The theoretical evaluation of infrastructure and transportation services separation feasibility in frame of third stage of structural reform of railway transport

December 2009
Analysis of the Regulatory and Legal Framework in the Field of the Operation of a Separate Infrastructure Company and Several Carriers

- The laws provide the operation of several infrastructure owners and several carriers

- The regulatory and legal framework contains a list of infrastructure facilities, but this list is open

- There are no criteria in the laws toof property designation to properties of the infrastructure owner or the carrier's property

- The regulatory and legal framework does not contain obstacles for the origin of freight carriers, including the network-wide ones

- There is no regulation for the activity and interaction between the infrastructure owners and the carriers

- The regulatory and legal framework has no concept and list of "carrier services" which are necessary for the operation of separate infrastructure owners and carriers

- The regulatory and legal framework does not establish any payment for the use of infrastructure services and any possible mechanisms to establish this payment
Feasibility of structural transformations in the railway transport is considered in 2 alternatives:

1. Separation of the infrastructure and the transportation operations.

2. Formation of several vertically integrated companies owning the infrastructure and performing the transportation activity

To evaluate positive and negative consequences of the structural transformations, the Institute of Natural Monopolies Research developed:

- an integrated freight transportation process model which reflects the performance of transportation functions and process operations by infrastructure owners, carriers and separate independent companies

- a regulatory diagram of the industry which reflects main directions of the state regulation for railway transport operators

- an expenditure calculation model for infrastructure owners, carriers and other transportation process participants

Based on the analysis of the positive and negative consequences of the structural transformations as well as the assessment of the risks occurring during structural transformations, the feasibility of transportation and infrastructure operations separation will be evaluated
Distribution of Technological Operations among the Infrastructure Owners and the Carriers

For the theoretical evaluation of the feasibility of infrastructure and transportation services separation within the framework of the third stage of the railway industry structural reform, it is necessary to have the clear-eyed understanding which functions, after separating the existing freight transportation process, will be performed by the carrier, and which ones will be performed by the infrastructure owner.

For this purpose, it is necessary to split the freight transportation process into separate technological operations and to refer each of them to a transportation or infrastructure company.

The assignment of functions and technological operations between the infrastructure and transportation companies is performed on the basis of the following principles:

- maintenance of the safety of the cargo and passenger transportation, coordination and operational continuity of the rail activity in the changed conditions

- support of the maximum accomplishment of the purposes declared by the Railway Structural Reform Program, support of the development of competition among carriers, minimisation of barriers to market entry

- Maximisation of conformity of the operation of the infrastructure owners and the carriers with the current regulatory and legal framework, necessity of the least number of changes in regulatory legal acts
Distribution of the Functions and Process Operations among the Infrastructure Owner, the Carrier and Other Companies

