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**INNOVATIVE DEVELOPMENT  
OF TRANSIT  
TRANSPORTATION BY  
RAILWAY TRANSPORT**

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**Annotation.** The article examines the innovative development of railway transit transport in Kazakhstan, including the management of domestic, export-import and transit freight transportation. The study revealed the need to create a modern transport infrastructure in Kazakhstan to attract transit cargo flows. Currently, Kazakhstan experts have identified such problems as limited international transport, limited technological development, underdeveloped intermodal transport, low level of transport and logistics services, insufficient number of vehicles and their outdated fleet. In addition, in developed countries logistics makes a significant contribution to GDP; in Kazakhstan it is still at a low level. The article discusses fundamental changes in all technological and business processes based on the introduction of new rolling stock, efficient technological infrastructure facilities, intelligent transport process management systems and other technological and organizational innovations in Kazakhstan's railway transport. The main feature of railway transport is that this industry influences the pace and scale of innovation activities of enterprises, therefore railways are classified as infrastructure and are mainly service-oriented. The purpose of these changes is to study the competitiveness of industry enterprises, the need to increase their efficiency and investment attractiveness. In this context, one of the most important and complex tasks is to develop ways to manage the development of innovative activities at enterprises in the industry. Government authorities have considered a set of organizational and economic measures in relation to railway transport enterprises to manage the innovative development of transit transport, create internal and external conditions for the growth of innovative activity.

**Key words:** transit transportation, innovation, infrastructure, innovative potential, transport corridors, logistics, cargo flows.

**Introduction.** In the strategy of “Kazakhstan - 2050” “New political course of an established state” [1], the task was set to increase transit traffic by half by 2020 and by 2050 – tenfold. The State Program for the Development of Transport Infrastructure until 2020 [2], adopted at a Government meeting, is aimed at implementing the strategy. The relevance of the study lies in the fact that the innovative development of transit transportation takes on new shape after the implementation of the state program for the development of transport infrastructure. Responsibility for the implementation of the tasks set by the Head of State is assigned to NC KTZ JSC, as a national company develops the segment of multimodal and transit transportation.

**Basic provisions.** The article discusses the innovative potential of transit transportation, the problems of introducing innovative technologies in railway transport, optimizing the transport and logistics system when transporting and sending cargo, and also describes modern innovative systems aimed at increasing freight flows through Kazakhstan.

The purpose of the study is the current state and prospects for the development of the transport complex of the Republic of Kazakhstan, its place and role in the development of

innovation and modernization of the economy, the expansion of international cooperation, the implementation of the export and transit potential of the republic, in the global system of Euro-Asian transport corridors.

Kazakhstan, being in the center of the Eurasian continent and possessing a noticeable transport and communication network, occupies a significant place in the international transit transportation market. Due to the geographical position of the USSR, almost the only possible land route between Europe and the countries of the Asia-Pacific region passed through its territory. The main transportation of transit cargo was carried out along the Trans-Siberian Railway from the Far Eastern ports of the USSR, as well as through border railway crossings in the north of the PRC and Mongolia.

At the end of the 1980s, reconstruction and construction of the 800-kilometer section Aktogay - Druzhba (Kazakhstan) and Alashankou - Urumqi (China) on the Kazakh-Chinese highway resumed. Its opening in 1990 made it possible to create a new transcontinental route connecting the shores of the Pacific Ocean and Europe, which has its own gravitating cargo flow, which allowed Kazakhstan to realize trade and economic ties with China, Southeast Asia, which is intensively developing its economy, and at the same time become a transit railway state.

By the mid-1990s, the construction of a 300-kilometer railway section on the territory of Turkmenistan and Iran was completed, which made it possible not only to connect the railways of the two countries, but also to close the Trans-Asian Railway.

Over the last decade, new highways have begun to emerge, crossing the Eurasian continent both in the East-West direction and in the meridian direction: the formation of the Eurasian land transport network of the 21st century, the basis of which is railways, has begun.

