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Features of state regulation of the organization of transportation process in modern conditions

The article reveals the role and peculiarities of the transportation process in the transport system. Forms and methods of state regulation of the organization of transportation in the Republic of Kazakhstan are considered. The duties of the carrier in the transportation of goods, passengers, baggage, postal items and in the implementation of transportation and forwarding services are characterized. The authors classified transportation by the following features: by type of transportation; by type of transport used; by industry; by type of messages; by execution time. The proposed classification does not only regulates a set of quality indicators, but also characterizes the strategy of the organization of transportation, and its evaluation with subsequent control impact. The production indicators, the ratio of income from freight and passenger transportation of the activities of the Joint Stock Company «National Company» Kazakhstan TemirZholy», which has a holding structure based on ensuring the functional integrity and controllability of the railway industry in the transportation process, are analyzed. The specifics of the application of the integrated system of regulation and control of material and information flows are determined. The possibilities of application of modern methods of intermodal (multimodal) transportations for increasing the efficiency of the domestic transport complex and enhancing its integration into the world transport system are explored. Proposals on the use of RFID equipment for the creation of a tracking system for locomotives, passenger and freight cars are given.

Keywords: government regulation, transportation process, transport, freight, passenger, control, monitoring.

The impact of transport on the life of each state is very high. Transport meets one of the most important needs of mankind today - the need to move passengers and cargo.

In modern conditions, the activity in the field of organization of transportation changes qualitatively, it implies the search for various ways of development, including innovation, to improve the well-being of the country's population and meet the needs of the population, it is necessary to constantly improve the quality of public services and improve the performance of government agencies in general.

With the development of technology, the process of transportation has changed significantly over the centuries, forming a transport industry, the product of which remains «transportation». The satisfaction of humanity in transportation created certain prerequisites for the emergence of new categories, such as the transportation process, the transport system, the transport process, transport services and others. Each of these categories requires comprehensive study and consideration, since transport is a complex system of people's social and production activities, aimed at the organization of passenger and freight traffic, and is the subject of transport management.

The transport process is a set of technological processes and operations aimed at changing the location of passengers or (and) cargoes using a transport system [1].

The transport process is aimed at changing only one parameter of people and material values, namely, the coordinates of their location. During the transportation process, other parameters of passengers and cargo should not change and, above all, the health of passengers and the commodity qualities of goods should not worsen due to the fault of the transport system. Moreover, the threat to the safety of passengers' lives and the integrity of cargoes should not be created.

The transport process is implemented using a transport system. The transport system is a set of functionally interconnected technical means and technical personnel intended for implementation in the regulated conditions of the transportation process.

If we consider the transport system as a certain technological system, then the «constituent parts of production» in the form of cargo and passengers should also be classified as structural components [2].

Thus, transport, on the one hand, «physically» realizes this exchange (circulation of goods and services), on the other hand it itself renders services to the main market subjects: sellers and buyers, i.e. forms a transport market. The production of transport is movement. A useful effect that appears as a result of the

movement, its final result is the delivery of goods and people to the destination. This is the main «product», i.e. a transport service that has a non-material form of consumption. However, like all products, it is characterized by its own characteristics, i.e. in order to successfully sell it, it is necessary to provide a high level of transport services: delivery exactly on time, without losses, with the maximum share of convenience and safety for customers.

This provision requires considerable material, labor and financial resources. Consequently, transport services have a certain value (use and exchange), which arises in the process of transportation and is included in the price of the goods at the place of consumption.

However, the price of transport products on the market, like any other commodity, should be determined by supply and demand, taking into account socially necessary labor costs and consumer transport properties.

Transport products are transportations, i.e. the result of the spatial movement of passengers and cargo. They are produced and consumed simultaneously. People and goods travel together with means of transport. Products can not be procured for future use, put in stock, in order to realize in the period of unexpected failure [3].

Transportation of new material products does not create, but moves produced by other industries. Transport products do not have raw materials.