<table>
<thead>
<tr>
<th>Infrastructure Owner</th>
<th>Carrier</th>
<th>Separate Independent Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>• maintenance and repair of the common-use transport infrastructure;</td>
<td>• organisation of the issue and removal of cars between the infrastructure and the non-common-use tracks or the common areas;</td>
<td>• performance of shunting operations at railway stations during transportation (which are not connected with the rehandling of trains at train stations);</td>
</tr>
<tr>
<td>• provision of the right to use common-use infrastructure facilities to the carrier;</td>
<td>• organisation of the timely maintenance and repair of the traction and non-traction rolling stock maintained;</td>
<td>• preparation of railway cars and containers for loading;</td>
</tr>
<tr>
<td>• provision of access to common-use tracks for the carrier's rolling stock;</td>
<td>• inspection of technical serviceability of cars and containers;</td>
<td>• loading, unloading and storage of cargoes in common areas;</td>
</tr>
<tr>
<td>• establishment and approval of routes for the carrier's train;</td>
<td>• commercial validation tests of railway cars and containers at all stages of the transportation process;</td>
<td>• weighing of railway cars, cargoes in the interest of the carrier or the infrastructure owner;</td>
</tr>
<tr>
<td>• coordination of the technical and technological capabilities to perform transportation with other infrastructure owners;</td>
<td>• weighting of railway cars, cargoes when accepting them for transportation (to control the axle load and the movement safety);</td>
<td>• locomotive servicing;</td>
</tr>
<tr>
<td>• organisation of movement of railway rolling stock through common-use tracks;</td>
<td>• maintenance of the carrier's railway rolling stock in transit (repairs with uncoupling and without uncoupling from the train);</td>
<td>• maintenance and repair of locomotives;</td>
</tr>
<tr>
<td>• performance of sorting operations at railway stations during the transportation process; making up of trains;</td>
<td>• provision of information on the movement or location of the carrier's rolling stock;</td>
<td>• other services under separate agreements.</td>
</tr>
<tr>
<td>• control of the technical condition of the carrier's railway rolling stock (technical inspection) during the admission to the infrastructure and during the transportation;</td>
<td>• power supply of the carrier's traction rolling stock at the electrified sites of the infrastructure;</td>
<td>• check weighing of loaded railway cars;</td>
</tr>
<tr>
<td>• weighing of railway cars, cargoes when accepting them for transportation (to control the axle load and the movement safety);</td>
<td>• check weighing of loaded railway cars;</td>
<td>• provision of the capability to find the carrier's empty railway cars at common-use tracks, which are intended for rolling stock layover;</td>
</tr>
<tr>
<td>• maintenance of the carrier's railway rolling stock in transit (repairs with uncoupling and without uncoupling from the train);</td>
<td>• provision of the capability to find the carrier's empty railway cars at common-use tracks, which are intended for rolling stock layover;</td>
<td>• other services under separate agreements.</td>
</tr>
<tr>
<td>• provision of information on the movement or location of the carrier's rolling stock;</td>
<td>• other services under separate agreements.</td>
<td></td>
</tr>
</tbody>
</table>
Input and Output Parameters of the Financial and Economic Model for Freight Transportation Cost Estimation in case of the Complete Separation of Infrastructure and Transportation Operations

**Input Parameters:**

- Profitability of the infrastructure company
- Profitability of freight carriers (the national one and the route local ones)
- Profitability of the national passenger carrier
- Profitability of suburban carriers
- Profitability of the services connected with the lease of the infrastructure real estate to carriers
- Profitability of the services of the service companies performing the maintenance, routine repair and servicing of locomotives for carriers, the infrastructure company and other companies
- Profitability of the services connected with the depot repair of railway cars, the preparation of railway cars for transportation
- Profitability of the companies engaged in major repair of freight and passenger railway cars, infrastructure facilities
- Profitability of the companies engaged in major repair of traction rolling stock
- Industrial job growth at the local level
- Management job growth at all levels
- Empty car mileage
- Car turnaround
- Decrease in expenses due to the origin of competition

**Output Parameters:**

- Average increase in expenses of the infrastructure company
- Average increase in freight transportation costs
- Change of the expenses connected with changes in the central supply principles
- Change of the expenses connected with changes in the management and industrial personnel
- Change of the expenses connected with increase in the number of entities in the technological transportation process
- Change of the expenses connected with the origin of competition in potentially competitive sectors
- Change of the transportation costs connected with effectiveness of the use of freight cars (change of empty car mileage and car turnaround)

**Data Sources:**

- 6-zhel form of the year 2007
- Order No. 124 of Ministry of Transport dated 17.08.07 (about separate record-keeping)
- Instructions on completion of the 6-zhel and 7-u forms
- Statistical reporting forms of OJSC Russian Railways: TsO-1, TsO-4, TsO-5, TKhO-2, TsO-31, AGO-2, AGO-4, AGO-6 Forms, Statistical books about rail activity for 2007
Evaluation of Influence of the Competition Development among the Carriers on the Infrastructure and Locomotive cost Component Value

To evaluate the cost reduction potential in the industry in case of the competition development on route, it is necessary to determine the sectors where the competition of carriers is possible. When creating conditions for the competition development, with taking into account the current transportation technology, the origin of the carriers performing the route transportation within 500 km is the most probable.