**Research methods.** The work of many Kazakh and foreign scientists and specialists is devoted to various scientific and methodological aspects of logistics, transit and multimodal transportation, innovation, innovative potential and development of the transport and logistics system. The information base of the study was made up of materials from state target programs for the development of the transport complex, resolutions of the Government of the Republic of Kazakhstan on the development of transport and the economy, and also materials from NC KTZ JSC, the Statistics Agency, the Customs Committee, the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan, the Research Institute of Transport and communications of the Republic of Kazakhstan, materials from surveys of cargo flows.

**Research results.** NC KTZ JSC revised the company's development strategy and the company's operating model, approaches to project implementation related to organizational changes, a business roadmap for 2019-2021 and the implementation of a business transformation program for 2020-2021. In accordance with the approved work plans at the end of 2020, the projects achieved the following results:

- in 2020, the amount of efficiency in implementing asset management processes amounted to 6.86 billion tenge, it was achieved through asset optimization, leasing of buildings, transition to a new SLA service model of NC KTZ JSC; it is expected that in 2021 it will bring 14.4 billion tenge.

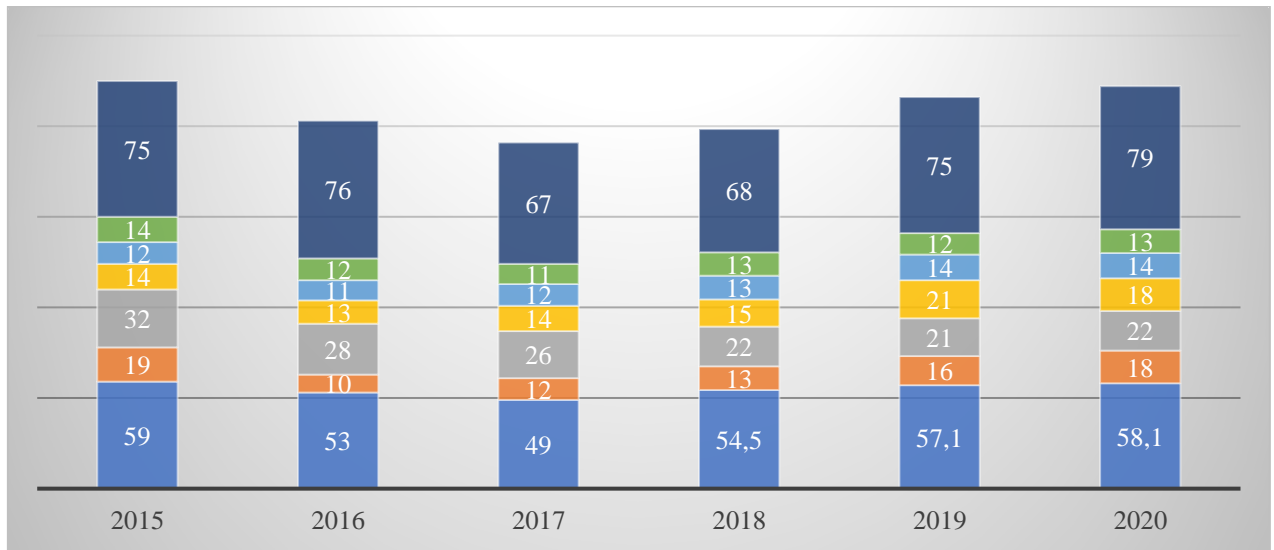
- problems in 2020 brought companies - 2.18 billion tenge.

- in 2018, due to the introduction of a new marketing and sales model, SAP CRM was launched at KTZ Express JSC; CRM is integrated with electronic document management (EDM), a call center has been implemented on the basis of KT Cloud Lab LLP.

- under the project "implementation of a new data management model", a project was launched in 2021 and work began on the "Design" stage. Work is underway to implement the automated master data management system SAP MDG and other transformation projects are being implemented.

The main commercial products required for transportation by rail are bulk and liquid cargo, such as ore, coal, grain, etc. (Figure 1). The lack of direct access to the sea, including a large territory and export orientation, makes the economy of the Republic of Kazakhstan one of the most cargo-intensive in the world, causing high dependence on the transport system. Since 2020, a

systematic program for the development of transit transportation has been implemented. This market segment includes the transportation of high value-added goods in containers.



