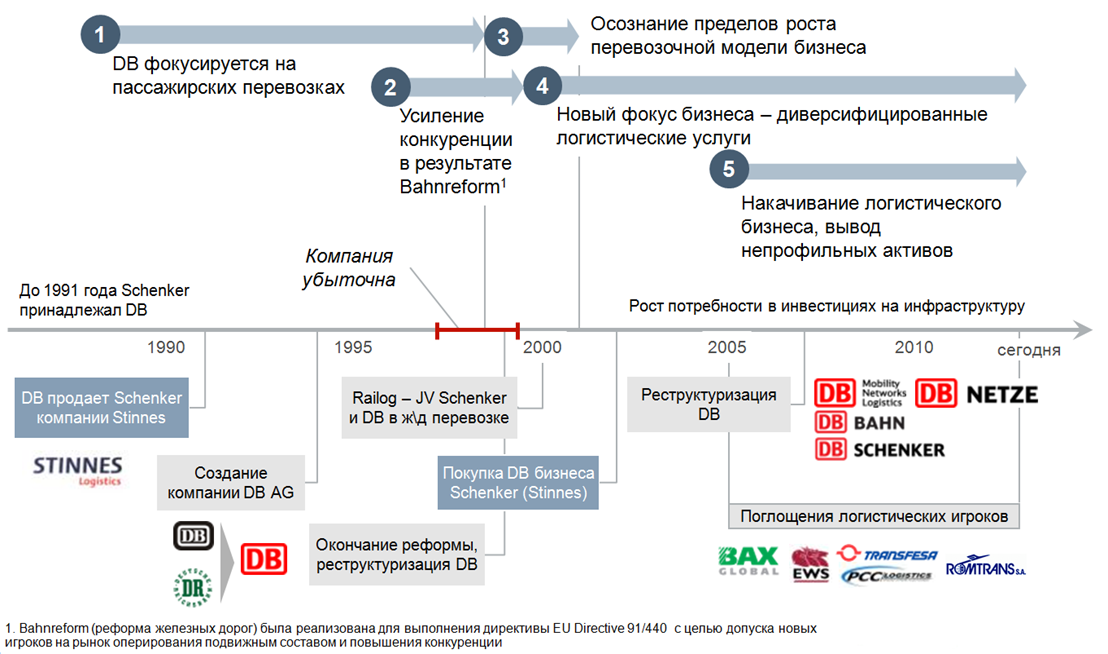
From the one hand, railways reforms led to a significant increase in passenger traffic volumes, solution of the problem of technical re-equipment and payment of credit obligations, as well as reduction in overall costs. From the other hand, transport companies were interested only in providing cost-effective services (passenger traffic) (Railway industry. Problems and solutions. (N.d.).

3.3.2 Steps of development of the DB Group business model and structure

In terms of diversification of cargo business through the development of logistics, Deutsche Bahn AG accumulated an appropriate successful experience, when significant part of its revenues accounted for logistics services.

In general, the evolution of DB Group business model may be separated into the provided on the Figure 3.6 phases :

* Focus on passenger transportations;
* Increase of competition due to Bahnreform triggering the appearance of new players on the rolling stock market;
* Understanding of growth limits of carriage business model;
* Change of focus on diversified logistics services:
* The development of logistics business, the withdrawal of non-core assets.



Raillog-JV of Shenker and DB at passenger transportation

growth in infrastructure investment needs

The development of logistics business, the withdrawal of non-core assets

Until 1991 DB owned Shenker

Company was unprofitable

DB focused on passenger transportations

Absorption of logistics operators

DB restructuring

DB bought Shenker

The end of restructuring DB reforms

DB sold Shenker to Stinnes

Foundation of DB AG

New focus - diversified logistics services

Awareness of growth limits of carriage business model

Increase of competition due to Bahnreform

Figure 3.6 - The evolution of the DB Group business model

Source: Adopted from the Concept of transportation and logistics business development of JSC Russian Railways, 2013

