

# About the model of railway transport management in Russia

*Sergey Bykadorov*<sup>1</sup>, *Muratbek Arpabekov*<sup>2</sup>, *Sakijan Khudayberganov*<sup>3</sup>, *Shinpolat Suyunbayev*<sup>3</sup>, *Utkir Khusenov*<sup>3\*</sup>, and *Mafratkhon Makhmudovna*<sup>3</sup>

<sup>1</sup>Siberian Transport University, st. Dusi Kovalchuk, 191, 630049, Novosibirsk, Russia

<sup>2</sup>L.N. Gumilyov Eurasian National University, st. Satbaeva 2, 010000, Astana, Kazakhstan

<sup>3</sup>Tashkent State Transport University, 100167, Tashkent, Uzbekistan

**Abstract.** Structural reform of railway transport of Russia realized within the last 20 years is synthesized descriptive and standard approaches to the analysis of the large-scale institutional project. Quantitative indices and the qualitative expert judgments testifying to ambiguity of results of long-term reforming are given. The conclusion is drawn that Reform did not lead to transformation of the railways of Russia into an effective remedy of transformation of industrial economy where they were rather effective, in modern high-speed hi-tech transport communication, congruent to the future society of the knowledge, identified today with digital economy. Offers on the content of options of the further reform development and the mechanism of its management are formulated. **Key words:** Structural reform, JSC “Russian Railway”, state regulation, Trans-Siberian Railway, natural monopolism.

## 1 Introduction

The goals and objectives of the multi-year structural reform of rail transport (hereinafter-the reform) – a large-scale institutional project, initially identified in the government concept of 1998 [1] and refined in 2004 and 2009 [2-3], (here in after – the Government concept) were formulated as follows:

“In the context of economic growth, the key requirements for the efficient operation of rail transport are to reduce their own costs, increase the motivation of industry workers, the ability to meet the increasing demands of users for the quality of services and respond flexibly to changes in demand. The solution of these issues is primarily connected with the formation and development of competition in the field of transportation”.

These goals, if to date and implemented, it is only partially, and most of the targets as of the beginning of 2018, as noted in the [4-6]. not achieved at all. To understand the causes of the failure of governmental reform, we turned to corporate “Concept of management of the company holding type, formed in the result of reorganization of JSC “Russian Railways”” [7] (here in after – the Concept of Russian Railways). It is natural to assume that the Russian Railways Concept developed by the state railway corporation in 2008 is Executive in relation to the Government concept.

---

\* Corresponding author: [otkirxusenov@mail.ru](mailto:otkirxusenov@mail.ru)

However, the analysis of the relevant texts shows that this is not the case: already at the stage of conceptual design, these concepts were not subordinated, but rather competitive, which follows from the first phrase of the Concept of JSC “Russian Railways”

“The reform measures of the Russian Railways holding achieved the expected results only on condition of systematic and adequate improvement of the management system, first of all the management system of JSC “Russian Railways” as the parent company of the holding. To this end, the company is implementing the project “The management system construction of JSC “Russian Railways” in the conditions of reform” [8]. And further, throughout the document there are no references to the Government concept and, as a consequence, the objectives of the Reform formulated in it are not clear how they are interpreted in the impersonal term “expected results”.

## **2 Materials and Methods**

The holding, an organizational means of achieving the goals and objectives of the railway transport reform, was conceptually defined by the railway employees on an uncontested basis and served as another target for future transformations, introduced into the system of goals declared by the Government concept. Thus, at the key stage of the Reform, the stage of goal-setting, a strategic mistake was immediately made, typical of a bureaucracy that thinks by means: the goals were confused with the means to achieve them. Therefore, the possibility of considering competing organizational alternatives with the subsequent identification of the most preferred alternative was initially closed. At the forefront, as in the planned economy, was the idea of a technologically unified hierarchically controlled from the center of the railway complex throughout the sovereign territory of the country, i.e., extraterritorially. This approach was somewhat hampered by the legacy of the USSR and Russian MPS-territorial-divisional organizational structure of railway transport management, but it was changed to a model of management by type of activity (MPS – Ministerstvo Putey Soobshcheniya – Ministry of Railways).

As a result, competition as a tool to force economic agents to work effectively in the Russian Railways Concept was not even mentioned, and during the reform the tool was used restrictedly and only in the transport market by rolling stock operators (without locomotive traction). Moreover, as the reform progressed, the institution of competition was compromised when the lack of qualified government regulation in 2011 nearly led to the collapse of the Railways: private cars, being focused only on cost-effective transportation, formed traffic jams, standing idle waiting for profitable routes on the already scarce network of Russian Railways. It should be noted that to date, in some railways, the car fleet has not been transferred to private hands and the above operational problems exist. A number of research works have been devoted to improving operational performance [24-29].