Selection of locomotives for local route carriers

Mainline electric locomotive

- Electric freight locomotives with comparable power are substantially cheaper than diesel locomotives
- Maintenance and repair of electric locomotives are substantially cheaper than the ones of diesel locomotives
- Electric locomotives are much more effective than diesel locomotives in terms of specific reference fuel consumption

Mainline diesel locomotive

- The extended list of accessible process operations, including the issue and removal of cars from non-common-use tracks, train composition
- The universality - possibility to work both at electrified and non-electrified sites, which removes technological restrictions for the customer base development
- Possibility to independently buy fuel from suppliers, with increasing the cost reduction potential

If private carriers enter the market, it's most likely that they will become owners of mainline diesel locomotives, and thus the competition development will make it possible to reduce costs in the following fields:

- **Operation of diesel locomotives in freight service** (≈3.9% share of the infrastructure and locomotive cost component)
- **Maintenance and minor repair of diesel locomotives to be used in freight service** (≈1.3% share of the infrastructure and locomotive cost component)
- **Major repair of diesel locomotives used in freight service** (≈1% share of the infrastructure and locomotive cost component)

To evaluate the carriers' competition potential, the analysis was performed only in the sectors in which the cost management is possible. In the natural monopoly segments no cost reduction is expected.
Remuneration of labour and social payments:
Increase in costs due to the lease of locomotive crews from the national carrier or increase in labour costs of crews if the private carrier wishes to transfer them to its staff (up to +10%)
Cost reduction due to the optimisation of the number of crews (to -10%)

Materials and fuel:
Price reduction due to more flexible work with suppliers (to -15%)
Increase in costs due to the growth of the transport component, the costs to organize the procurement process and for the loss of the effect of price discounts (+10% in total)

General and general business expenses:
Influence of competition in this segment does not exceed 50% of the total value of costs, in case of the limited decrease potential (to -15%)

Competition development at the site between national carrier and the route local carriers will lead to the general decrease in the infrastructure and locomotive cost component value no more than by 0.017%

5.5% Decrease in the expenses connected with the local route transportation within 500 km
Decrease to 5%
Decrease to 7.5%
Influence of the Competition Development in the Maintenance and Repair of Diesel Locomotives on the Infrastructure and Locomotive Cost Component

**Structure of the infrastructure and locomotive cost component**

- **Other expenses**: 99%
- **Maintenance and routine repair cost structure depending on the freight shipment type and distance**: 1%
  - Costs connected with the carload route transportation to the distance of more than 500 km: 92%
  - Maintenance and routine repair costs for diesel locomotives, which are connected with the local route transportation within 500 km (TsO-31, 6-zhel): 8%

**Remuneration of labour and social payments:**
Cost reduction due to optimisation of the industrial personnel at the companies engaged in the maintenance service (maintenance and routine repair) of diesel locomotives (to -15%)

**Materials, fuel, other material costs:**
The narrow range of choice of the suppliers of materials and equipment will not allow the owners of depots and locomotive maintenance depots to substantially decrease, even at the expense of more flexible operation, their purchase value (to -10 %)
Increase in costs due to the growth of the transport component, the costs to organize the procurement process and for the loss of the effect of price discounts (+10% in total)

**General and general business expenses:**
Influence of the competition does not exceed 48% of the total costs, with the limited decrease potential (to -15%)

**6.6% Decrease in the maintenance and routine repair expenses connected with the local route transportation within 500 km**

**Competition development in the maintenance and minor repair of diesel locomotives will lead to the general decrease of the infrastructure and locomotive cost component no more than by 0.007%**
Influence of the Competition Development in Major Repairs of Diesel Locomotives on the Infrastructure and Locomotive Cost Component

Structure of the infrastructure and locomotive cost component

The maintenance and routine repair cost structure depending on the freight shipment type and distance

Remuneration of labour and social payments:
Optimisation of the industrial personnel at the plants engaged in repair of diesel locomotives (to -15%), due to a surplus of production capacities

Materials, fuel, other material costs:
The narrow range of choice of the suppliers will not allow the plants to decrease the purchase value of materials and equipment

General and general business expenses:
Influence of the competition does not exceed 50% of the total costs, with the limited decrease potential (to -15%)