The organization structure of Deutsche Bahn AG was gradually improved in accordance with reform steps and phases of development of diversified company portfolio that is shown on Figure 3.7

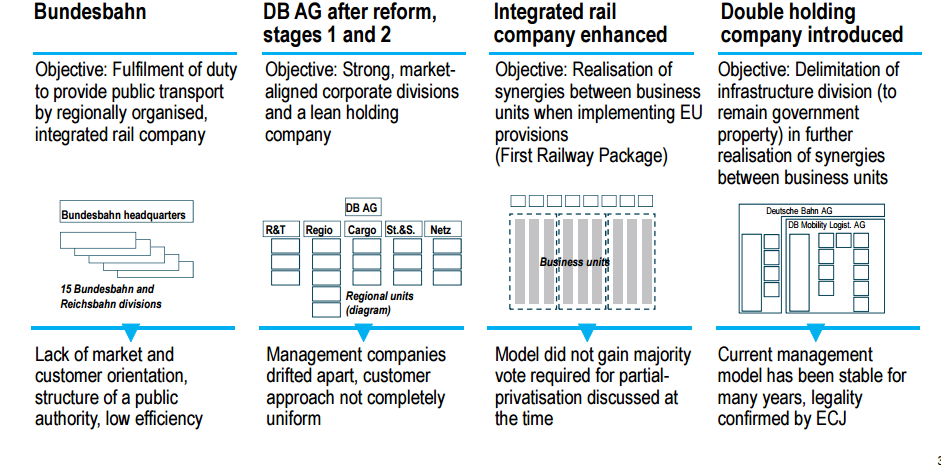


Figure 3. 7- Organisational development at DB Group

Source: Shwilling, A. (2014). 20 years of German rail reform: Achievements and challenges https://www.deutschebahn.com/file/en/2206730/Unn9V9jYojbN0Ev9YL7uI9Z\_TU0/5967586/data/20\_years\_outline.pdf

Today ***Deutsche Bahn Group (DB Group)***, headquartered in Berlin, is a provider of logistics services on international level with presence in more than 130 countries. Within DB Group there are two operational management holding companies run by board divisions consisting mostly of same people:

* ***Deutsche Bahn AG (DB AG)*** is responsible for Infrastructure division including three business units such as DB Netze Track, DB Netze Stations and DB Netze Energy.
* ***DB Mobility Logistics AG (DB ML AG)*** runs the other six business units.

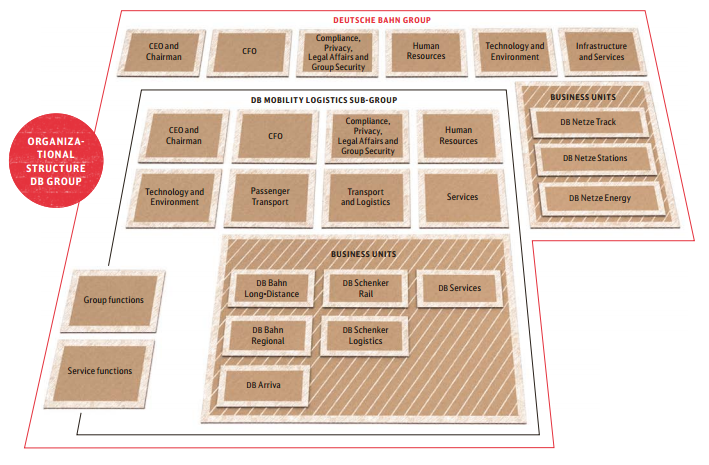


Figure 3.8 – Organizational structure of DB Group

Source: Deutsche Bahn. (2014) Integrated Report

In general, all *nine business* are distributed to the *three operating divisions* of ***Passenger Transport***, ***Transport and Logistics*** and ***Infrastructure and Services,*** which are managed on an integrated basis and have the single common brand.

In order to regulate strong operational dependencies and interconnections existing between DB AG, DB ML AG and the individual business units, as well as between business units, there were developed in detail *service and financial relationships*, described verbally, schematic and in tabular form.