As a result, a super centralized multidimensional model of public Railways management was created, the network of which covered 1/7 part of the earth’s land. In terms of traffic volumes, the length of the tracks (85.2 thousand km, i.e., 99% of all highways of the country), Russian Railways is the second after the US Railways, in terms of freight traffic it is among the three largest transport companies in the world. The share of Russian Railways in the freight turnover of the transport system of Russia is about 42%, in passenger turnover-about 33%. But all these are extensive indicators, indicating the gigantic scale of transportation activities, managed by a multi-stage and multi-level hierarchy. If we turn to the indicators of efficiency and quality of this megastructure (see Tables 1, 2, 3 and 4), we can see that during the years of Reform, they have not deteriorated at best.

**Table 1.** Indicators of the use of freight cars on the Russian railway network (data are calculated using (Source: [9])).

| Years | Indicators                |                       |   |   |                                |                                       |                       |                              |
|-------|---------------------------|-----------------------|---|---|--------------------------------|---------------------------------------|-----------------------|------------------------------|
|       | Average train speed. km/h | Technical speed. km/h | Average speed of delivery of cargo shipment. km/day | Coefficient of empty run to total. in % | Turnover of freight cars. days | Fleet of freight cars. thousand units | Shipped. million tons | Cargo turnover. billion t-km |
| 2003  | 39.0                      | 46.8                  | 252.0   | 39.9                                    | 8.35                           | 816.6                                 | 1160.8                | 1669.0                       |
| 2004  | 39.6                      | 47.5                  | 269.0   | 39.9                                    | 8.06                           | 857.0                                 | 1220.9                | 1802.0                       |
| 2005  | 40.2                      | 48.4                  | 280.0   | 39.6                                    | 7.75                           | 876.4                                 | 1273.1                | 1858.0                       |
| 2006  | 40.3                      | 48.7                  | 277.0   | 40.2                                    | 7.73                           | 909.9                                 | 1311.3                | 1951.0                       |
| 2007  | 40.3                      | 48.9                  | 284.0   | 39.3                                    | 7.70                           | 975.5                                 | 1344.2                | 2019.3                       |
| 2008  | 40.6                      | 49.1                  | 273.0   | 39.1                                    | 7.58                           | 1004.3                                | 1303.7                | 2116.2                       |
| 2009  | 41.6                      | 49.3                  | 290.0   | 41.3                                    | 7.45                           | 991.9                                 | 1108.2                | 1865.3                       |
| 2010  | 41.2                      | 49.3                  | 274.0   | 40.5                                    | 13.44*                         | 1026.7                                | 1205.8                | 2011.3                       |
| 2011  | 37.1                      | 46.5                  | 247.0   | 40.2                                    | 14.40                          | 1091.8                                | 1241.5                | 2127.8                       |
| 2012  | 36.0                      | 45.2                  | 219.0   | 40.3                                    | 15.49                          | 1151.5                                | 1271.9                | 2222.4                       |
| 2013  | 36.8                      | 45.6                  | 223.0   | 40.8                                    | 16.90                          | 1200.5                                | 1236.8                | 2196.2                       |
| 2014  | 37.7                      | 45.6                  | 299.2**   | 40.9                                    | 17.00                          | 1221.4                                | 1226.9                | 2298.6                       |
| 2015  | 39.1                      | 46.4                  | 341.2   | 40.7                                    | 16.51                          | 1155.7                                | 1214.5                | 2304.8                       |
| 2016  | 39.7                      | 46.7                  | 361.0   | 40.6                                    | 15.74                          | 1074.6                                | 1222.3                | 2342.6                       |
| 2017  | 40.3                      | 47.0                  | 362.3   | 40.4                                    | 15.10                          | 1077.5                                | 1261.3                | 2491.4                       |
| 2018  | 40.9                      | 46.6                  | 370.1   | 40.1                                    | 15.27                          | 1112.8                                | 1415.3                | 2596.9                       |

**Table 2.** Operating indicators (Source: [10]).

| Indicators                                       | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018*  |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Freight turnover, billion tones-kilometers       | 2423.8 | 2271.3 | 2501.8 | 2704.8 | 2782.6 | 2813.1 | 2954.5 | 2954.9 | 2997.8 | 3176.2 | 3304.8 |
| Passenger turnover, billion passenger-kilometers | 175.9  | 151.5  | 138.9  | 139.8  | 144.6  | 138.5  | 128.8  | 120.4  | 124.5  | 122.8  | 129.4  |

