

Article

## The Importance of Using SWOT Analysis in the Implementation of Transformation Processes in Railway Transport

Yermatova Dilnoza Akhmadjanovna<sup>1</sup>

1. Tashkent State Transport University (Tashkent, Uzbekistan)  
Basic doctoral student of the Department of Transport Economics

\* Correspondence: [autor@gmail.com](mailto:autor@gmail.com).

**Abstract:** The implementation of transformation processes aims to enhance enterprise labor productivity, optimize the use of labor and financial resources, and facilitate comprehensive reforms within the organization. This study examines the mechanisms and strategies employed by major railway enterprises, such as Russian Railways, British Railways, and Indian Railways, to improve operational efficiency. By applying tools such as SWOT analysis, the research identifies key areas for efficiency enhancement, including technological advancements, resource optimization, and organizational restructuring. The findings highlight the importance of adopting innovative transformation mechanisms to ensure sustainable growth and competitiveness in the global transport sector. The study underscores the need for enterprises to balance cost-effectiveness with service quality in implementing transformative changes.

**Key words:** transformation, SWOT analysis, Russian Railways, British Railways, Indian Railways, efficiency improvement mechanisms.

**Citation:** Yermatova D.A. The Importance of Using SWOT Analysis in the Implementation of Transformation Processes in Railway Transport. American Journal of Economics and Business Management 2024, 7(12), 1770-1778.

Received: 10<sup>th</sup> Nov 2024

Revised: 20<sup>th</sup> Nov 2024

Accepted: 13<sup>th</sup> Dec 2024

Published: 30<sup>th</sup> Dec 2024



**Copyright:** © 2024 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>)

### Introduction

Railway transport is the basis of modern economy. In this sense, it serves as an object of market relations, the functioning and development of all branches of the economy, enterprises, their associations and complexes depends on their effective activity. Despite the significant contribution to the country's economy, railway transport is experiencing certain difficulties: to date, the problem of moral and physical wear and tear of the main means has not lost its importance. The decrease in the rate of technical development of the main means of railway transport reduces their reliability and the inconsistency between the parameters of the quality of cargo transportation and the competitiveness of road transport in the transport market. In this regard, it is no exaggeration to say that in some sense, the implementation of gradual reform processes in the field of railway transport will help create positive results and in some sense strengthen the competitiveness of the sector. [1]

The process of transformation is a phenomenon that covers all countries in the world equally, whether it is an economically stable and developed country, whether it is economically

backward, whether it includes all the elements of democracy, or whether it is a country with an authoritarian system, this process affects all countries. and nations embrace them in the process. Transformation is a fundamental change of the disease [2]. We can consider implementing such a change not only at the state level, but also in railway transport, which is considered one of its links. At the heart of all such changes is the movement towards the higher peaks of development. One of such changes is that we can consider the economic directions of transformation processes in railway transport.

#### Literature review

The theoretical and practical basis of this scientific work is the fundamental and practical work of local and foreign authors in the field of evaluating the efficiency and quality of the cargo transportation process; researches were conducted on current issues of railway transport activity and development, economic management of production processes, determination of the quality of production and transport services to the population, and planning methodology.

The following foreign scientists conducted research to study the problems of implementation of transformation processes in world practice and to define the main directions of their development: Nguyen Txe An, U.E. Deming, Jakub Majewski, J.M. Juran, K. Ishikawa, F.B. Crosby, F. Taylor, A.W. Feigenbaum, V.A. Shewhart.

The following Asian scientists on the issue of implementation and analysis of transformation processes in railway transport: E.E. Savchenko, A.G. Belova, I.G. Tkachev, F.Z. Karakulov, A.I. Zhdanov, S.V. Gorelsov, M.A. Vignanova N.V. Tereshina, M.F. Trihunkov, A.D. Shishkov, M.Kh. Aldamov, O.O. Mozhgovaya, D.V. It is covered in the scientific works of Agafonov and others.