**3.3.3 Business Model description**

The effectiveness of DB Group business model is based on the interconnection of the Passenger Transport, Transport and Logistics and Infrastructure divisions, allowing DB Group to provide services from one single source in all transportation segments with its national and international services.

The successful development of DB Group is grounded on the main key success factors of business model:

* ***Entrepreneurial approach:*** during reformation process DB Group is, first of all, become a *commercial enterprise*;
* ***Integrated Group:*** The integrated structure allows DB Group to optimize the wheel-rail system and achieve positive synergies.
* ***International direction:*** DB Group has a high position in passenger transport on European market and in transportation and logistics market in Europe and globally.
* ***Intermodal transport*** solutions: due to the smart linkage of different modes of transport DB Group is able to provide customers *door-to-door mobility* and *logistics solutions from a single source* as well as additional services in the transport and logistics area.

3.3.4 Transport and logistics division

Both of the business units *DB schenker rail and DB schenker logistics*, which yields about 40 % of DB Group revenue are managed in the Transport and Logistics division with dense networks in European rail freight and land transport, global air and ocean freight transport, as well as industry-specific expertise in global contract logistics.

Table 3.2- Main characteristics of DB Schenker Rail and DB Schenker Logistics

|  |  |  |
| --- | --- | --- |
|  | **DB Schenker Rail** | **DB Schenker Logistics** |
| ***Employees:*** | around 31,000 | around 65,000 |
| ***Vehicles:*** | 3,000 locomotives, 92,000 wagons and freight cars | around 29,000 trucks (includes external) |
| ***Infrastructure*** | sites in 15 european countries, 4,200 customer sidings, ten marshaling yards and 21 maintenance facilities | more than 2,000 offices in more than 130 countries, thereof 720 offices in european land transport and 800 offices worldwide in air/ocean freight,7 million m² of warehouse surface area in contract logistics globally |
| ***Customer segments:*** | business customers with a focus on automotive, construction materials, chemical, industrial goods, intermodal, consumer goods and iron, coal and steel (montan) | business customers with focus on automotive, chemicals, consumer, electronics, healthcare, industrials, retail and semiconductors/solar |
| ***Customer access:*** | > industrial sales and distribution with key account management  > Regional sales and distribution  > telephone sales and distribution  > Customer service center | >offices  >Key account management  >e -services |
| ***Key activities:*** | > operating trains  >Design european transport solutions  >provide and maintain vehicles  > plan and operate networks  > provide additional logistics services | >plan and operate global networks  >implement/organize transport and warehousing services  > purchase freight capacity  >provide additional logistics services |
| ***Services*** | > freight carried: 329 million  >volume sold: 103 billion tkm | > shipments in European land transport: 99 million  > air freight volume (export): 1.1 million t  > ocean freight volume (export): 2.0 million teu |

Such an impressive position was achieved due to the fact that processes is based on the *principle of "one window":* transportation and logistics services are accomplished by a single provider, ensuring security, controlling the whole process of transportation and regular lines (daily delivery of cargoes), and finally, the *use of modern terminals - multifunctional transport and logistics centers and logistics centers.*

For DB Schenker Rail business unit the transportation of goods by rail is the most important source of revenue. DB Schenker Rail customizes for its clients transport and logistics solutions and also links the transport modes (rail, truck and ocean freight).

WhileDB Schenker Logistics is expert in the planning and handling of complex global supply chains, as it is provides an integrated transport and logistics services having a global network with the focus on established markets and emerging national economies:

**3.3.5 Client focus, infrastructure and IT systems.**

In Germany, the share of railways in the freight segment accounts for only about 17%, while automobile transportation- about 70% (BUNDESNETZAGENTUR, 2014). Railway Market Analysis. In such a situation each client for railway company is important and in order to retain him Deutche Bahn AG has to implement a lot of significant changes.