**Table 3.** Financial Highlights (Source: [10]) All amounts are in RAS and in billions Russian Roubles.

| Indicators                                 | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018*  |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Revenues from main activity                | 1101.7 | 1050.2 | 1195.1 | 1288.3 | 1366.0 | 1376.6 | 1401.7 | 1510.8 | 1577.5 | 1697.6 | 1798.4 |
| Revenues from shipments including:         | 1014.5 | 956.8  | 1079.3 | 1109.1 | 1206.5 | 1209.5 | 1225.0 | 1326   | 1387   | 1493.6 | 1585.1 |
| Cargo revenues                             | 847.0  | 783.0  | 936.2  | 1003.1 | 1089.3 | 1088.2 | 1105.7 | 1203.9 | 1254.5 | 1352.8 | 1454.5 |
| Revenues from locomotive traction services | 10.6   | 11.0   | 11.8   | 11.4   | 12.4   | 11.0   | 10.3   | 10.5   | 10.9   | 11.2   | -      |

|  |               |              |               |               |               |               |               |               |               |               |               |
|--|---------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Revenue from infrastructure services           | 6.5           | 11.8         | 88.4          | 87.2          | 96.7          | 101.7         | 99.0          | 99.8          | 104.6         | 107.8         | 105.7         |
| Passenger revenues                             | 150.4         | 151.0        | 42.9          | 7.4           | 8.1           | 8.6           | 10.0          | 11.7          | 17            | 21.8          | 24.9          |
| Other revenues                                 | 87.2          | 93.3         | 115.8         | 179.2         | 159.5         | 167.1         | 176.7         | 184.8         | 190.5         | 204.0         | 213.3         |
| <b>Expenses on main activity</b>               | <b>1035.3</b> | <b>999.9</b> | <b>1084.2</b> | <b>1215.5</b> | <b>1298.6</b> | <b>1317.8</b> | <b>1343.2</b> | <b>1427.2</b> | <b>1460.3</b> | <b>1557.6</b> | <b>1657.6</b> |
| Expenses on transportation, including:         | 952.1         | 913.8        | 986.4         | 1050.8        | 1151.5        | 1165.9        | 1185.6        | 1266.2        | 1296.2        | 1381.8        | 1469.5        |
| Expenses on freight shipments                  | 722.7         | 691.1        | 796.1         | 933.2         | 1017.4        | 1027.6        | 1048.1        | 1137.4        | 1160.8        | 1246.0        | 1332.2        |
| Expenditures from locomotive traction services | 7.8           | 8.3          | 8.8           | 8.4           | 9.1           | 8.2           | 7.6           | 7.8           | 8.1           | 8.2           | -             |
| Expenses from infrastructure services          | 4.7           | 11.1         | 86.2          | 102.2         | 118.8         | 122.3         | 119.4         | 109           | 112.4         | 108.8         | 114.6         |
| Expenses on passenger transport                | 216.9         | 203.3        | 95.3          | 7.0           | 6.2           | 7.8           | 10.6          | 11.9          | 14.9          | 18.7          | 22.7          |
| Expenses on other activities                   | 83.2          | 86.1         | 97.8          | 164.7         | 146.9         | 151.9         | 157.6         | 161           | 164.1         | 175.8         | 188.1         |
| <b>Gains (losses) from sales</b>               | <b>66.4</b>   | <b>50.2</b>  | <b>110.9</b>  | <b>72.8</b>   | <b>67.4</b>   | <b>58.8</b>   | <b>58.5</b>   | <b>83.6</b>   | <b>117.2</b>  | <b>140.0</b>  | <b>140.8</b>  |
| Gains (losses) from shipments                  | 62.4          | 43.0         | 92.9          | 58.3          | 54.9          | 43.6          | 39.4          | 59.8          | 90.8          | 111.8         | 115.7         |
| Gains (losses) from other activities           | 4.0           | 7.2          | 18.0          | 14.5          | 12.5          | 15.1          | 19.1          | 23.8          | 26.4          | 28.2          | 25.1          |
| <b>Income before taxation</b>                  | <b>54.8</b>   | <b>60.3</b>  | <b>125.4</b>  | <b>76.6</b>   | <b>66.2</b>   | <b>19.4</b>   | <b>-39.2</b>  | <b>25</b>     | <b>43.6</b>   | <b>52.2</b>   | <b>56.8</b>   |
| <b>Income</b>                                  | <b>13.4</b>   | <b>14.4</b>  | <b>74.8</b>   | <b>16.8</b>   | <b>14.1</b>   | <b>0.7</b>    | <b>-44.1</b>  | <b>0.3</b>    | <b>6.5</b>    | <b>17.5</b>   | <b>18.4</b>   |