Note: Annual report of JSC NC KTZ Freight transportation for 2020 [3].

Figure 1 - Dynamics of freight turnover of railway transport by type of cargo, billion t-km

The favorable geographical location of the country has formed five international transport corridors (Northern Corridor of the Trans-Asian Railway (TAR), Southern Corridor of TAZ, TRACECA, North-South, Central Corridor of TAZ), increasing the share of transit traffic in the total sales of JSC NC KTZ.

Integration in the global transportation chain leads to the need to take into account the impact of innovative and structural changes in commodity markets in the context of economic, political and technological changes [4] The dynamics of the volume of freight transport by rail is associated with the dynamics of the country's economic growth. In 2022, Kazakhstan's GDP growth was 4%, including in the mining industry - 3.7%, manufacturing industry - 4.4%, transport and warehouse industry - 5.1%. Foreign trade turnover increased by 1.1% - imports increased by 11.5%, exports decreased by 4.7%.

The main performance indicators of the company are presented in the following table (Table 1).

Table 1.

Key performance indicators of the company

Name	2020	2021	2022	deviation 2022-2020(+;-)	deviation 2022/2020 %
Freight turnover, billion t-km	206	220	224	18	108.7
Cargo transported, thousand tons	272.1	282.9	288.9	16.8	106.2
Transit in container, thousand TEU	347.5	537.4	664.6	317.1	191.3
Passenger turnover billion p-km	15.1	14.9	14	-1.1	92.7
Thousands of passengers transported	18354	17719	16546	-1808	90.1
Profit from core activities, billion tenge	913.1	1044.2	1139.1	226	124.8

Current profit, billion tenge	105.1	128	170.1	65	161.8
EBITDA, billion tenge	212	249.1	313.9	101.9	148.1
Note - Annual Report of JSC NC KTZ Freight Transportation for 2020 [3].					

In 2023, compared to the level of 2022, freight transportation by rail increased by the following types of relations: national transport - by 0.38%, imports - by 14.95%, transit - by 3.67%, exports - decreased by 12% .

Transit container transportation is a promising highly profitable segment. In 2023, the volume of container traffic amounted to 664.6 thousand two-pound equivalent units (TEU), which is 24% more than in 2022.

The foreign trade turnover of the Republic of Kazakhstan is steadily increasing every year. At the same time, transit cargo flows in the directions of Southeast and East Asia - Europe through the territories of the Republic of Kazakhstan and the Russian Federation, according to estimates of international analytical centers, are estimated at approximately 350-400 billion dollars. However, due to various circumstances, the Republic of Kazakhstan uses this potential by less than 1%. For example, bringing the volume of transit container traffic to 1.234 million twenty-foot equivalent units (TEU) in 2022 and to 2 million TEU in 2023, the annual income from transit traffic to 4 billion dollars.

In 2023, the volume of traffic in the direction of China - the EU was 285 times higher than in 2012 and amounted to 312.8 thousand TEU, and in general the volume of container traffic amounted to 540 thousand TEU, which is 55% more than in 2021. At the same time, return loading from Europe in the direction of China is ensured at the level of 76% (Table 2) of transit cargo flows in international directions.

Table 2.

Transit cargo flows of international destinations, thousand DEF

thousand TEU

Directions	of the year		
	2020	2021	2022
PRC – EU – PRC	107	203	312.8
Russia, China - Central Asia and other directions	140	152	224.7
Trans-Caspian international transport route	0.2	3.9	5.9
Note: Annual report of NC KTZ JSC Freight transportation for 2019 [3].			

312.8 thousand TEUs were transported in China-Europe directions, which is 54% higher than the 2021 level.

In the directions Russia-China-Central Asia (CA) and other directions, the volume of transit container traffic amounted to 224.7 thousand TEU, which is 52% higher than the level of 2021.

In transit traffic along the Trans-Caspian International Transport Route, 5.9 thousand TEUs were transported, which is 2 times higher than the level of 2021.

The Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan has identified the priorities of the transport industry in modernizing the economy and advancing the development of transport infrastructure.

At the new stage of development, the task of transport infrastructure is to provide and serve the qualitatively changed needs of the country’s economy, first of all, we are talking about the innovative potential of transit transportation.

Transit transportation is one of the most profitable types of activity in the transport and communications complex of Kazakhstan. In 2020, transit transportation by rail accounted for only 24.2% of the total volume of transported goods. At the same time, the share of transit in the



structure of total income was 34.3%. The share of transit is 554 million US dollars, or 0.7% of the country's GDP. Overall, the share of transport in the country's GDP is 12.4%.

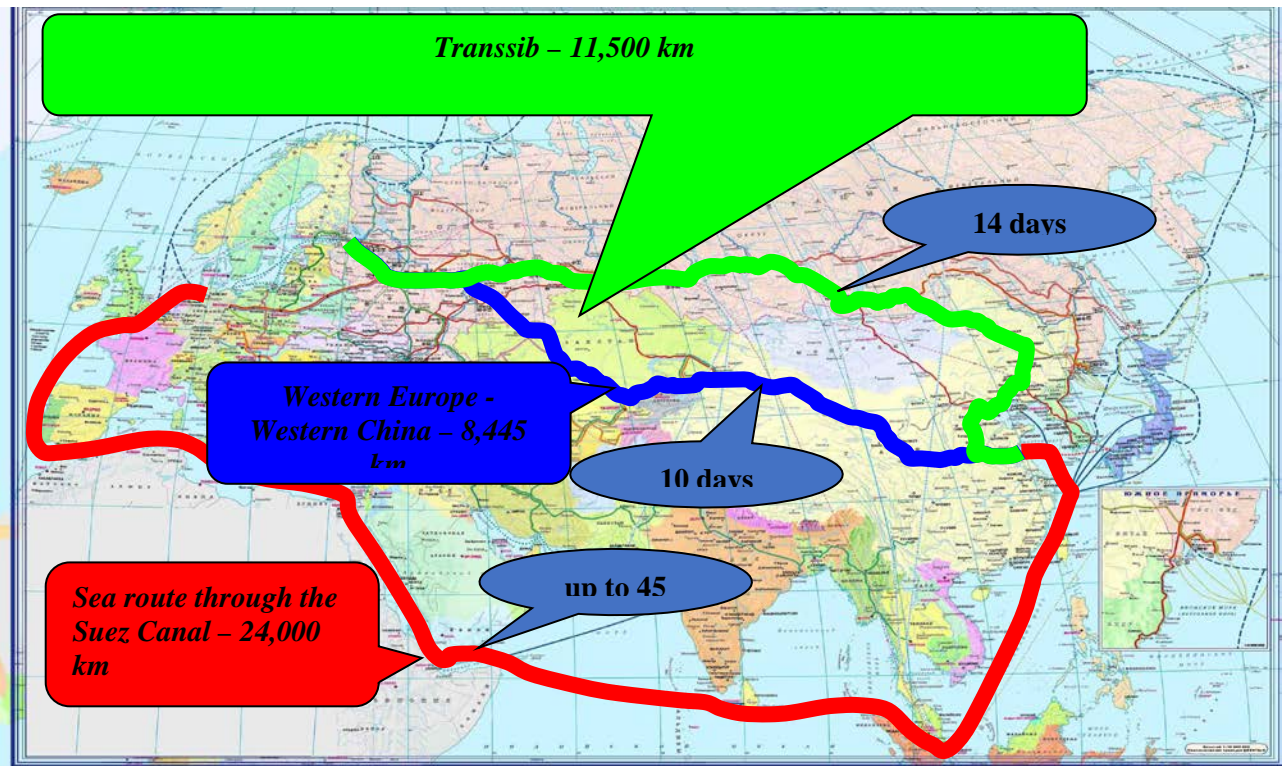
At the same time, the income of transport companies in Kazakhstan from transit has not changed significantly in recent years and reached 554 million US dollars per year, which is only 1% of the total transit market between Europe and Asia. (Trade turnover between Europe and Asia is about 800 billion US dollars per year, while income from transit is estimated at 45 - 53 billion US dollars).