First of all, according to the interview[[4]](#footnote-4) with the Head of the board of directors, Chairman of the DB Schenker Rail Automotive Axel Marshall, company understood that the willingness to meet and satisfy the client needs - a significant competitive advantage, especially when customer expectations are increasing and forcing the service provider to be more flexible. To the traditional demands of compliance with timetables and price stability was added the requirements to maintain the entire supply chain and provide the integrated transport organization on the principle of "one window".

Secondly, the important role is attributed to the information component. Digital revolution change the work of all DB Group business units. It becomes highly important to digitalize the company products in compliance with customer needs in order to get their long-term loyalty.(Deutsche Bahn, 2014). As Axel Marshall said clients do not want to know where is a train or car, they want to know where is their particular cargo. According to customer needs company started to track the information not about trains and specific cars, but about particular cargo for particular client. For these purposes company developed a mobile application simple enough that client can work with it, providing the information about the location of the goods at the moment, vehicle condition, etc.

In DB AG were developed highly useful for logistic purposes eServices, or Web­based services, that previously were based on different standards. Since January 2015 they were unified and joined into one eSchenker platform providing small and large customers as with common services (booking and tracking), as with more specialized ones 24 hours per day in 130 countries.The next step was done towards the creation of global portal for all DB Schenker business units, expanding eServicies, automating processes and ensuring transparency. As result, it creates a significant value for DB AG customers through the possibility to plan online services, place orders, track and pay for them.

The other important factor for the development of profitable business is continuous financial inflows into existing infrastructure. In case of DB Group they are ensured by the performance and financing agreement between the German Federal Government and DB Group (Leistungs- und Finanzierungsvereinbarung; L u FV ), according to which for the period 2015- 2019 around € 28 billion will be funded into network, stations and power supply facilities modernization.

DB Group is continuously develop and cost-effectively operates the transport networks, which require huge and long-term capital investments, basing on optimal capacity and resources usage in order to ensure its economic development. It allows company to increase traffic volumes leading to economies of scale in terms of costs and improvement of the service quality for the customers (increased frequency of services and shorter transport times) in order to increase customer satisfaction and profitability.

In conclusion, for over two decades, Deutsche Bahn carried out large-scale changes. The main challenge for DB AG was to completely rethink their business and put the main priority not on the railway transport, but on the mobility as a fundamental ability to move.[[5]](#footnote-5) Company actually protected the future of German rail freight transport through its integration into international and effective logistics networks, which ensure its growth opportunities Deutsche Bahn. (2014) Integrated Report

Summary

After the analysis of the development of logistics business in DB AG it is possible to identify the main features that allow company to become effective in this sphere:

* The clearly defined business model based on the interconnection of the Passenger Transport, Transport and Logistics and Infrastructure divisions, allowing to provide services from one single source in all transportation segments with its national and international services;
* Service and financial relationships between business units are developed in detail: described verbally, in schematic and tabular form, allowing effective regulation of strong operational dependencies and interconnections between them.
* Transport and Logistics business division consists of only two units DB schenker rail and DB schenker logistics with clearly defined main roles. DB schenker rail, obtaining 3,000 locomotives, 92,000 wagons and freight cars, has the first priority- to transport goods by rail, while for DB schenker logistics - planning and handling of complex global supply chains;
* Development of customer focus was set by company as the main source of competitive advantage, especially when customer expectations are increasing and forcing the service provider to be more flexible;
* Developed of adding value eServices, such as eSchenker platform, providing small and large customers with possibility to plan online services, place orders, track and pay for them, and global portal for all DB Schenker business units, expanding eServicies, automating processes and ensuring transparency;
* Continuous financial inflows into existing infrastructure, supported by the German Federal Government, usage of modern terminals - multifunctional transport and logistics centers and logistics centers;
* Ability to move the first priority from transportation by railways to the provision of complex transportation and logistics services for clients, covering the whole supply chain, with subsequent integration of railway transport into this international and effective logistics networks.