Units of measurement of transport products:

– ton-kilometers (cargo turnover - the sum of the products of the quantity of goods transported in tons per km of the sections);

– passenger-kilometers (passenger turnover - the sum of the products of the number of passengers sent to the distance they are traveling);

– tons (number of tons shipped);

– passengers (number of passengers).

In the economic literature and in practice recently attention is focused not only on the process of transporting goods, but also on the transport process, which is much wider in content. This concept is applied both by the manufacturer of transportations, and their consumer. For the manufacturer, the transport process is associated with setting the technology and taking into account the costs of its implementation, for the consumer - with the result of the movement and the amount of freight transportation costs, which subsequently affects the cost of goods or products. Therefore, the problem of determining the transport process and its components is relevant for all participants of the transport services market.

There are different approaches to the consideration of the transport process. So, D.M. Sologub considers the transport process of a road transport enterprise as «a combination of actions performed by an employee and using various means of labor in a certain sequence and interconnection of actions, as a result of which the movement of goods or passengers to a specified distance» [4].

The transport process of road transport consists of a multiple repetition of individual cycles, each of which is a complete complex for the delivery of goods, which includes the operations of preparation, loading, monitoring the state, moving to a specified distance, unloading the cargo and supplying the car for loading.

From the position of I.S. Nesterenko transport process is a process of moving cargo or passengers, including preparation of cargo for transportation, rolling stock delivery, cargo loading, execution of transportation documents, transfer, unloading and delivery of cargo to the consignee [5].

A.V. Velmozhin and V.A. Gudkov represents the transport process as a certain technology, according to which the movement of a certain cargo from the place of its production to the place of its consumption occurs. They define the transport process as a set of loading operations at the loading and reloading points of transportation, unloading operations at the points of transfer of goods from one mode of transport to another and the point of unloading and supplying the rolling stock for loading [6].

When transporting passengers, the transport process involves the movement of passengers, including the sale of tickets and the formation of passenger traffic, the landing and disembarkation of passengers, as well as the supply of vehicles.

I.S. Turevsky connects transport process with the movement of cargo and passengers, including all the preparatory and final operations: the preparation of cargo, their loading and unloading, landing and disembarkation of passengers, the acceptance of goods, the supply of vehicles and other operations [7].

Thus, some authors believe that the transport process is a combination of actions of interrelated technical means and living labor, as a result of which the spatial state of goods and passengers changes. Other

specialists argue that the transport process is a process of moving cargo or passengers, which includes: preparing cargo for transportation, rolling stock delivery, loading cargo, processing shipping documents, moving, unloading and delivery of cargo to the consignee.

The legislation of the Republic of Kazakhstan on transport is based on the Constitution of the Republic of Kazakhstan, consists of the Law on Transport and other normative legal acts of the Republic of Kazakhstan.

State regulation of transport activity is carried out by means of legal support, licensing, technical regulation, taxation, crediting, financing and pricing, implementation of investment, unified social and scientific and technical policy, control and supervision over the performance of transport legislation of the Republic of Kazakhstan.

When transporting goods, passengers, baggage, postal items and when carrying out freight forwarding services, the carrier is obliged:

– to have the permission provided by the Law of the Republic of Kazakhstan «On Permits and Notifications»;

– toconclude an agreement (contract) with the client in the prescribed form;

– toprovide vehicles that have documents in the field of conformity assessment;

– to compensate for damage caused to the client and a third party, including loss of time in money equivalent;

– to ensure the safety of the passenger, the creation of the necessary amenities and conditions of service, and in the event that the passenger passes the luggage, also timely transportation and safety of his luggage;

– toensure traffic safety;

– toprovide the client with freedom of choice of transport in the transport services market;

– toreceive documents confirming compliance of the shipment with its certificate;

– to comply with the requirements of state bodies within their competence for the implementation of special and military transportations (the costs of the implementation of these transportations are reimbursed at the expense of budgetary funds in accordance with the legislation of the Republic of Kazakhstan);

– to insure its civil liability to passengers in the manner prescribed by the legislative acts of the Republic of Kazakhstan on compulsory insurance;

– to provide disabled persons with access to passenger transportation, carrier services, information on services, create the necessary amenities and conditions for their transportation services [8].