**Table 4.** Some indicators and estimates of the work of different types of transport in Russia\*. \*Data used [20]. \*\*Taking into account the construction of highways. \*\*\*Cargo transportation.

| Type of transport | Operational length, thousand km | Network Density, km per 1000 sq.km | Cost price traffic, RUB/10 PRIV.t-km | Specific cap. investments, RUB/10 PRIV.t-km | Manufacturer labor productivity, thousand PRIV.t-km/1 worker | Consumer estimates, place |                   |                            |
|-------------------|---------------------------------|------------------------------------|--------------------------------------|---|--|---------------------------|-------------------|----------------------------|
|                   |                                 |                                    |                                      |   |  | Quality of service        | On traffic safety | Environmental friendliness |
| Railway           | 85.7                            | 5.1                                | 0.48                                 | 9.2   | 1366   | 4                         | 2                 | 2                          |
| Automotive        | 950                             | 47                                 | 10.7                                 | 8.0**                                       | 145  | 3                         | 6                 | 6                          |
| Oil pipeline      | 75                              | 4.4                                | 0.18                                 | 6.5   | 18 000   | 1                         | 1                 | 1                          |
| Sea               | —                               | —                                  | 0.32***                              | 6.0   | 9500   | 5                         | 5                 | 5                          |
| Internal water    | 101                             | 5.3                                | 0.50                                 | 3.8   | 1500   | 6                         | 3                 | 4                          |
| Aviation          | 600                             | 35.4                               | 1.7                                  | 5.6   | 980  | 2                         | 4                 | 3                          |

The analysis of the Tables suggests that the Reform, which lasted 20 years, did not lead to the transformation of Russian Railways into an effective means of transforming the industrial economy, where they were relatively effective, into a modern high-speed high-tech transport communication, congruent with the future knowledge society, identified today with the digital economy.

Some specialists of JSC “Russian Railways”, for example, in [11], in 2014, based on the analysis of the dynamics of financial and technical and economic indicators, also noted “negative trends” in the company’s activities.

There are three systemic reasons for this:

- miscalculations in strategic management;
- the decline in the quality of operating activities;
- deterioration of financial management.

These factors are closely related, but strategic management is Central. As a result of the reform of rail transport the state regulator was withdrawn from the industry, the rolling stock has passed into private hands, i.e., is also removed from the system; resource management is extremely centralized; in other words, previously existing roads as a business unit were abolished. The center of responsibility was the office of JSC “Russian Railways”. The way out of the difficult financial situation of the company can be two options: either to improve the management system in the Central office, or to decompose the management of railway resources, in other words, to carry out a counter-reform in a certain sense.

### 3 Results and Discussion

Let’s focus on the main reasons for what happened and try to formulate options for further reform, since expensive Russian rail transport, moving goods and passengers at the speed of a cyclist, is an anachronism that hinders the development of the country’s economy. To do this, first consider the management model of the Corporation of JSC “Russian Railways” at the micro level, as if “from below”, from the process of railway transportation. Let’s simplify the situation and reduce it to a non-coalition game. Since by definition the model of management of a giant corporation is multidimensional, then, simplifying further, we present it two-dimensional, when a player (called Rails) is responsible for infrastructure, and another

(called the Carrier) is responsible for the speed of movement of goods and passengers at the site of one of the 16 Railways. It is clear that the abstract players in the first case is the end-to-end business unit “Infrastructure” of the Corporation, in the second-the RCC (regional corporate control center), which is the “long arm of the Center” and is responsible for coordinating all participants in the transportation process within the boundaries of a particular landfill [23].

Depending on the state of the track and track facilities, the Rails plans “windows” – the time when the movement of trains on the stage, separate tracks of the stage or through the station stops for the production of repair, construction or installation works. These activities increase the time of movement of goods and passengers within the boundaries of the landfill and contradict the objectives of the player Carrier.

An effective compromise between structural players is impossible: priority is given to repairmen (player Rails), because in the pre-reform years the tracks were not repaired properly and the speed of movement on them for safety reasons, especially heavy trains, is forced to decrease. If it is a question of high-speed highways when speeds of modern passenger trains make 400 km/h and above, attempts to organize such movement on the railway lines operating today in General are hopeless: in the plan and in a profile, and also on requirements to the permanent way and designs of crossings domestic Railways for these purposes are unsuitable.