In this regard, “breakthrough” projects are needed to maximize the use of the country’s transit potential.

The project for the development of a new transport corridor “Western Europe - Western China” meets these requirements (see Figure 2). Promotion of the following key areas as part of the development of the country’s transit potential:

- from China to Europe through the territory of Kazakhstan, Russia and Belarus;
- from China to Europe through the Caspian Sea, Azerbaijan, Georgia and Turkey;
- from China to Central Asia and the Gulf countries;
- North-South corridor.

On the new alternative route China-Europe-China, in transit through the Kazakh border station Altynkol, a container train followed through Xi'an-Istanbul-Prague, consisting of 42 forty-foot containers, which covered 8,500 km, passing through the territory of ten countries. The development of innovative technologies available on all transport routes of KTZ makes it possible to maintain the speed of container trains at least 700 km per day, and in certain directions up to 1100 km per day. At the same time, the speed is constantly increasing.



Note: Annual report of JSC NC KTZ Freight transportation for 2022 [3].

Figure 2 - Development of a new transport corridor “Western Europe – Western China”

An innovative change in the structure of transportation leads to a 2-fold increase in the share of transit, and an increase in revenue from transit traffic through rail transport by 1.5 times by 2025. Transfer of low-profit cargo with low profitability to private carriers, and accordingly a

decrease in income from freight transportation to 5% by ≈35 billion tenge and costs to 7% by ≈40 billion tenge by 2025 (Table 3).

Table 3  
Innovative change in the structure of transportation affecting the share of transit

Index	Of the year			
	2021 (billion tkm)	Share,%	2025 (billion tkm)	Share, %
Total	219.9		241.9	
Interior	94.7	43%	95.5	39.5%
Export	76.2	34.6%	72.2	29.8%
Transit	31.5	14.3%	58.1	24%
Import	17.6	8%	16.2	6.7%

Source: Annual report of JSC NC KTZ Freight transportation for 2019 [3].

Next comes the innovative development of railway transport in Kazakhstan, the main problem is that Kazakh enterprises mainly produce spare parts and components for locomotives and cars that are not difficult to process. The Republic of Kazakhstan has developed a program to increase the share of the Kazakh component in the volume of products purchased for the needs of JSC NC KTZ and its subsidiaries for 2020-2022. As a result, railway workers will use 90% of the products of Kazakh enterprises (75% in 2022). Kaztemirtrans JSC (KTT) intends to increase these figures to 80% of the total procurement volume. Currently, manufacturers working on seasonal orders are asking for guarantees to ensure smooth operation.

The work examines the production of more complex (knowledge-intensive) products, replacing the import of equipment with the acquisition of licenses, patents and know-how. Support for innovative development from the railway consists of providing technical specifications, creating joint productions, guaranteed orders, etc. To implement innovative projects, programs such as “business transformation” have been introduced, agreements have been reached between NC KTZ JSC, Science Foundation JSC and JSC National Innovation Fund. KTZ has a scientific and technical council (STC), which deals with the implementation of knowledge-intensive and resource-saving technologies, the proposal and study of innovative projects, the effective use of R&D results in production activities, and the achievement of science. However, the number of innovations accepted and reviewed by the Scientific and Technical Council remains extremely small. KTZ holds an international innovation competition in priority areas, paying special attention to innovation agreed upon at meetings of the Commissions of the Railway Transport Council.

The main locomotive building development projects are concentrated in Kazakhstan at Lokomotiv Kurastyru Zauyty JSC. This enterprise is currently a subsidiary of NC KTZ JSC, and was created as part of the implementation of the State program “Forcing the industrial and innovative development of Kazakhstan”. Cooperation between Kazakhstan and the American company General Electric began in 1995. The American company, after announcing tenders, won this competition, and this led to the conclusion of a new contract in 2013 for the installation of diesel generator sets produced by General Electric during the modernization of diesel locomotives.