As we can see, Kazakhstan's legislation on regulation of transport services provides for administrative and economic methods.

Administrative methods should ensure regulation of natural monopolies, access of owners of vehicles, as well as freight forwarders and carriers, to professional activities using licensing or declaration mechanisms (notification of market participant obligations).

Economic methods for the formation of a competitive market for transport services provide for the implementation of mechanisms of tax, tariff and investment policies. Economic methods should stimulate the creation of freight forwarders and transport companies of all types and levels in the field of freight and passenger transport that could provide competitive transport services. In particular, it is advisable to consider a mechanism to stimulate the creation of large transport companies that can invest in the development of highly efficient transport technologies and modern vehicles. It is necessary to provide state support to increase the competitiveness of national transport companies.

Thus, the creation of a market for competitive transport services implies:

– Development of the regulatory and legal framework in the provision of transport services (security, environmental friendliness, quality of transport services, development of methods of state regulation of the market). At the same time, the creation of effective feedback in the form of a control and supervision system is of paramount importance for regulation;

– Development of a high-performance transport and logistics infrastructure that provides a competitive level of transport services (primarily commercial speed and reliability);

– Achievement of the advanced level of technology and technologies that ensure safety, environmental friendliness, economy and quality of transport services.

Transportation is a part of business activities aimed at moving people and goods from the point of departure to the destination in order to balance territorial and economic discrepancies between supply and demand.

All transportations are subdivided and classified according to a number of characteristics (Table 1).

Table 1

Features of classification of transportations

№	Characteristics of classification	Types
1	By type of transport:	- freight; - passengers.
2	By type of transport used:	- automobile; - railway; - river, sea; - aviation; - mixed.
3	On the basis of industry:	- goods of industry; - loads of agriculture; - construction cargo; - trade goods; - other.
4	By type of messages:	- technology - transport performed on the territory of the industrial enterprises, construction sites, in agriculture; - city - performed within the city limits. Good road conditions, a variety of cargoes, small distances are characteristic; - suburban - are performed at a distance of 50 km from the city. Characteristic: good road conditions, approximate constancy of goods, constant cargo flows; - long distance - occur at more than 50 km between the administrative units (trait - constancy cargo flows though periodically flows can be changed); - in regional and interregional - are carried out on the territory of the administrative regions, or between them; - internationalandabroad.
5	By execution time:	- constants; - seasonal; - temporary (arise on demand).

Note. Prepared by the authors [9, 10].

A general indicator of transport products for freight transport is the freight turnover, measured in ton-kilometers, which is the product of the mass of goods transported in tons per distance transported in kilometers.

The production of passenger transport is the movement of people, changing their spatial location. The general indicator of transport products for passenger transport is passenger turnover, measured in passenger-kilometers, which is the product of the number of passengers carried by the distance of transportation in kilometers.

Classification not only regulates a number of quality indicators, but also characterizes the strategy of the organization of transportation, and its evaluation with subsequent control impact, since the classification groups of this classification determine the sequence of activities and criteria for assessing the level of quality.

To ensure the safety of the service, it is recommended to use constant monitoring at all stages of the life cycle of the transportation services, excluding or minimizing the defects allowed during the process.

In the conditions of the emerging market economy, the activities of companies in the organization of transportation are qualitatively changing; it implies the search for ways of own development. For successful operation in a dynamic environment, the company must constantly improve its position in the market: to search for new forms of capital application; identify more effective ways to promote services; to implement an active innovative and investment policy. Therefore, we will analyze the activities of the Joint Stock Company «National Company «Kazakhstan TemirZholy» (JSC «NC «KTZ»).