**3.6 Key issues and directions for their solutions of Logistics business at in JSC “Russian Railways”**

In order to determine which positive practices of by DB AG in setting up of logistics business may be used by JSC Russian Railways to improve the development of logistics business it necessary to conduct cross-case analysis of both companies based on the previous results, which will be discussed gradually below.

Both joint stock companies appeared from state monopolies pressed by external environment to implement changes in order to improve their profitability. In general, reforms of Russian railways in main principles - phasing, objectives and methods - correspond to German. The results of railway reform in Germany are considered generally as succefull, while in Russia, not all intended phases were completed and current results are rather questionable.

The initial reasons and aims for reforms in both countries do not coincide fully. In Germany, they were to eliminate cross-subsidization, increase productivity, develop of competition in the transport market and overcome competition from alternative modes of transport, which were the first priority (the share of railways in the freight segment accounts for only about 17%, while automobile transportation- about 70%). While in Russia, it was more important to increase the investment attractiveness, change tariff mechanism and also develop the competition.

Such challenge to attract cargos from competing modes of transport has appeared only recently. As in Russia, railroads historically carried the primary traffic load (railway transport in Russia accounts for more than 85% of turnover, excluding pipeline). On long distances railways are still wining the competition for goods. However, in the last years on the middle and short distances cargos began to shift to other modes of transport and especially on railroad transport, which also gradually increases its transportation distance, forcing railways to become more flexible and increase their service range and, as result, development of logistic business.

DB AG came up with understanding of limits of carriage business model and change the focus on diversified logistics services earlier than JSC Russian Railways.Today DB AG managed to develop a clear business model based on three effectively interconnected business divisions such as Passenger Transport, Infrastructure and Transport and Logistics divisions, where the last one generates about 40% of total revenue and consists of only two business unitsDB Schenker rail and DB Schenker Logistics. While JSC Russian Railways lacks not only well defined business model for new established Transport and Logistics business unit, consisting of 12 subsidiaries, 2 branches and 1 structural division, but also updated business and operational strategy.

The overall organizational structure of DB AG was gradually changed and refined. There were developed detailed service and financial relationships between business units described verbally, in schematic and tabular form, allowing effective regulation of strong operational dependencies and interconnections between them. While the structure of Transportation and Logistics business unit provides only hierarchical subordination, but not clear horizontal links and relationships between its parts.

DB Schenker Rail and DB Schenker Logistics have clearly defined main roles inside the Transport and Logistics business division, while in Transportation and Logistics business unit there are intercompany completion and functional duplication. In DB AG customer focus as the main source of competitive advantage was implemented in the work processes, while in JSC Russian Railways it is only at the level of need awareness and require a well developed plan for its realization. It also connected with lack

Also DB AG succeeded in the development eSchenker platform, where small and large customers may plan online services, place orders, track and pay for them, and global portal for all DB Schenker business units, automating processes and ensuring transparency, while in JSC Russian Railways such high level IT solutions only at the planning stage. DB AG infrastructure is supported by the German Federal Government with continuous financial inflows. JSC Russian Railways infrastructure vice versa is underdeveloped due to the lack of sufficient investments.

The final aspect that should be considered is DB AG ability to move the first priority from transportation by railways to the provision of complex transportation and logistics services for clients. JSC Russian Railways still is strongly focused on provision of basic transportation trying to bundle all other services to it, without increasing its level and quality. Moreover, the mentality of staff, formed during significant period of time, its structure, type of education and development is highly focused on the railways as well, implying a significant barrier for changes.