The modernization of diesel locomotives according to the American system has interested Russian Railways. The 7FDL diesel generator set (DGS) equipped with an engine, used in the country, showed good results and it was decided to modernize the locomotive fleet.

A further progressive development was the construction of a diesel locomotive assembly plant on the territory of the industrial park in Astana, for the assembly of locomotive components produced at one of the General Electric plants in Erie (USA).

The investment project has the following problems and disadvantages:

1. The 7FDL engine presented by General Electric is a modernized version of the engine for diesel locomotives. Strengthening environmental regulations in the United States has caused a drop in demand in the country for General Electric diesel engines. This contributed to the beginning of the promotion of the company's locomotives and engines in the markets of Europe and Asia.

2. To achieve payback for American locomotives, they must be intensively operated 20 hours a day, but currently diesel locomotives in Kazakhstan operate on average 10-11 hours a day. American locomotives are designed to drive heavy trains, which may not always be formed.

3. The new locomotives have an axle load of 33 tons instead of 23 tons, which is also a problem for the operation of railway infrastructure, which requires modernization and monitoring of tracks.

4. American locomotives are expensive to operate. Thus, in one year of operation of locomotives in Kazakhstan, approximately a five-year supply of spare parts for American engines was used up.

The development of railway infrastructure is one of the important areas of the country. The Republic has a wide network of railway tracks. Railway lines connect Kazakhstan with other countries: 8 with Russia, 1 with Kyrgyzstan, 2 with Uzbekistan and 1 with China.

Kazakhstani railways enter international markets (through the Dostyk station to China, North and South Korea; through the Chingiz station - to Uzbekistan, Turkmenistan; to Turkey - to the Black and Mediterranean Sea; through Russia - to the Baltic Sea, Ukraine, the Caucasus, Europe and Pacific Ocean), which today is the basis for realizing the transit potential of the republic. Despite the condition of the assets, intra-industry problems do not allow them to be used effectively. The current situation does not allow receiving large incomes from transit transportation due to the low level of railways.

The national company KTZ is trying to ensure a high level of use of corridors and increase the volume of transcontinental transit, and create a system for ensuring cargo safety. KTZ increases the level of tracking and location of containers online, which allows you to quickly respond to problems and make decisions. Now innovations have affected the management system for maintenance and repair of rolling stock. If a malfunction occurs, its code is automatically transmitted to the mechanics in the office. This technology opens up new possibilities for maintenance planning. Modern production trends consider the operation of enterprises without storage in a warehouse, that is, on the principle of "on wheels", which reduces warehousing costs. The requirements of the state's transport system, which strives for high performance, largely determine its competitiveness [6].

Modernization of the main railway network and renewal of railway infrastructure are necessary to adapt and operate new types of rolling stock. The development of railway infrastructure will lead to the removal of locomotives and carriages (increasing the weight and speed of trains) by increasing the efficiency of their operation. The development of the railway infrastructure throughput system is achieved through the construction of new roads, heavier rails, and the replacement of wooden sleepers with reinforced concrete products. The innovative development of border crossings is aimed at realizing the country's transit potential and includes modernization and increasing the number of inspection equipment, special observation platforms, and X-ray installations. Customs points must be equipped with equipment for conducting chemical and other types of analysis. Certification bodies must have representative offices at the borders, and border crossings must be staffed with qualified personnel.

Let us give an example of the main innovative trends in the development of railways.

The introduction of the Internet and artificial intelligence technologies to railway tracks and stations is becoming a competitive advantage for the entire industry.

IoT technology sensors can provide a lot of information about the railway: problems with managing and monitoring the vertical movement of tracks and temperature changes that cause trains to derail. Moreover, technological development and transformation of rails and stations into smart rails and smart stations opens effective opportunities for startups and large market players [7].

RFID technology was only used in the retail and consumer goods industries and is now found in all walks of life. An RFID system is an intelligent control and monitoring technology that operates using radio signals from RFID tags. This technological development helps companies track each car, maintain records and protect cargo. In addition, the RFID system provides real-time security checks and updates and monitors temperature [8].

