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Quality Management of Transport Services for Cargo Owners

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Abstract

The article addresses the concept of transport service quality as an essential tool for improving customer focus and the efficiency of rail transport in the implementation of cargo traffic. Issues have been investigated on current reforms going on in the railway transport market with regard to transport service. Valid procedures (both foreign and Russian ones) have been studied on freight owners' evaluating transport service quality including All-Russian Project "Quality Index". By this method, dynamics of change has been assessed in the fulfillment of basic indices of transport service quality, and causes of their inadequacy to ideal fulfillment have been described. Presented is the transport service quality management system for freight owners. The system is based on combination of natural assessment methods, optimization of quality level and assessment of efficiency of measures to increase the quality level. Based on logics of assuring transport service quality, a sequence has been proposed to analyze the transport quality indices systems: "quality of technical means → quality of operational work → quality of transport service". Moreover, the quality of a subsequent system is the most objective characteristics of the previous system (systems) quality. It has been concluded that one of the major priorities in development of railway transport is to assure high-level quality of transport service. In addition to the most complete satisfaction of clients with railway transport services, the service quality makes it possible to increase attractiveness of railway companies in the transportation field and is the most important factor of competitiveness and the most promising for development as compared with alternative price factors.

Keywords: Railway transport; Sservice quality; Cargo owner; Company "quality index".

1. Glossary

Quality is a dynamic state associated with products, services, people, processes, and environments that meets or exceeds expectations and helps produce superior value.

Transport service quality is a set of transport service characteristics which determine its ability to meet consumers' needs by proper and effective performance of transport and related services, as well as to meet the specified standards and regulations, contract terms or usual requirements for transport service.

Cargo owner is a private individual or legal entity who needs transportation services to carry its cargo along a certain route, for a certain payment and with the guaranteed quality.

2. Introduction

The issues of the service quality assessment in the railway transport began to be considered in the world community in the second half of the 20th century. The study of the term "service quality" in foreign literature is regarded from the point of view of the theory of customer behavior, i.e. quality is regarded as one of the numerous factors that can influence the customer's decision to purchase. However, like most other factors, service quality has its own distinctive influences on customer behavior.

Service quality is characterized by customer perception of service process. For non-tangible services, quality is judged by how it is perceived by customers, i.e. the customer is the only judge of quality. In the early 1980s, C. Gronroos defined the service quality model that distinguished two subjective categories of service: expected service and perceived service (Gronoos, 1991). It was noted that the discrepancy between expectation and perception is the main determinant of the quality of customer service assessment (Klitina, 2017; Parasuraman *et al.*, 1985).In 1988, A. Parasuraman, V. Zeithaml and L. Berry developed the SERVQUAL method, which could be used to analyze the gap between services quality and the quality requirements of customer service (Parasuraman *et al.*, 1985). This method takes into account customers' perception regarding the relative importance of the service parameters. Using the peculiarities of the SERVQUAL method, a number of researchers modeled the system of the service quality

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assessment for the Indian Railways. This system is based on the cargo owners questioning and is called RAILQUAL, which consists of two stages. The first stage includes 50 parameters for assessing service quality with a 7-point scale, each of which is analyzed for two characteristics: the expected and the perceived performance level. The second stage contains 7 statements describing the definite conditions of the qualitative implementation of the transportation process, between which the respondent is required to distribute the amount of 100 points in accordance with his preferences (Kovtun, 2017).

As for the European cargo railway companies, at the present time they implement the "necessary" transition from the state companies to private customer-oriented companies, but at the same time they must always remain competitive suppliers of the services.

Among all the factors affecting this transition, the level of service quality is the most important and represents the priority issue to solve for the European cargo railway industry. Meeting the needs of existing and potential railway customers regarding the quality of their services is important for the long-term survival of the industry in many countries. Since transport is a business network functioning actually with all the branches of material production, problems with cargo railway traffic in one country would also affect most other cargo transport and cargo-generating sectors.