Therefore, no organizational solutions (such as multidimensional and “mosaic” hierarchically arranged traffic management systems), if the “rails” are underinvested, do not solve the problems of increasing the speed to the level of world standards.

Now let us consider the problem situation that arises when trying to assess the social effectiveness of the Reform at the macro level. Multiplicative effects manifested at this level are considered in world practice as indirect socio-economic effects, and the corresponding calculations are treated as a complementary analysis in the methodology of cost-benefit analysis using a particular macroeconomic model [12]. As for institutional projects, especially such large-scale ones as the Reform we are interested in, quantitative methods of assessing its social effectiveness are of limited use due to the weakly structured nature of the problem. Basically, heuristic approaches based on expert technologies and methods of applied system analysis are used in the procedures of structuring the problem and quantification of the system of public goals.

## 4 Recommendations

Below, to justify the proposed direction of further development of the reform, we refer to our work [6]. Where this approach is described and conclusions and recommendations are formulated. However, a permanent increase in the pace of changes in the external environment of the institutional Reform project requires a systematic adjustment of past recommendations, bearing in mind, however, the phenomenon of path dependence (rut effect), when there is a dependence of future development on previously selected standards or rules. This fact is taken into account in the final plot of this article, where our previous recommendations are updated.

So, the options that served as the basis for the recommendations, now called “old”. They were formed in the second half of 2015 by our group of non-governmental experts, when after the landmark resignation of the former President of JSC “Russian Railways” V.I. Yakunin, the Corporation was in the so-called institutional trap. In addition to Russian experts, the group also included foreign experts. Examination took place in one round, judgments of experts were revealed by a method of personal interview, results were fixed in the questionnaire. The following variants of Reform development were analyzed and evaluated.

I. The Current model of public Railways management should be maintained by prohibiting further experimentation.

II. The current model of management of public Railways by type of activity should be preserved, but the locomotive fleet should be privatized.

III. To return to the territorial-functional model of the Russian Federation Ministry of Railways, nationalizing all privatized, i.e. implementing counter-reform.

IV. To split the current Russian Railways into three parts: in European Russia-two competing corporations without the status of a natural monopolist; in Asian Russia-a state-owned enterprise, arranged on the model of the former MPS of the Russian Federation.

V. To Liquidate the Ministry of transport, on the basis of JSC Russian Railways to create a new MPS (Ministry of transport) of the Russian Federation, regulating the activities of all modes of transport in Russia and further in terms of Railways-according to option III or IV.

The preference of options was evaluated by experts in three scenarios-contrasts of the external environment of the Reform project.

1. Russia is a Federal state with a dominant role of the Center and socially-oriented state regulation of the competitive economy.

2. Russia is a Federal state with a coordinating and Advisory role of the Center and state regulation of the market, focused on the interests of large capital.

3. Russia is a unitary state with a rigid vertical of power, provincial administration and state capitalism.

To identify the group judgment on the preference of one or the other of the five options considered, questionnaires were processed and an evaluation matrix of options was formed using a system of computer products developed in the Institute of Economics and Industrial Engineering, Siberian Branch of the Russian Academy of Sciences and the Siberian State Transport University [14]. Under the assumption that the probability of actualization of the scenarios-contrasts described in the questionnaire can not be estimated either on the basis of objective statistics or on the basis of reliable expert assessments, i.e., there is a fundamental uncertainty, the preference of options was determined by the appropriate criteria of decision theory.

It turned out that the most preferred by the Wald criterion (the greatest caution) is option I. While according to the criteria of Savage, Maximax, Hurwitz (at  $\alpha=0.66$ ) the most preferred was option III.

Commenting on this result (see [6]), we noted that the group opinion of experts reflects, first, the understanding of the fact that the reform of railway transport in Russia, carried out for many years on liberal patterns, has reached an impasse. Recommended:

\* to stop and critically comprehend the accumulated experience of reforming Railways in Russia and abroad,

\* to develop a new approach that is adequate to the political and economic situation in which the country is today.

It seems that the first recommendation coincided with the government corrections of the Reform: the composition of the former top management of JSC "Russian Railways" has been significantly updated, its key figures have received the status of advisers regarding the "fresh" generation of railway officials. That is, having done everything they could in terms of reforming the railway transport of Russia, the authors of the Concept of 2008 are now concentrating on the long term in the Russian and global scales, specifically, on the problems of rail transport based on the use of magnetic levitation effects in a vacuum [21]. Officials of the RF Ministry of economic development do not return to their proposals on the organizational separation of "Traction" from JSC "Russian Railways".