The proliferation of smart rails goes hand in hand with the development of smart yards for the repair and maintenance of railcars and engines, the use of railcar lubricants for smooth engine operation, monitoring of railway tracks, predicting track plate failures and fixing internal combustion components. Smart yards consist of sensors installed on the roadside to collect data from passing railcars.

The growing integration of smart yards will help railways maintain rolling stock and use information data that helps collect information about the condition of rolling stock. An innovative smart shipyard concept is being developed that will monitor rolling stock records and monitor wheel defects, axle temperatures, bearing condition and wheel profile. They also use the information for pre-selection of personnel and objective assessment of faults. The implementation of smart shipyards reduces data processing time while increasing productivity and safety [9].

Improving the intelligent railway level allows for greater attention to the environment and ecologies. Several countries are focusing on developing hydrogen-powered trains as they could enable a new generation of low-carbon transport and rail travel. Low-carbon, zero-emission hydrogen-powered trains are already available in Europe, Asia and now North America [10].

Germany became the first country in the world to launch the first hydrogen-fueled train, the Coradia iLint from French TGV manufacturer Alstom, to support clean technology [11].

Additionally, other countries in North America and Asia have begun investing in zero-emission trains.

The development of hybrid cars is another sustainable trend. Electric cars and electric buses have already entered our lives. Queue for railway transport. In 2018, at the InnoTrans-2021 exhibition, almost all the world's major locomotive manufacturers: Toshiba, Alstom, Gmeinder Lokomotiven GmbH, etc., presented production samples of hybrid models [12].

In a dynamic, rapidly developing global economy, technology helps railways remain relevant: improves safety, maintains competitiveness, and minimizes environmental impact. It is not surprising that the smart railway market will only grow. According to research from MarketsandMarkets, growth of 13.7% is expected between 2020 and 2025.

**Conclusions.** A study of the innovative development of railway transport in the Republic of Kazakhstan allows us to draw the following conclusions.

1. The high wear and tear of rolling stock and railway infrastructure in the region creates not only a desire, but also an urgent need for innovative development, modernization and the introduction of new equipment.

2. Introduction of most innovations in railway transport in companies from developed countries (USA, Germany, Japan, etc.). Products, technology and management experience of developed countries are introduced directly into the economy without undergoing scientific and technological research.

3. Innovative activity in the state comes down to the adoption of foreign innovations, their creative copying, and improvement of the production of modern technology.

4. Russia's role in Kazakhstan's railways continues to determine the directions of innovation activity. This is due to the high level of sales in the market for railway services and transport engineering products, which creates a high demand for innovation, technical and institutional barriers to entry into the railway services market of the “1520 Space”, the need to



coordinate innovations at meetings of the Commissions of the Railway Transport Council and the inclusion of new equipment in the register, the ability to adapt foreign equipment and technology to the conditions of the state.

5. The implementation of basic innovations in Kazakhstan is hampered by the insufficient development of industrial and fundamental science. In Kazakhstan, effective forms have not been found for financing fundamental research; in Kazakhstan, 0.3% has been allocated from the budget for financing science for 2022, this is not enough for the development of science.

Thus, existing innovations in railway transport contribute to the efficient functioning of the logistics network, but cannot solve all the problems at this stage. Constantly changing conditions require modern management to constantly search for and implement new innovations in railway transport and logistics, and develop complex strategies for the development of the company on an innovative basis.

