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Tools of Analysis in Performance Management in a Large Transport Company

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Abstract. With the help of the rating tool, transport companies will be able to improve their performance, solve strategic tasks, and conduct a comparative analysis of all divisions. The article describes the goals of conducting a comparative assessment of the structural divisions of a large transport company, calculating their place in the rating, and the main methodological provisions of the calculation. Rating evaluation of the performance of the transport holding company "Russian Railways" is carried out for the Railways and structural divisions of the company. The rating of Railways is proposed to be determined based on the performance coefficient of the target metric, taking into account the significance of each indicator, without assigning points, using the best practices approach. Three methods of selecting performance indicators for conducting a comparative assessment of the performance of structural divisions are proposed. The selected indicators are normalized and form an additive model for evaluating performance based on the significance of the criteria. The rating assessment of Railways based on an additive model showed transparency of calculation, direct influence of weight coefficients, high "sensitivity" to changes in performance parameters and the ability to model rating values by changing the performance indicators of structural divisions of the transport holding.

1. Introduction

Balanced development of effective transport infrastructure to ensure connectivity of the country's territories and sustainable economic growth, increasing the mobility of the population, accessibility and quality of transport services throughout the country, creating a transport platform for joining the five largest economies in the world, taking into account the development of high – tech industries-this is only part of the strategic tasks facing the country's leadership and transport organizations.

The use of effective performance management tools will allow us to fulfill these ambitious tasks by mobilizing production potential, making rational use of all types of resources and motivating the teams of the transport company's business units.

In all sectors of the national economy, various methods of evaluating the effectiveness of activities and building a rating of organizational units of corporations are used, which, under certain conditions, can also be applied to the calculation of the rating of the effectiveness of Railways.

2. Relevance, scientific significance of the issue with a brief review of the literature

To improve the efficiency of large transport companies, a comparative analysis of all divisions is carried out, and one of the methods of analysis is the rating assessment tool.



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The rating is based on performance indicators in the balanced scorecard (BSC) system of Norton and Kaplan, which is currently the most applicable in all types of business [1,2,3]. A system of balanced performance indicators encourages the company to establish a relationship between corporate strategy and financial goals. Each indicator should represent a link in the chain of cause-and-effect relationships that are ultimately aimed at improving financial performance. Therefore, when forming a system of indicators for comparative analysis (rating assessment), it is mandatory to use key indicators for each perspective, taking into account their weight, significance and relevance.

The rating methods depend on the business sphere, as well as on the tasks that are solved using rating methods [9,10,11].

The adaptation of these methods to identify ways to improve the business efficiency of a holding-type transport company, whose management is based on a combination of territorial and industrial (production and technical) principles, requires methodological and analytical research. In transport companies, along with the recognized prospects for key performance indicators, safety and reliability indicators are also evaluated, so when building a rating, it is necessary to expand the range of indicators for comparing the performance of transport company divisions from this point of view.

3. Statement of problem

The analysis of the economic activity of the enterprise in a broad sense affects all the key indicators of the organization and is a prerequisite for the formation of effective measures of performance management. The comparative analysis of railway performance is based on a limited number of indicators that affect all the prospects for evaluating the balanced scorecard. The weight and number of indicators used is important for summarizing results, for comparative analysis, for rating evaluation, which encourages railway teams to work intensively and efficiently, as well as to use the resources of their divisions efficiently.

4. Theoretical part

The rating is considered by us as one of the methods of comparative analysis that forms measures to improve performance. Depending on the calculation goals, there is a distinction between external and internal rating. The main purpose of rating evaluation is to rank industry enterprises among competitors, i.e. assign them a certain rank (significance). The rating of internal divisions of companies (or divisions of a holding company) replaces market competition mechanisms that are used in external comparison and is carried out in order to provide management with objective, reliable and complete information about the activities of divisions, problems, errors on the ground and deviations from the goal. Rating evaluation of the performance of the transport holding company "Russian Railways" is carried out for the Railways and structural divisions of the company. In order to maintain the stability of the network, improve manageability and improve horizontal links between verticals, JSC "Russian Railways" has created unified corporate representations of the Company in a specific territory - regional corporate governance centers (RCCS).

The objectives of the rating assessment are divided into:

- * external - an element of competition for the client, a tool for attracting investment, identifying reliable and recommended businesses.

- * internal - a tool for improving the efficiency of the company's activities, for achieving all structural divisions set goals and strategic objectives.

- * General - an element of evaluating the performance of labor collectives and motivation of managers and employees.

The main methodological provisions of the practices of rating and comparative analysis of economic entities differ taking into account their specifics and established traditions:

- 1) the analysis of the effectiveness of organizations is presented in the form of expert assessments;
- 2) the score of companies uses the performance coefficient of the target metric (a reference value) or a subjective score that reflects the level of performance;

3) the rating is determined based on the value of the integral coefficient without taking into account the significance of indicators or taking into account the significance.