At present, JSC «NC «KTZ» has a holding structure based on ensuring the functional integrity and controllability of the railway industry in the transportation process. The sole shareholder of JSC «NC «KTZ» is JSC «National Welfare Fund «Samruk-Kazyna». As of 01/01/2016:

– number of authorized shares - 502,040,458 ordinary shares;
– the nominal value of the announced shares is KZT 1,000;
– the number of placed shares - 494 698 044 ordinary shares [11].

JSC «NC «KTZ» carries out activities such as acting as the operator of the main railway network, transportation of passengers and goods by rail. To date, rail transport is the most important component of the industrial infrastructure of the Republic of Kazakhstan.

Table 2

Production indicators of JSC «NC «KTZ»

Name	Unit	2014 y.	2015 y.	2016 y.
Freight turnover	Million ton-kmnet	216,524	189,759	188,740
Passenger turnover	Million pass-km	18,229	17,030	18,057

Note. Prepared by the authors [11-13].

The freight turnover was 188,740 million ton-kmnet. Relative to the year of 2014, the decrease was 12.8 %, which is associated with a decrease in the transportation of goods by the main nomenclature of goods, with the exception of ore of non-ferrous and sulfuric raw materials, chemical and mineral goods and non-ferrous metals. In terms of types of messages regarding the year 2014, the following changes occurred:

– 4.8 % decrease in intra-republican communication due to a 4.6 % decrease in traffic volume and a 0.2 % average distance of cargo transportation;

– 22.9 % decrease in exports due to 16.8 % decrease in traffic volume and an average cargo transportation distance of 7.4 %;

– on import, a decrease of 1.9 % due to a decrease in the average range of cargo transportation by 3.7 %, with an increase in traffic volume by 1.9 %;

– transit decreased by 11.5 % due to a decrease in traffic volume by 12.8 %, with an increase in the average cargo transportation distance by 1.5 %.

At the same time, in transit container shipments in the direction of China-Europe-China, by the end of 2015, a 2-fold increase to the loss of 2014 has been achieved.

Consider the ratio of income from freight and passenger transportation by JSC «NC «KTZ» for 2014–2016 years (Fig.).