Competition development in major repairs of diesel locomotives will lead to the general decrease of the infrastructure and locomotive cost component no more than by 0.002%
Combined Effect from Competition Development between the Carriers in the Infrastructure and Locomotive Cost Component

Effect from the origin of competition among carriers at sites:

1. It will allow to reduce the infrastructure and locomotive cost component no more than by 0.027% 
2. It will allow to reduce the carriers' expenses connected with the operation of diesel locomotives in freight service by 207.2 million rubles

Effect from the competition development in the maintenance and routine repair of diesel locomotives:

1. It will allow to reduce the infrastructure and locomotive cost component no more than by 0.007%
2. It will allow to reduce the carriers' expenses connected with the maintenance and routine repair of diesel locomotives by 53.7 million rubles

Effect from the competition development in major repairs of diesel locomotives:

1. It will allow to reduce the infrastructure and locomotive cost component no more than by 0.002%
2. It will allow to reduce the carriers' expenses connected with the overall repair of diesel locomotives by 15.3 million rubles

Combined effect from the competition developments in potentially competitive sectors:

1. It will decrease the infrastructure and locomotive cost component no more than by 0.036%
2. It will decrease all carriers’ expenses by 276.2 million rubles

Conclusion:

1. Decrease in the fright costs during competition development on route and in the maintenance of diesel locomotives will be extremely negligible (no more than 0.036%)
2. Competition development will improve the quality of maintenance of diesel locomotives and will increase the customer centricity of the carriers. Part of consignors will be agreed to pay for the service quality
Evaluation of Influence of the Competition Development in the Repair and Preparation of Railway Cars for Transportation on the Carload Cost Component Value

It is supposed that the cost reduction potential in the industry directly influencing the operators' expenses still remained. A large part of this potential is concentrated in the potentially competitive sector which is still within Russian Railways JSC.

The greatest possible decrease in the car cost component is evaluated in case of the competition development in the following fields:

1. **Preparation of railway cars for transportation**
   - Washing and steaming of railway cars at washing and steaming stations
   - Disinfection of railway cars in disinfecting washing areas and at disinfecting washing stations
   - Routine repair of railway cars when preparing them for loading
   - ≈2.4% of the car cost component in the new conditions

2. **Repair of wheel pairs**
   - Repair of wheel pairs with replacing their parts at train and wheel shops belonging OJSC Russian Railway
   - Inspection of car boxes at train and wheel shops belonging to OJSC Russian Railway
   - ≈50% of the car cost component in the new conditions

3. **Minor repairs**
   - Repair of wheel pairs at car-repair depots of Russian Railways JSC
   - Routine repairs of freight cars at repair depots of Russian Railways JSC
   - Medium repair of freight cars at repair depots of Russian Railways JSC
   - ≈12% of the car cost component in the new conditions

4. **Major repairs of railway cars**
   - Major repairs of freight cars at plants belonging to Russian Railways JSC
   - ≈12% of the car cost component in the new conditions
Influence of the Effects from the Competition Development in the Sectors of Depot, Major Repairs of Railway Cars and their Preparation for Transportation on the Carload Cost Component Value

**Cost reduction potential during the competition development in the freight car repair sector**

<table>
<thead>
<tr>
<th>Expenses for the depot and major repairs of freight cars and the repairs of wheel pairs (6-zhel for 2007)</th>
<th>62%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other costs in the car component</td>
<td>38%</td>
</tr>
</tbody>
</table>

**Structure of expenses of the operators of railway cars received from the inventory rolling stock in the past**

- General business expenses: Influence of the competition does not exceed 50% of the total costs, with the limited decrease potential (to -20%).
  - Decrease in 1.53%

- Materials, fuel, other material costs: The loss of price discounts in case of large-scale procurement, the narrow range of choice of the suppliers, the growth of the transport component level the positive effects from more flexible work with the suppliers.
  - 0 effect

- Labour and social costs: Cost reduction due to optimisation of the industrial personnel because of a surplus of production capacities of car-repair plants and depots (-15%).
  - Decrease in 1.55%

**Decrease potential in the car cost component in case of the competition development in the sector of preparation of railway cars for transportation**