To form an objective and stimulating mechanism for comparative analysis of the activities of Railways or structural divisions of companies, we propose a rating assessment tool that will be based on an additive model, which corresponds to the best practices of other sectors of the national economy.

It is proposed to determine the rating of railways based on the target metric fulfillment rate, taking into account the significance of each indicator, without assigning points, using the best practices approach.

$$P = \sum_{i=1}^n K_i * w_i \quad (1)$$

Where:

K_i - indicator performance ratio;

w_i - indicator significance coefficient.

For the target metric to calculate the coefficient of performance of the indicator it is advisable to lay the plan value subject to and not below the actual execution, so as to increase the efficiency of the activities you must consider the actual results achieved for previous periods.

When using planned values of indicators as a target metric, there is a problem of validity and quality of planning, as well as accounting for changes in the external environment due to growth or decline in business activity. It can be solved by introduction of correction coefficients to the rates of achievement, taking into account regional peculiarities of the Russian regions and their interaction with the transport system, as well as the distribution of trade flows and trade flows, influencing the nature of work and value of indicators.

A more reliable level of performance of the target metric can be determined by calculating the average annual actual values for at least 3-5 years. This approach allows us to take into account the dynamics of railway potential development and changes in the distribution of productive forces by region.

An essential aspect of the comparative analysis of performance is the desirable trend of the rating indicator. If the desired trend involves the growth of an indicator-revenue, loading, productivity-then the degree of fulfillment of the target value of the indicator is determined by the ratio of the actual value to the target metric. If the desired trend is a decrease (for example, for the cost price, technological failures), then the degree of implementation is the inverse value.

The rating of Railways should be "sensitive" to changes in performance indicators depending on the degree of implementation of the target metric. It is important that the rating assessment should include indicators that can be influenced by teams in their quest to take higher places. Indicators for calculating the rating assessment of railway operations should comprehensively reflect all the prospects of the balanced scorecard System.

For the selection of indicators is proposed to use three methods: the logical method, the coincidence of trends and correlation. Each of the methods used has its own degree of reliability and scope of application.

To select railway performance indicators, we use the logical method to select the most significant indicators used in national and strategic documents, as well as those used in the practice of analyzing railway performance.

The analysis of trends in indicators was carried out in three stages: at the first stage, Railways with a stable position in the rating were selected, with minimal deviation from the previous value, the formation of the desired trend, and the analysis of the coincidence of the desired and actual trend of the selected roads. The scientific hypothesis for justifying a system of indicators based on trend analysis is as follows: if the desired trend and the actual performance of "stable" roads coincide, then the indicator characterizes the road's effort to improve performance and should be included in the system of indicators.

The third approach for selecting indicators-the correlation method is based on identifying the correlation between the coefficient of completion of the target metric for three years and the place occupied by the road during this period, respectively, for the same roads with a "stable" position.

Having formed a system of key performance indicators, it is necessary to distribute the weight coefficient according to the prospects and for each indicator separately. The weighting factor is used to characterize the importance of the criterion, and the total value of all coefficients must be equal to one. According to the assessment prospects, the following distribution of significance was noted: economy and Finance (0.3), customers and markets (0.3), technological processes (0.2), personnel and development (0.05), security and reliability (0.15).

After determining the weight coefficients and a set of key indicators, we calculate the product of each indicator's performance, taking into account the weight. Then we calculate the total integral value for each railway by summing all the ratings for indicators within one railway and ranking places depending on the value of the total integral value.

5. Practical significance, proposals and results of implementation, results of experimental research

The analysis of the practice of forming the rating of Railways showed that the use of the rating assessment tool had a positive impact on the performance of Railways and their contribution to the implementation of strategic goals of the Russian Railways holding, the desire of roads to meet key performance indicators increased, managers and employees are motivated to achieve results, and the coordination of operational and production activities improved. Improving the methodological basis for rating formation should provide an objective and motivating assessment of the activities of divisions in order to achieve the target parameters of the Russian Railways holding strategy, as well as simulate changes in the rating when the performance indicators included in it change.

6. Conclusions

The use of rating assessment within the company is an effective tool for performance management, which will allow you to rank divisions, motivate the team and managers, achieve the strategic goals of the holding and detect the weaknesses of each branch. In addition, the proposed additive model will allow us to identify growth factors and factors that limit the growth of performance.

The rating assessment of Railways based on an additive model showed transparency of calculation, direct influence of weight coefficients, high "sensitivity" to changes in performance parameters, and the ability to model the rating values by changing the performance indicators of structural divisions of the transport holding.

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