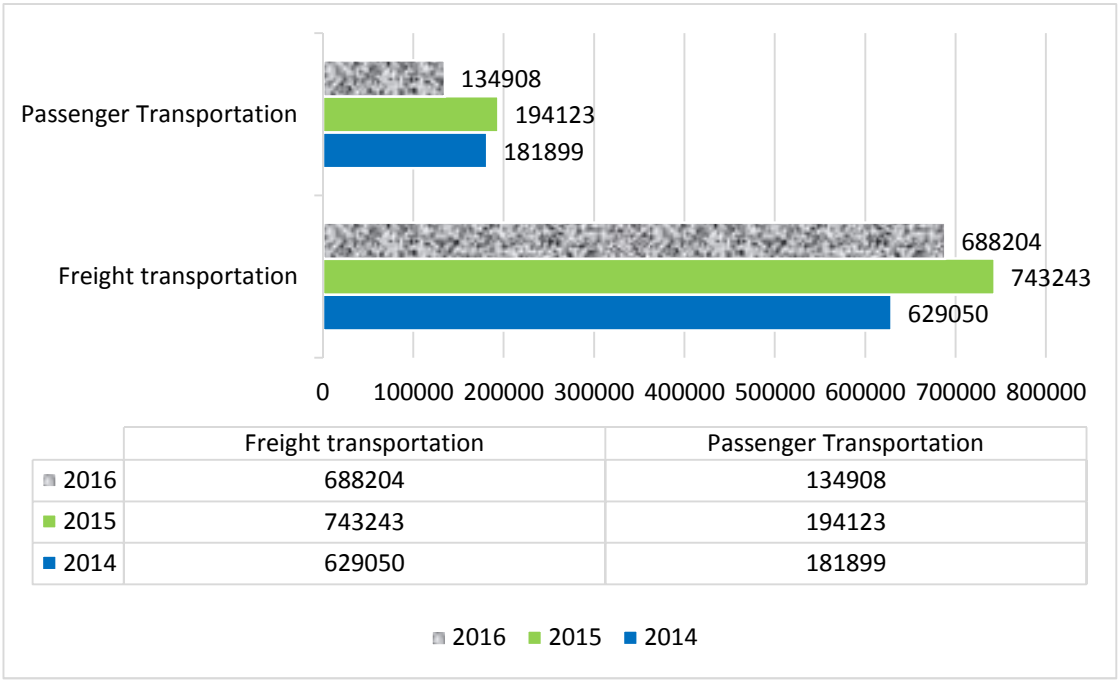

Figure. Ratio of income from freight and passenger transportation by JSC «NC «KTZ» (mln) (prepared by the authors [11-13])

As we see, the revenues from freight traffic take a special place in the activities of JSC «NC» KTZ». In 2016, revenues were received in the amount of 688.2 billion tenge. Nevertheless, there is a decline relative to 2015, which is mainly due to a decrease in the volume of transport of coal, oil and oil products, iron ore and construction cargo.

According to the survey and new trends in technology, we consider it necessary to use RFID (RadioFrequencyIDentification) technology in the railway systems market.

RFID technology will enable:

– Track freight and passenger cars in real time without the use of expensive and complex satellite systems of global positioning (GSP).

– This is a passive technology, with low cost and maintenance-free.

– Easy to use: via SOLAR / GSM or connection.

– Fast payback.

With the use of RFID technology, «Smart code for tracking» is created on a freight or passenger car, and track readers increase their visibility, which leads to growth of business for all players [14].

RFID should be applied:

– in accounting transactions without human participation;

– for adding information to technological objects;

– to quickly determine the presence and number of small objects.

Thus, we consider it necessary to implement RFID technology in Kazakhstan's railway transport system. Tracing property using RFID equipment in the field of railway transport, will provide real-time data on the status of critical elements during production, maintenance and supplies. One of the main advantages of RFID is the more convenient and efficient operation of railway equipment, reducing costs, increasing efficiency and reducing risks.

To improve the organization of transportation, we offer:

– to create an integrated system of regulation and control of material and information flows. The use of modern means of information tracking of material flows promotes the introduction of «paperless» technology. On transport, instead of the accompanying cargo of numerous documents (especially in international traffic), information is transmitted synchronously with the cargo, containing all the necessary requisites for the characteristics of the goods. With this system, you can obtain comprehensive information about the cargo at any time on the route sections and, on the basis of this, make management decisions;

– To improve the efficiency of the domestic transport complex and increase its integration into the world transport system, apply modern methods of intermodal (multimodal) transport. The modern logistics practice of transportation is associated with an ever-increasing expansion of shipments carried out by one freight forwarder (operator) from one dispatching center and a single transport document (multimodal, intermodal, modal, A-modal, combined, segmented, etc.). In case of intermodal transportation the cargo owner concludes the contract for the whole journey with one person (operator). The operator can be, for example, a freight forwarding company that, acting throughout the entire route of cargo transportation by various modes of transport, frees the cargo owner from the need to enter into contractual relations with other transport enterprises. The signs of intermodal (multimodal) transportation are: the presence of a delivery operator from the initial to the final point of the logistics chain (channel); single through rate of freight; a single transport document; unified responsibility for cargo and execution of the contract of carriage;

- use RFID equipment to create a tracking system for locomotives, passenger and freight cars. This equipment tracks the components of the cars, in particular, with wheel pairs. One of the main advantages of RFID is the possibility of use in maintenance, repair and operation, which is represented by: - maintenance of railway transport operators; current and major repairs; rental and lease of assets; identification and consideration of important spare parts for which records are made, in particular for inspection or maintenance.