With regard to the second recommendation, there is no noticeable progress in this direction and our proposals are as follows. If we return to the initial plot of the article, which listed the objectives of the Reform, then in their list, the installation on the development of

competition in the field of transport is called a priority. Unfortunately, installation proved to be declarative, because in order to enable competition in the rail market should have split the monopoly JSC “Russian Railways”, contrary, as follows from the concept of 2008, the interests of its leadership, and other coalitions of interests.

The only thing that has been done is a partial vertical separation of transportation and infrastructure activities according to the European model. Note, contrary to the studies and recommendations of the RF Institute of Natural Monopolies Research (IPEM) which pointed (as a consequence) to the weak competition on the Railways of the European Union and the negative consequences of such a decision for Russia. At the same time, it was emphasized that strong competition in the railway market exists only in the United States, where transportation and regional fragments of track infrastructure are vertically integrated as part of private railway corporations–freight carriers competing for customers [15].

Taking into account the above and considering the peculiarities of railway activity in Russia, let us turn to options IV and V to continue the Reform (see questions on the form), which, according to the collective opinion of experts, were less preferable when compared with options I and III. In our opinion, the models of the Russian statehood, which acted as scenarios-contrasts of the development of the external environment and the development of the Reform, over the past years (2014-2018) under the influence of changes in the world external environment strongly “drifted” towards scenario 3. But it was in this scenario, as additional analysis of the questionnaire array showed, that options IV and V were rated as the most preferred.

We detail these options from the standpoint of the current moment, because if competition “on the rails” as a driver of forcing a natural monopolist to “work” for the public interest did not arise at the previous stages of the institutional project, then relevant methods of state regulation should be sought for further promotion of the Reform. As theory teaches and practice shows, a compromise option is productive, when competition “from below” is supplemented by regulation “from above”, and the coordinates of the effective point of compromise depend on the specifics of the object and subject of regulation. In our case, again in terms of game theory, a compromise between the coalition’s actions (“Russian Railways” – JSC and the coalition of interests (customers – cargo owners) seen in a horizontal splitting of the Corporation, assigned to a natural monopoly without adequate, as shown in [16] and [17-18] reason. The essence of the structural compromise, in our opinion, is as follows.

The Federal railway network is divided in the Urals into European and Asian parts. The subject of management of the Asian part, where, in fact, instead of the railway network there is a tree with a trunk of the Trans-Siberian railway and branches from it-railway branches-capillaries-is appointed by the state enterprise inheriting the functions of JSC “Russian Railways” on the so-called “Eastern polygon”. Let’s call the resulting “new model” Russian Railways-East. Its monopoly on the country’s unmeasured territories from the Urals to the coasts of the Arctic and Pacific oceans is economically natural: the Trans-Siberian railway from Chelyabinsk to Vladivostok does not have and in the near future the appearance of domestic competitors is not visible [19]. And if so-the Holy duty of the state to operate such an infrastructure system and to finance its development through the creation of latitudinal and meridional Railways. Where to get money for such a program of state regulation aimed at strengthening trade and economic ties with the Asia-Pacific countries, and should decide on behalf of the state Russian Railways-East. To facilitate the new Corporation, the strategic objective, formulated in the concept of 2008 (to participate in the preparation and development of major infrastructure projects, including in cross-border cooperation projects with countries in the Asia-Pacific region), corporate centre management would be deployed, for example, in Krasnoyarsk, i.e. zoom in to the control object.

The urgency of such an organizational and economic solution has intensified in recent years, especially after the West imposed sanctions against Russia and intensified US military



preparations in the Arctic and the far East. Situationally, all large-scale railway projects implemented and proposed for implementation in the territories of Siberia and the Far East in this context become dual - use projects-not only economic, but also military-strategic. The proposed structural state regulation of railway transport takes into account this fact, ensuring sustainable development of the North-Eastern territories of Russia. having resource and ecological-assimilation potentials of planetary significance.

As for the European part of the Russian railway network, the model of its management may be structurally close to the European models. The density of the network from its Western borders to the Urals inclusive rather high and even with the congenital “defect of radial” can serve as a basis for development of competition of different types (e.g., see) [13], as industry (inside of railways) and interspecific (with rail, water and air transport). Whether this will require vertical or horizontal splitting of the “truncated” after the creation of Russian Railways-East, JSC “Russian Railways”, or the Corporation will retain the status of a natural monopolist at the European landfill, should be decided within the framework of a research project under the auspices of the Russian Academy of Science, and the implementation of the selected option should be entrusted to a specially created intersectoral and interdisciplinary management company, directly subordinate to the government and financed from the budget by a separate line. Because the experience of railway reform in Russia by method of “self-reforming”, when the subject of reform, being a Corporation, “on one’s own” positioning itself as a mixed holding company, showed the inability of such exotic structures to ensure the orientation of large-scale institutional project for public interests of the country (see the Concept of 2008 and the Reform results, illustrated by figures of Tables 1, 2, 3 and 4).