The investigation of both cases, which reveal the problems in JSC Russian Railways and positive practices in DB AG of logistics business development, it is possible now to suggest the following direction for improvement:

* Development of updated *business and operational strategy* as well as regulations of interaction between the parts of Transportation and Logistics business, which allow company to identify clearly its sustainable completive advantage, how it will be achieved, and what specific actions each operational unit should perform to support it.
* Development of *detailed service and financial relationships* between sub-units of Transportation and Logistics business unit that should be described verbally, in schematic and tabular form in order to provide effective regulation;
* The development of an *effective scheme of coordination* and interaction of transportation and logistics business unit. Currently, all the parts of business unit are working on market conditions, focusing on achieving their own profitability, but not for the whole holding, which means that in such situation the synergies are not realized to the whole extent. The possibility of coordination carried by the Centre for Corporate Transport Service is not the best option due to the fact that people working there do not have necessary competences and client- oriented mentality. Therefore, it seems like it will be much more effective if all subsidiaries were organized under one truly logistic company as Gefco or JSC Russian Railways Logistics (it is more preferable than Gefco, as has higher understanding of specificity of working on JSC Russian Railways).
* In order to implement *client-oriented principles* in JSC Russian Railways there should be developed a special model of corporate culture of customer focus, taking into account the specifics of the industry and covering three levels: customers (passengers, shippers, etc.), employees who directly interact with customers ("front-line"), top-managers. In this regard there also should be implemented systematic development of Client Managers Institute and the implementation of the "one window" and single contract principle, as well as call center with special feature allowing calls made to one number to be forwarded to another specified number;
* In order to deal with *mentality* of staff, JSC Russian Railways should also hire more people for work in sub-units of Transportation and Logistics business unit not only from railway universities and provide training for all levels of staff.
* JSC Russian Railways should speed up the *creation single of CRM-system* connected to a single database of customer data that must be installed in all business units of the transportation and logistics business unit. Also there should be put into active use the special lock and seal devices allowing remote tracking of goods movements based on the equipment of satellite navigation systems GLONASS / GPS;
* JSC Russian Railways, as once DB AG managed to do, should move the first priority from *transportation by railways* and stop to bundle all services around it. It should firstly come from the real clients needs, which require the provision of complex transportation and logistics services. JSC Russian Railways should improve the services provided on railways and bring them in tight compliance with 7R and “just in time” principles in order to be integrated in complex supply chains and insure it sustainable future.

Conclusion

As result, in the conducted study there were compared the processes of logistics business development in two railway companies- JSC Russian Railways and Deutsche Bahn AG.

The investigation of JSC Russian Railways reveals what problems and obstacles hinder the setting up of logistics business. Between them the most important are the lack of updated business and operational strategy, the confusing organizational structure, lack of effective scheme of interaction between all subsidiaries and branches, focused on maximization of their own profit and not on of JSC Russian Railways as a whole. Moreover, analysis showed different approaches for work with clients between subsidiaries and branches of JSC Russian Railways due to different mentalities and lack of clear definition who is client for each particular side. Also, it is possible to conclude that JSC Russian Railways is too focused on transportation by rail, attraction of new cargos on railways and usage of existing infrastructure. Sometimes it uses administrative forces to make Gefco to organize complex service through particular routes and infrastructure facilities even if they are not the most convenient. While the low quality of services provided by JSC Russian Railways often not allow Gefco to integrate railways into their supply chain and, as result, attract new cargoes on them. Underdeveloped transport and logistics infrastructure of JSC Russian Railways, requiring significant investments is also significant issue.

The analysis of Deutsche Bahn AG case showed that company managed to overcome such problems and currently have successful business model, effective organizational structure with clearly defined service and financial relationships between business units, while each of them has clearly defined main roles. Customer focus is implemented in all company activities, based on advanced eServices and platforms and infrastructure receive sufficient investments. And what is more important Deutsche Bahn AG managed to shift its focus from railways to the effectiveness of whole supply chain in order to increase customer satisfaction.

Both these analysis together with main implications provided from the literature review on logistics concept, SCM concept, levels of logistics providers, reforming of railway sector, NIE, Strategic management and SHRM concepts allow to suggest the direction for improvement of logistics business in JSC Russian Railways.

However, as the main limitation of this study is poor access to the primary data from Deutsche Bahn AG due to the fact the company is very closed, there is a need for further research that will be intended to reveal particular steps, implemented by the company in order to shift the mentality of people to client oriented view and focus on railroads to the whole supply chain.

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