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Қазіргі жағдайдағы тасымалдарды ұйымдастыру үдерісін мемлекеттік реттеудің ерекшеліктері

Мақалада тасымалдау үдерісінің көлік жүйесіндегі рөлі мен ерекшеліктері анықталған. Қазақстан Республикасындағы тасымалдарды ұйымдастыру үдерісін мемлекеттік реттеудің нысандары мен әдістері қарастырылған. Тасымалдаушының жүктерді, жолаушыларды, пошталық аудармаларды тасымалдаудағы және көліктік-экспедициялық қызметтерді атқарудағы міндеттері сипатталған. Авторлар тасымалдауды мынадай сипаттары бойынша сыныптаған: тасымалдау түрі бойынша; қолданатын көліктің түрі бойынша; салалық сипаты бойынша; хабарламалық түрі бойынша; орындалу уақыты бойынша. Ұсынылған сыныптама көптеген көрсеткіштер сапасын жинақтап ғана қоймайды, сонымен қатар тасымалдауды ұйымдастыру үдерісінің стратегиясын сипаттайды және оның кейіннен басқару әсерін бағалайды. Тасымалдау үдерісінде темір жол саласының жалпы қызметтілігін және басқарылуын қамтамасыз етуге негізделген, холдингттік құрылымы бар, «Қазақстан темір жолы» Ұлттық компания» Акционерлік қоғамының өндірістік көрсеткіштері, жүк және жолаушыларды тасымалдау қызметтерінен түсетін табыстардың арақатынасы талданған. Материалдық және ақпараттық ағындарды реттеу мен бақылаудың біріктіру жүйесін қолданудың ерекшеліктері анықталған. Отандық көлік кешенінің тиімділігін арттыру және оның әлемдік көлік жүйесіне интеграциялануын арттыру үшін интермодальдық (мультимодальдық) тасымалдаудың заманауи әдістерін қолдану мүмкіндіктері зерттелді. Локомотивтерге, жолаушылар мен жүк вагондарына арналған қадағалау жүйесін құру үшін RFID жабдығын пайдалану туралы ұсыныстар берілді.

Кілт сөздер: мемлекеттік реттеу, тасымалдау үдерісі, көлік, жүк тасымалы, жолаушы тасымалы, бақылау, мониторинг.

А.С. Есенгельдина, Д.А. Ситенко, М.Т. Кантуреев, А.У. Амирова

Особенности государственного регулирования процесса организации перевозок в современных условиях

В статье выявлены роль и особенности перевозочного процесса в транспортной системе. Рассмотрены формы и методы государственного регулирования процесса организации перевозок в Республике Казахстан. Охарактеризованы обязанности перевозчика при перевозке грузов, пассажиров, багажа, почтовых отправлений и при осуществлении транспортно-экспедиционных услуг. Авторами классифицированы перевозки по следующим признакам: вид перевозок; вид используемого транспорта; отраслевой признак; вид сообщений; время выполнения. Предложенная классификация не только упорядочивает множество показателей качества, но и характеризует стратегию процесса организации перевозок и его оценку, с последующим управляющим воздействием. Проанализированы производственные показатели, соотношение доходов от грузовых и пассажирских перевозок деятельности акционерного общества «Национальная компания «Қазақстан темір жолы», которое имеет холдинговую структуру, ос-

нованную на обеспечении функциональной целостности и управляемости железнодорожной отраслью в перевозочном процессе. Определены особенности применения интегрированной системы регулирования и контроля материальных и информационных потоков. Исследованы возможности применения современных методов перевозок для повышения эффективности отечественного транспортного комплекса и активизации его интеграции в мировую транспортную систему. Даны предложения по использованию RFID-оборудования для создания системы слежения за локомотивами, пассажирскими и грузовыми вагонами.

Ключевые слова: государственное регулирование, перевозочный процесс, транспорт, грузовые перевозки, пассажирские перевозки, контроль, мониторинг.

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