<table>
<thead>
<tr>
<th>Expenses for the preparation of railway cars for transportation (6-zhel for 2007)</th>
<th>98%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other costs in the car component</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Structure of expenses of the operators of railway cars received from the inventory rolling stock in the past**

- Materials, fuel, other material costs: The loss of price discounts in case of large-scale procurement, the narrow range of choice of the suppliers, the growth of the transport component level the positive effects from more flexible work with the suppliers.
  - 0 effect

- Labour and social costs: Cost reduction due to optimisation of the industrial personnel at companies engaged in the preparation of railway cars for transportation (-10%).
  - Decrease in 8.3%
Influence of the Competition Development among the Operators in Various Types of Repairs of Railway Cars and their Preparation for Transportation on the Car Cost Component Value

Effect from the competition development among the owners of freight car repair depots and plants:
1. It will allow to reduce the car cost component no more than by 1.92%
2. It will allow to reduce the operators’ expenses connected with the depot and major repairs of railway cars by 1342.5 million rubles

Effect from the competition development in the preparation of railway cars for transportation:
1. It will allow to reduce the car cost component no more than by 0.39%
2. It will allow to reduce the operators’ expenses by 272.7 million rubles

Competition development in the sector of the routine and major container repair:
1. It will allow to reduce the car cost component no more than by 2.317%
2. It will reduce of the operators’ expenses in the industry by 1610.2 million rubles

During the competition development in the preparation of railway cars for transportation, the depot and major repairs of freight cars, the maximum cost reduction will be no more than 2.3%, which will allow the operators to save 1610 million rubles.

In the natural monopoly segments where there will be no competition, the companies providing services to the operators have no motivation to reduce the costs because their profit will directly depend on the level of expenses.
Influence of the Growth of Empty Fright Car Mileage and Freight Car Turnaround on the Infrastructure and Locomotive Cost Component and the Car Cost Component

**Reasons of the growth of empty run car mileage**

- When reducing or transferring the inventory rolling stock into the ownership of several operators, each of them will enter into its transportation contracts, and the clauses specifying the loading will not coincide with the cargo origination points which are the nearest ones from the off-loading points.
- The operators of the rolling stock will be mainly interested not in reducing the empty run miles, but in increasing the income from transportation as far as possible.
- Income from transportation of such cargoes will cover possible additional costs connected with excess mileage of freight cars.

**Reasons of the growth of empty run car mileage**

- Excessive inactivity of railway cars of the private operators at off-loading stations when expecting high-yield cargoes, as opposed to the railway cars of the inventory rolling stock which are immediately sent to an off-loading station which is the nearest one to the cargo origination point.
- The private operator seeks to reduce the empty run, as a rule to the detriment of the car turnaround.
- It is more beneficial to pay for car demurrage than for empty run.
To develop the competition among the carriers, it is necessary to refuse the average network tariffs in the locomotive component. In the network of Russian Railways JSC, the total traffic handling cost differs in times depending on the types of traction. In case of the separation of the infrastructure from the transportation and the refusal to use the average network principle, the dispersion in the cost value of the locomotive component among the sites will be times more.

The cost value of the freight traffic depending on the types of traction in the network of Russian Railways JSC (2007)

Refusal to use the average network tariffs in the locomotive traction will lead to a substantial growth of the traffic handling cost (especially with diesel locomotive traction) in a number of industrially advanced regions.
Taking into account the current structure and topology of the Russian railway network, the competition development among vertically integrated companies in parallel lines is impossible in the foreseeable future as there is only one shortest distance between two stations. Throughput capacity of the lines is various. Transportation with the use of alternative routes is not economically beneficial.

The Russian railway network can also be divided between vertically integrated companies on the basis of the geographical principle. In this case, the new created companies receive the whole railway infrastructure which is within the specified territory.

So, the railway system can be divided into some parts and create three Vertically Integrated Companies (VIC): two are in the European part of Russia (Northern VIC and Southern VIC) and one is in the Asian part of Russia (Eastern VIC).