## 5 Conclusion

More than a hundred years ago, a problematic situation-an analogue of today’s already existed and that’s what Sergey. Yu. Witte wrote about it “the introduction of state-owned exploitation, instead of private exploitation, on the network of Russian Railways will hardly be useful at the present time, but we allow exceptions. As long as these exceptions can be caused not by economic reasons, but by purely political ones”. And further “there will be financial and economic sacrifices which, in our opinion, will be a consequence of establishment of state exploitation”.

Of course, the analogy in making such a complex institutional decision is a very imperfect tool and the situations do not coincide “one by one” [22]. But after all, economic and related Sciences for a hundred years after the recommendation of the outstanding Russian statesman (who knew the problems of the Railways of Russia firsthand), have accumulated a solid stock of knowledge. Its pragmatic value in the sense of finding an acceptable compromise between “economic sacrifices” and “political benefits” would be logical to identify adhoc, i.e. in this case.

And the last. When this article was being prepared for publication, the “long-Term development program of JSC “Russian Railways” until 2025” (hereinafter the Program 2025) was adopted. This document first of all formulates the task of obtaining financial resources necessary for the execution of the state’s orders, and this is seen as a way to improve the financial and economic efficiency of the industry. However, a further explanation in the text of the 2025 Program, stating that it is based on existing regulations with the preservation of the status quo in the freight and passenger rail transport market until 2025, actually puts an end to the implementation of the first and all its other goals and objectives declared in the 2025 Program. Because it means, in our opinion, that there is a long-term mechanism of underfunding by the state of the activities of Russian Railways. And in these conditions, the

results of the implementation of the 2025 Program are likely to be negative, just as happened with the Reform.

If we analyze the system of restrictions, fixed in the form of legal and by-laws, carefully written in the 2025 Program and forming its institutional environment, the following becomes obvious. Restrictions form such a narrow corridor for Russian Railways, in comparison with which the freedom to choose effective solutions, which existed in the USSR Railways Ministry, and then in the RF Railways Ministry, seems to be a model of a scientifically sound approach based on “initiative from below”.

And until the lack of freedom to choose effective solutions “from below” is eliminated, more precisely, balanced with regulations “from above”, Russian Railways will be in an institutional trap and transport goods at an average speed of 16.1 km / h, which is not too different from Cycling, and passengers-at a speed of 57 km/h, which is almost an order of magnitude lower than the speed of passenger transportation by high-speed rail in many countries of the world.

## References

1. Byulleten transportnoy informatsii **4**, 4 (2000)
2. *Postanovleniye Pravitelstva RF ot 20.12.2004 N 811.*
3. *Postanovleniye Pravitelstva RF ot ot 22.07.2009 N 600.*
4. E. Butorina, A. Mihajlov, A. Barinov, Delovoj ezhenedel'nik «Profil'». 13.11. (2015) DOI: <http://www.profile.ru/economics/item/100914-vagonchik-nikak-ne-tronetsya>
5. S. Eliseev, Vagonnye spory. Delovoj ezhenedel'nik «Profil'». 16.03. (2016) DOI: <http://www.profile.ru/economics/item/104884-vagonnye-spory>
6. E.B. Kibalov, A.A. Kin, *Reforma zheleznodorozhnogo transporta: kriticheskij analiz i problema ocenki jeffektivnosti* (Izd-vo IJeOPP SO RAN., Novosibirsk, 2017)
7. A. Guriyev, Analiticheskaya zapiska. Kontseptsiya sistemy upravleniya kompanii kholdingovogo tipa, obrazuyemoy v rezul'tate reformirovaniya OAO “RZhD” (2008)
8. <https://jd-doc.ru/2007/january-2007/12213-rasporyazhenie-oao-rzhd-ot-23-01-2007-n-103r>
9. Russian Railways-1 DOI: [http://www.railsovet.ru/upload/iblock/379/Обзор%20работы%20груз%20железнодорожного%20транспорта%206%20мес%202022%20г%20\(29%2008%202022на%20сайт\).pdf?ysclid=lae17pобq8587549501](http://www.railsovet.ru/upload/iblock/379/Обзор%20работы%20груз%20железнодорожного%20транспорта%206%20мес%202022%20г%20(29%2008%202022на%20сайт).pdf?ysclid=lae17pобq8587549501)
10. Russian Railways-2 DOI: <https://company.rzd.ru/ru/9394/page/103290?id=17206>
11. A.K. Dmitruk, A.E. Kraskovskij, Transport Rossijskoj Federacii [Transport RF] **4**, 31–37 (2014)
12. V.V. Kuleshov, N.I. Suslov, Korporativnaja jevoljucija. Pul't upravlenija **2** (2014) DOI: <http://www.pult.gudok.ru/archive/detail.php? ID=899768>
13. Ju.Z. Saakyan, et al., *Mirovoj opyt reformirovaniya zheleznyh dorog* (IPEM Publ., M., 2008)
14. E.B. Kibalov, A.B. Khutoretskiy, Region: jekonomika i sociologija [Region: Economics&Sociology] **1**, 3–19 (2015)
15. <http://media.rsp.ru/document/1/5/5/5541c8c174bb6ea99420b2c980c3831a.pdf>
16. B.M. Lapidus, *Stenogramma publichnoj lekcii «Strategija razvitija OAO "RZhD" do 2015 goda», pročitannoj starshim vice-prezidentom OAO «RZhD» B.M. Lapidusom*