3. Theoretical Background

In Russia, the economic theory of the transport services quality is formed from the 50s of the last century. Its basis was laid in the works of T. Khachaturov, I. Belov, M. Mandrikov, M. Trikhunkov. A significant role in the development and systematization of this theory belongs to Galaburda (2003).

Products quality management in transport is carried out in accordance with the specificity of the industry, especially the features of the transport product themselves – transportation.

It is characterized by the properties of any service (non-material nature of the products), the so-called 5 "not": intangibility, non-conservation, non-interchangeability, inseparability from the source and impermanence in quality. It means that the known quality standards of a physical object cannot be applied to transport products, and a special approach is necessary to determine the product-service life-cycle, its quality and efficiency.

Transport products cannot be accumulated, stocked up, while transport itself must have permanent reserves of rolling stock, carrying capacity and production personnel to provide customers with transportation during the peak demand for transport services, while the production and consumption of transport products occur simultaneously.

The functioning of transport facilities has the property of inertia: they are able to work for some time "by inertia" due to overloads and to the detriment of products quality, while preserving the appearance of meeting the needs of economy and the population in transportation.

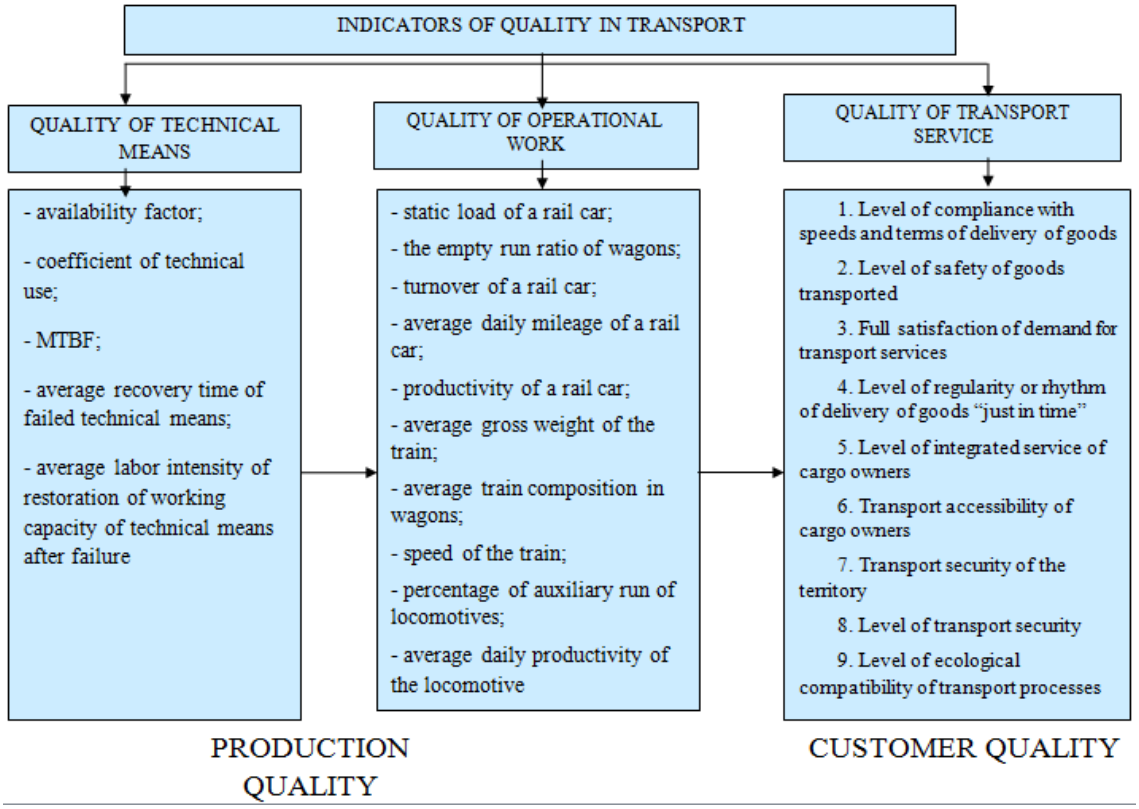
The consequence of these features is the high importance of the integrated approach to assessing quality of transport services (since individual quality indicators do not carry comprehensive information on transportation and only their totality represents such information) and the process approach to quality management in transport, i.e. priority should be given not so much to the quality control of produced products, as to the stability of technological processes that ensure the proper level of quality (Sokolov *et al.*, 2018).