In case of such an approach, the companies are formed around the current export-and-import cargo flows focused on the ports of the North-West and North, Far East and Azov-Black Sea regions. Accordingly, there are preconditions for the creation of competition among the VICs in connection with their geographical location.
Analysis of the Feasibility to Divide the Single Business Entity (Russian Railways JSC) into Several Vertically Integrated Companies (VICs) Competing among Themselves

Focused on the Kuzbass — Northwest flow, participates in forming and advancing the North — South flow in its service range. Competes with the Southern VIC when relocating the Centre — Volga Region — Ural Mountains flow, and probably competes for part of the Kuzbass — Centre flow.

Focused on the Kuzbass — Azov-Black Sea Traffic Centre and North — South flows, maintains the Centre — West flow, competes with the Northern VIC when relocating the Centre — Volga Region flows, and also probably for part of the Kuzbass — Centre flow.

Focused on the work with the Kuzbass — Far East Traffic Centre cargo flow, forms and sends the Kuzbass — Northwest and Kuzbass — Azov-Black Sea Traffic Centre flows to the Northern and Southern VICs.

Each VIC services customers located in its region of activity and performs the domestic and international freight transportation with the use of its infrastructure.
There will be a complete management reorganization at each of the companies, which will lead to the creation of separate administrative divisions at the VICs, the functions of which were earlier integrated in the management apparatus of the single business entity. In essence, three management apparatuses will be created instead of one at each of the VICs, they will only be smaller.

Change in the rail transportation control system

Now, the train dispatching is performed by the railways within their borders; the Transport Control Centre coordinates the train service of the railways. When dividing the single business entity into the Eastern, Northern and Southern VICs, it will require to redistribute the dispatching apparatus of the Transport Control Centre of the companies and to organize the train dispatching in newly organized Transport Control Centres of the companies.

Increase in the whole administrative and managerial staff in the industry in the VICs' management apparatuses and departments

As a result of the division of the single business entity into several VICs, the influence of the competition among the carriers on the traffic handling cost is limited.

Calculation of the freight cost growth showed that the total expenses in the industry will increase by RUB 105 billion in comparison with the expenses in 2007, or by 15.46%.

Origin of tariff changes

When passing through the borders of the VICs, there will be tariff changes connected with the consecutive use of two and more tariffs by each company separately. It will lead to an increase in the freight rate from the service range of one vertically integrated company to the service range of another in comparison with the existing system.

Growth of transaction costs

The cost growth is connected with an increase in the number of participants of freight transportation and the necessity to conclude transactions on market conditions instead of the solving of economic issues within the framework of one hierarchical system.
For evaluation of the expediency to separate the infrastructure from the transportation activity, some positive and negative consequences of this reform were revealed by expertise for the two alternative structural transformations:

- the separation of the transportation activity from the infrastructure by means of:

- formation of several vertically integrated competing companies owing the infrastructure and engaged in the transportation activity.

The revealed consequences of the separation are grouped in four integrated criteria:

1. *Level of competition among the carriers.*
2. *Change of the total transportation costs for freight transportation.*
4. *Level of manageability and interaction of the freight transportation entities.*

A score should be determined by expertise for each of the integrated criteria for evaluation of consequences. Within the framework of this method, the 20 score evaluation system is used: from $-10$ to $+10$. 

### Score Quality Evaluation Scale

<table>
<thead>
<tr>
<th>Score</th>
<th>Quality Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>$[-10; -5]$</td>
<td>unsatisfactory</td>
</tr>
<tr>
<td>$[-4; -2]$</td>
<td>negative</td>
</tr>
<tr>
<td>$[-1; +1]$</td>
<td>neutral</td>
</tr>
<tr>
<td>$[+2; +4]$</td>
<td>positive</td>
</tr>
<tr>
<td>$[+5; +10]$</td>
<td>excellent</td>
</tr>
</tbody>
</table>
One of the objectives of the railway transport reforms is to decrease the total transportation costs for the freight and passenger transportation.