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### **ТЕМІР ЖОЛ ТРАНЗИТТІК КӨЛІГІНІҢ ИННОВАЦИЯЛЫҚ ДАМУЫ**

***Аңдатпа.*** Мақалада Қазақстандағы темір жол транзиттік көлігінің инновациялық дамуы, оның ішінде ішкі, экспорттық-импорттық және транзиттік жүк тасымалдарын басқару қарастырылады. Зерттеу Қазақстанда транзиттік жүк ағындарын тарту үшін заманауи көлік инфрақұрылымын құру қажеттілігін анықтады. Қазіргі уақытта Қазақстан сарапшылары халықаралық тасымалдардың шектелуі, технологиялық дамудың шектелуі, интермодальдық тасымалдардың жеткіліксіз дамуы, көлік-логистикалық қызметтердің төмен деңгейі, көлік құралдарының жеткіліксіз саны және олардың ескірген паркі сияқты проблемаларды атап өтті. Сонымен қатар, дамыған елдерде логистика ЖІӨ-ге елеулі үлес қосады, Қазақстанда ол әлі де төмен деңгейде. Мақалада жаңа жылжымалы құрамды, технологиялық инфрақұрылымның тиімді объектілерін, көлік процестерін басқарудың Зияткерлік жүйелерін және қазақстандық темір жол көлігіндегі басқа да технологиялық

және ұйымдастырушылық инновацияларды енгізу негізінде барлық технологиялық және бизнес-процестердегі түбегейлі өзгерістер қарастырылады. Теміржол көлігінің басты ерекшелігі-бұл сала кәсіпорындардың инновациялық қызметінің қарқыны мен ауқымына әсер етеді, сондықтан теміржолдар инфрақұрылымға жатады және негізінен қызмет көрсетуге бағытталған. Бұл өзгерістердің мақсаты сала кәсіпорындарының бәсекеге қабілеттілігін, олардың тиімділігі мен инвестициялық тартымдылығын арттыру қажеттілігін зерделеу болып табылады. Бұл тұрғыда маңызды және күрделі міндеттердің бірі-Сала кәсіпорындарында инновациялық қызметті дамытуды басқару тәсілдерін әзірлеу. Мемлекеттік басқару органдары транзиттік көліктің инновациялық дамуын басқару, инновациялық белсенділіктің өсуі үшін ішкі және сыртқы жағдайлар жасау үшін теміржол көлігі кәсіпорындарына қатысты ұйымдастырушылық-экономикалық шаралар кешенін қарады.

**Кілт сөздер:** транзиттік тасымалдар, инновация, инфрақұрылым, инновациялық әлеует, көлік дәліздері, логистика, жүк ағындары.

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### **ИННОВАЦИОННОЕ РАЗВИТИЕ ТРАНЗИТНЫХ ПЕРЕВОЗОК НА ЖЕЛЕЗНОДОРОЖНОМ ТРАНСПОРТЕ**

**Аннотация.** В статье рассматривается инновационное развитие железнодорожного транзитного транспорта в Казахстане, в том числе управление внутренними, экспортно-импортными и транзитными грузовыми перевозками. Исследование выявило необходимость создания в Казахстане современной транспортной инфраструктуры для привлечения транзитных грузопотоков. В настоящее время эксперты Казахстана обозначили такие проблемы, как ограниченность международных перевозок, ограниченное технологическое развитие, недостаточно развитые интермодальные перевозки, низкий уровень транспортно-логистических услуг, недостаточное количество транспортных средств и их устаревший парк. Кроме того, в развитых странах логистика вносит существенный вклад в ВВП, в Казахстане она пока находится на низком уровне. В статье рассматриваются принципиальные изменения во всех технологических и бизнес-процессах на основе внедрения нового подвижного состава, эффективных объектов технологической инфраструктуры, интеллектуальных систем управления транспортными процессами и других технологических и организационных инноваций на казахстанском железнодорожном транспорте. Основной особенностью железнодорожного транспорта является то, что эта отрасль влияет на темпы и масштабы инновационной деятельности предприятий, поэтому железные дороги относятся к инфраструктурным и в основном ориентированы на сервис. Целью данных изменений является изучение конкурентоспособности предприятий отрасли, необходимости повышения их эффективности и инвестиционной привлекательности. В этом контексте одной из важнейших и сложных задач является разработка способов управления развитием инновационной деятельности на предприятиях отрасли. Органами государственного управления рассмотрен комплекс организационно-экономических мер в отношении предприятий железнодорожного транспорта для управления инновационным развитием транзитного транспорта, создания внутренних и внешних условий для роста инновационной активности.

**Ключевые слова:** транзитные перевозки, инновация, инфраструктура, инновационный потенциал, транспортные коридоры, логистика, грузовые потоки.