Indicators of any product quality, including transport, are divided into two groups: production and customer quality. The indicators of production quality are internal indicators of the transport company (rolling stock productivity, duration of various technological operations, etc.). Indicators of industrial quality in transport are divided into two large groups: the quality of technical means and the quality of operational work. The transport company itself is primarily interested in the increase of production quality. Customers are interested in raising it indirectly as high production quality leads to reduction in the prime cost of transportation and, possibly, its price.

Customer quality includes the indicators, in the improvement of which the customer, first of all, is interested. The transport company is interested in raising them to the extent that such a rise will lead to an increase in demand for transportation. Indicators of customer quality in transport are usually called indicators of transport services quality for cargo owners and passengers (Sokolov and Lavrov, 2015).

Thus, all the transport quality indicators are divided into three groups, which have a consistent influence on each other (Fig. 1):

Fig-1. System and interrelation of quality indicators in railway transport



1. Indicators of the quality of railway equipment, characterizing its ability to perform a given scope of work while maintaining technical parameters.

2. Indicators of the quality of operational work, characterizing the quality of the use of technical means of railway transport and indirectly reflecting the interests of cargo owners (for example, a transport company can provide customers with a larger discount with reduction in the cost of production due to the increase in the quality of operational work, etc.).

3. Indicators that directly reflect the interest of customers in their implementation and enhancement, i.e. indicators of the transport services quality (Smirnov and Lavrov, 2008).

4. Empirical Study

In connection with the strengthening of the importance of improving the customer service quality, in the context of the development of competition in the railway transportation market, a group of Russian scientists with the support of mass media in the transport sector has developed an all-Russian project "Quality Index". So, quarterly, starting from 2011, surveys of a representative sample of cargo owners are conducted to find out their satisfaction with transport services quality for a number of indicators. According to the results of the survey and their analysis, monthly reports are prepared; the experts of the scientific group periodically come up with an analysis of the data obtained in the press (Belyaev and Krotova, 2015; Gronoos, 1991).

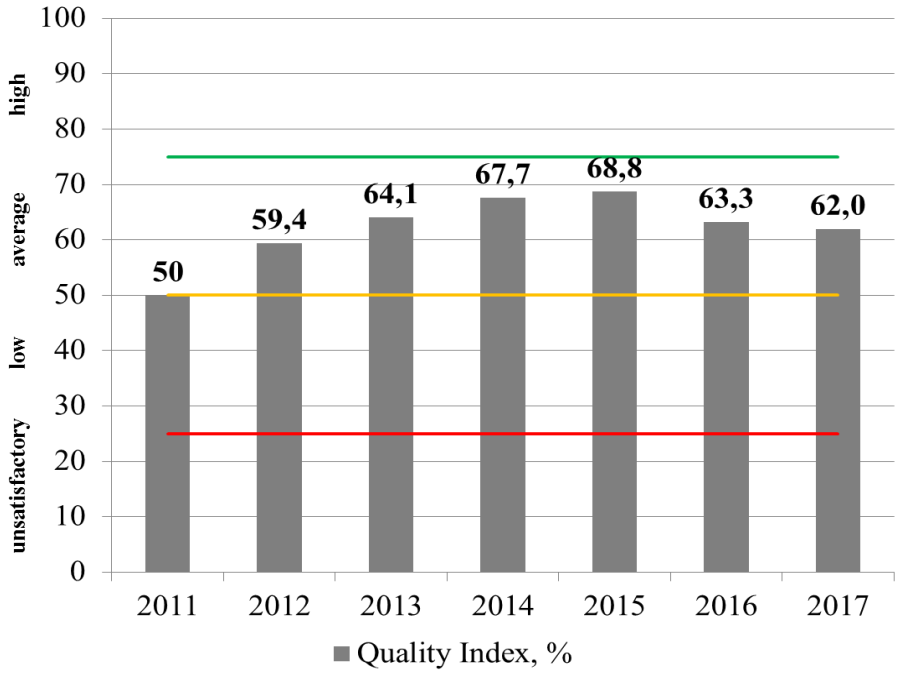
During the process studying, customers evaluate products and services quality, pricing policy, additional services and special offers on the cargo transportation market by the main railway transport. The results obtained are compared for different periods, their dynamics is estimated, incl. by years and months. Technically, the respondents' opinions are collected through the application of questioning and interviewing procedures. In the study of the business process, managers of the top and middle level of the companies who are users of services in the cargo transportation market by the main railway transport take part (Zaytseva and Pankratova, 2017).