1. **Total freight transportation costs**

<table>
<thead>
<tr>
<th>Description</th>
<th>Separation of the infrastructure and the transportation activity</th>
<th>Formation of several VICs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentially possible cost reduction for freight transportation, which is connected with the competition development</td>
<td>↓ RUB 1.9 billion</td>
<td></td>
</tr>
<tr>
<td>Total cost growth for freight transportation</td>
<td>↑ RUB 223 billion</td>
<td>↑ up to 104 billion</td>
</tr>
</tbody>
</table>

| Score expert evaluation | -10 | -8 |

The objective of the third stage of the reforms is to create an advanced competitive rail transportation market. Since the expediency will be evaluated at the third stage of the reforms, it is necessary to evaluate the degree of additional conditions which this reform creates for the development of the carriers’ market.

2. **Level of competition among the freight carriers**

<table>
<thead>
<tr>
<th>Description</th>
<th>Separation of the infrastructure and the transportation activity</th>
<th>Formation of several VICs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in the range of provided services, customer centricity and the offer of new transport products</td>
<td>Growth</td>
<td>Growth</td>
</tr>
<tr>
<td>Change in the number of local (up to ) and linear (over ) route carriers</td>
<td>Small growth</td>
<td>Limited growth</td>
</tr>
<tr>
<td>Number of universal (carload and route) carriers</td>
<td>It won’t be increased</td>
<td>It won’t be increased</td>
</tr>
</tbody>
</table>

| Score expert evaluation | +2 | +1 |
3. **Level of manageability and interaction of the freight transportation entities**

<table>
<thead>
<tr>
<th></th>
<th>Separation of the infrastructure and the transportation activity</th>
<th>Formation of several VICs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of manageability in separate entities</td>
<td>Increase</td>
<td>Increase</td>
</tr>
<tr>
<td>Level of coordination of interaction of transportation entities</td>
<td>Significant decrease</td>
<td>Significant decrease</td>
</tr>
<tr>
<td>Level of efficiency in decision making and information transfer to direct contractors</td>
<td>Significant decrease</td>
<td>Significant decrease</td>
</tr>
<tr>
<td>Level of coordination of the work planning by various freight transportation entities</td>
<td>Moderate decrease</td>
<td>Moderate decrease</td>
</tr>
<tr>
<td><strong>Score expert evaluation</strong></td>
<td><strong>-5</strong></td>
<td><strong>-5</strong></td>
</tr>
</tbody>
</table>

As a result of the transformations, **a greater number of the natural monopoly and temporarily monopoly markets** is formed, which are to be **regulated** to ensure **the non-discriminatory operational conditions** for the carriers.

4. **Volume and complexity of the government regulation**

<table>
<thead>
<tr>
<th></th>
<th>Separation of the infrastructure and the transportation activity</th>
<th>Formation of several VICs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of the regulator's awareness about the controlled entities' activity</td>
<td>Increase</td>
<td>Increase</td>
</tr>
<tr>
<td>Change in the number of the controlled entities</td>
<td>Considerable growth</td>
<td>Considerable growth</td>
</tr>
<tr>
<td>Change in complexity of the regulation</td>
<td>Substantial increase</td>
<td>Significant</td>
</tr>
<tr>
<td>Change in the requirements to the qualification of the regulator's employees</td>
<td>Increase</td>
<td>Increase</td>
</tr>
<tr>
<td>Change in the costs connected with the necessity in the government regulation</td>
<td>Growth</td>
<td>Growth</td>
</tr>
<tr>
<td><strong>Score expert evaluation</strong></td>
<td><strong>-5</strong></td>
<td><strong>-5</strong></td>
</tr>
</tbody>
</table>
Evaluation of Consequences of the Structural Transformations (by alternatives)

Separation of the infrastructure and the transportation activity

Formation of several vertically integrated companies

Current state of the industry

State of the industry when performing an alternative
Structural transformation risks

1. Lack of funding for the current maintenance and repair of the infrastructure
2. Growth of freight transportation expenses (growth of tariffs)
3. Insufficiency of funds for the government regulation
4. Decrease in effectiveness of the government regulation
5. Decrease in the coordination level among transportation entities and in the manageability of each of them
6. Decrease in the economic effectiveness of the rail activity
7. Decrease in the level of satisfaction of demand for the freight transportation by means of carload shipments
8. Decrease in the level of satisfaction of demand for the freight transportation by means of route shipments

Risk assessment

Risks are assessed by experts on the basis of two parameters:
- level of influence of risks on the industry
- risk probability