- dlja studentov zheleznodorozhnyh vuzov* (MIIT, Moskva, 2006) DOI: <http://1.radoneg.z8.ru/777/394217>
17. S.A. Bykadorov, E.B. Kibalov, Estestven li monopolizm OAO RZhD JeKO. [ECO] **7**, 91–106 (2013) DOI: [http://ecotrends.ru/images/Journals/2010–2019/2013/N07/3\\_Articles/091Kibalov2013\\_07.pdf](http://ecotrends.ru/images/Journals/2010–2019/2013/N07/3_Articles/091Kibalov2013_07.pdf)
  18. N.I. Belousova, E.M. Vasil'eva, *Voprosy teorii gosudarstvennogo regulirovaniya i identifikacii estestvennyh monopolij* (Kom Kniga Publ., M., 2006)
  19. S.A. Bykadorov, Scientific Journal of Maritime Research **31**, 38-44 (2017)
  20. N.P. Tereshina, et al., *Jekonomika zheleznodorozhnogo transporta: ucheb. dlja vuzov zh.-d. transp* (Ucheb.-metod. centr po obrazovaniju na zh.-d. transp., M., 2011)
  21. B.M. Lapidus, Bjul'teten' OUS OAO «RZhD **4**, 1–17 (2016) DOI: [http://www.vniizht.ru/files/bulletin/Bulleten\\_4\\_2016.pdf](http://www.vniizht.ru/files/bulletin/Bulleten_4_2016.pdf)
  22. V.V. Petrakov, Transport Business in Russia **1**, 52–56 (2015) DOI: <https://cyberleninka.ru/article/n/sravnitelnyy-analiz-evropeyskogo-i-severoamerikanskogo-variantov-dlya-tretiego-etapa-reformirovaniya-rossijskogo-zheleznodorozhnogo>
  23. V.I. Yakunin, Korporativnaja jevoljucija. Pul't upravlenija **2** (2011) DOI: <http://www.pult.gudok.ru/archive/detail.php?ID=899768>
  24. S. Suyunbayev, U. Khusenov, S. Khudayberganov, et al., E3S Web of Conferences **365**, 05011 (2023) DOI: <https://doi.org/10.1051/e3sconf/202336505011>
  25. A. Yusupov, S. Boltaev, S. Khudayberganov, M. Toxtakxodjaeva, E3S Web of Conferences **365**, 05010 (2023) DOI: <https://doi.org/10.1051/e3sconf/202336505010>
  26. S. Jumayev, S. Khudayberganov, O. Achilov, M. Allamuratova, E3S Web of Conferences **264**, 05022 (2021) DOI: [10.1051/e3sconf/202126405022](https://doi.org/10.1051/e3sconf/202126405022)
  27. N. Aripov, S. Suyunbaev, F. Azizov, A. Bashirova, E3S Web of Conferences **264**, 05048 (2021) DOI: <https://doi.org/10.1051/e3sconf/202126405048>
  28. N. Aripov, S. Suyunbayev, M. Khadjimukhametova, S. Jumayev, AIP Conference Proceedings **2612(1)**, 060022 (2023) DOI: <https://doi.org/10.1063/5.0114454>
  29. S. Jumayev, S. Khudayberganov, A. Bashirova, M. Akhmedova, E3S Web of Conferences **371**, 06011 (2023) DOI: <https://doi.org/10.1051/e3sconf/202337106011>