In the framework of the questionnaire, respondents are asked to give an expert assessment of the current state of the business process according to individual criteria on a 100-point scale with the corresponding assessment levels: 0-25 points – "unsatisfactory", 25-50 – "low", 50-75 – "average", 75-100 – "high" (the participants of the study were informed that the score they put corresponds to one or another level of evaluation).

Based on the analysis of expert assessments, the index of the general level of satisfaction with the quality of services (or quality index) is performed, which is an integrated indicator that summarizes all the assessments obtained and is calculated as the arithmetic mean (without taking into account the significance of individual indicators). The Quality Index includes 11 indicators: the services cost, the coordination of applications, the availability of wagons, the technical condition of wagons, the supply of wagons for loading/unloading on schedule, the observance of delivery times, the assessment of the information technology level, the safety of cargo, the full satisfaction of demand for transportation, transport infrastructure and the cost of services of the operator companies (Lapina and Kretov, 2004).

Dynamics of the values of the total Quality Index for all 13 indicators for the period from 2011 to 2018 is shown in Figure-2. (RZD-Partner, 2011-2017)

Fig-2. Dynamics of the total quality index values for 2011 to 2017



The results of the performed procedure reflect both the parameters of the generalized index and its individual components. In addition, the most representative statements made by respondents during interviews are presented. At the same time, special attention is paid to expert assessment and opinions on forecast trends (Buzunova, 2018; Kuznetsov *et al.*, 2018).

5. Conclusion

At the moment on the Russian market of railway transport there is a significant excess of wagons offer for loading over demand for transportation. In particular, this is due to the excessive number of free cars from the operator companies and the low level of demand due to the general economic conjuncture. Therefore, according to the cargo owners, the operators, in order to activate their cars to work, agree to almost all the customers' conditions for transportation (Sokolov and Lavrov, 2015).

This situation is rather positive for industrial enterprises, since the shortage of demand for transportation forces the operators to make certain concessions to cargo owners, including price issues, which in turn increases the degree of competition between transport companies. Another thing is services quality provided by operators in such cases - it is usually not very high.

At the same time, there are still negative reviews of cargo owners regarding some problems. One of such problems is non-compliance with the delivery process of wagons according to the schedule, even when the customer company itself can plan its loading schedule quite clearly.

There are also problems with improper increase in the rhythm of transportation of their carriages by operators who cut off inconvenient cargo at a particular moment.

Another problem is connected with the coordination of the convenient delivery time of wagons for the cargo owner. Quite often, operators do not listen to the customer requirements on this issue and send empty cars earlier than the established time limit, which only increases the problems: if empty cars are not submitted on request, the company will not be able to ensure the return of loaded cars in time.

The requirements for the timing of the transport order approval for cargo owners concerning export cargoes have recently become more severe. Now they are required to plan transportation orders several weeks before the cargo is accepted for transportation, which is not easy for cargo owners, since it takes time to coordinate the planned cargo order for transportation.

Thank to similar reasons, the cargo owners raise the question of the transition to the use of motor transport services for goods transportation. Among the advantages of motor transport, cargo owners note the high customer-orientation in comparison with railways, the simplicity in the documents processing, the short waiting period from the filing of a transport order to the transportation process itself. And although here it is mostly about short distance transportation, some trucking companies already offer long-distance freight. Therefore, there is a risk of losing a significant part of the demand for cargo transportation by railway.

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