Risks are graphically represented in the coordinate plane the axes of which are the specified parameters

The general situation in the industry is evaluated by the risk concentration in various sectors of the coordinate plane
Performance Risk Assessment for Structural Transformations

Separation of the infrastructure and the transportation activity

- Risk probability for the majority of risks is high
- Risks have mean and high levels of influence on the industry

Consequences of the alternative — extremely negative

Formation of several vertically integrated companies

- Risks have no strongly pronounced concentration
- The risk probability and the level of risk influence on the industry are changed in a wide range

Consequences of the alternative — negative
Conclusions on the Feasibility to Separate the Infrastructure from the Transportation Activity

The organizational separation of the infrastructure from the transportation activity leads to both positive and negative consequences.

**Positive consequences**

1. Growth of the service quality due to the transfer to the flexible tariff regulations (higher transportation quality at higher price)
2. Decrease in transportation costs of route trains due to the transfer from the tariffs based on average network costs to the tariffs based on marginal transportation costs of a specific consignment
3. Increase in private investments for the locomotive and freight car fleet replacement

**Negative consequences**

1. Growth of freight transportation costs for Russian railways in comparison with the expenses of OJSC Russian Railway for freight transportation in 2007 in case of the separation of the infrastructure from the transportation activity can be **RUB 223 billion**
2. Growth of the freight transportation costs for carload shipping due to the transfer from the tariffs based on the average network costs to the tariffs based on the marginal transportation costs of a specific consignment
3. Exponential growth of fright tariffs in the regions with high traffic handling cost because of the transfer from the average network costs to the marginal ones
4. Complication of the system and, as a consequence, the growth of expenses for the government regulation because of an increase in the number of controlled entities and an increase in the number of regulation tasks
5. There will be a necessity to:
   - Substantially revise the regulatory and legal framework
   - Develop a new tariff system
   - Ensure the sufficient financing for the infrastructure
   - Ensure the transportation of socially important cargoes

Occurrence of the positive consequences has **probabilistic** nature

Occurrence of the negative consequences **is inevitable**
Conclusions on the Feasibility to Separate the Infrastructure from the Transportation Activity

The main objective of the considered transformations – to create an advanced competitive rail transportation market by separating the infrastructure from the transportation activity – will not be achieved

The separation of the infrastructure from the transportation activity is not feasible
Basic Principles of the Government Regulation and Assistance for the Infrastructure Maintenance and Development

Since the separation of the infrastructure from the transportation activity is not feasible, the railway transport infrastructure should remain under the authority of the single business entity – Russian Railways JSC – performing all the power of the infrastructure owner.

The main source of financing for the current maintenance of the infrastructure is the funds of Russian Railways JSC.

The source of financing to modernize the infrastructure can be:

- depreciation reserves of Russian Railways JSC

- profit of Russian Railways JSC

- participation of the Russian Federation by means of:
  - provision of funds from the federal budget within the framework of long-term target programs
  - provision of funds from the federal budget to Russian Railways JSC for participation in investment projects on condition of the public-private partnership
  - introduction of the investment component in freight tariffs
  - establishment of new tariff lines at separate sites to ensure the return of the funds invested in the construction
  - use of other forms of government assistance
  - introduction of tax benefits for the infrastructure owner

- attraction of the private capital on condition of the public-private partnership
Main Directions of the Correction and Adaptation of the Regulatory and Legal Framework Necessary for the Operation of Separate Infrastructure Company and Several Carriers

When taking a decision on infrastructure and transportation operations separation, it is necessary to:

- establish the observance of the principle of conservation of the unity and the centralized control of the common-use railway transport infrastructure (instead of the single business entity) at the federal law level for the infrastructure company

- establish a service fee for the use of the common-use railway infrastructure, taking into account the investment requirements of the infrastructure owner

- clearly differentiate the responsibility between the infrastructure owner and the carrier, including in the field of the uniform technological policy, transportation safety and transportation in the interests of the safety and defense capability of the country

- to introduce the carriers' obligation in addition to the generally established obligations, to approve the own rules for the provision of transportation services (by analogy with air carriers)