#### Research methodology

A complex of theoretical and empirical methods of scientific knowledge was used to solve the problems set for scientific research, including: analysis and synthesis, comparison and generalization, abstraction, logical method, systematic and process approaches; and tabular and graphical methods were used to explore and interpret the data.

#### Analysis and result

We use SWOT analysis to positively solve network problems and improve operational efficiency while conducting transformation processes. Currently, the railway transport network has become the main factor of economic development, improvement of the population's well-being and ensuring the national security of the country. Since Uzbekistan is landlocked, the main part of our country's international relations is determined mainly by transport, in particular, by the development of railway transport and the implementation of international transport to Central Asia.

**Table 1. SWOT analysis of JSC "Uzbekistan temir yollari" activity [3]**

Strengths (S)	Weaknesses (W)
1. Full occupancy of the network 2. Reserve capacities in the network 3. Experienced management 4. Access to railways of the CIS countries 5. The harmonization of crossings in the territory of Uzbekistan is increasing, which reduces costs and delays when crossing borders. 6. Improving domestic rail transport infrastructure will benefit international corridors	1. Loss of energy due to the completion of Central Asian railways and the competitive development of new routes. 2. The railway network of the CIS countries was designed to meet the needs of the former USSR, which led to problems after independence 3. Restrictions and infrastructure problems in neighboring countries. 4. Requirement to change wagons to enter large markets

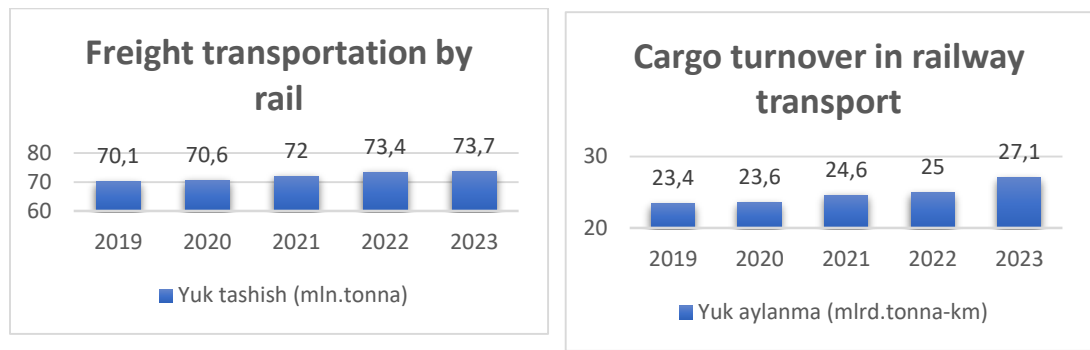
<p>7. Reserve capacities for new transports</p> <p>8. Good relationship with major shippers and consignees</p> <p>9. Certain reserve capacity for new services</p> <p>10. Good coverage of the territory of the republic</p> <p>11. Using the extensive railway network throughout the CIS.</p> <p>12. High competitiveness in transportation of long-distance, especially low-cost goods.</p> <p>13. Wagon tracking system to determine the location of cargo at any time.</p> <p>14. "O'TY" JSC is an experienced operator</p> <p>15. Lower transport costs compared to road transport in the main routes</p> <p>16. Comparative transportation time with the introduction of block trains</p> <p>17. Availability of capacity for expansion.</p> <p>18. Reduces car traffic on borders</p>	<p>5. Formation of tariffs for cargo transportation within the country with the participation of the Ministry of Economy and Finance</p> <p>6. The wagon industry needs modernization</p> <p>7. Limited concentration of marketing research.</p> <p>8. The presence of additional value in transportation causes unsatisfactory service</p> <p>9. The level of service largely depends on the operation of railways in other countries</p> <p>10. Lack of investment in the CIS railway system, resulting in relatively long and unreliable transportation times</p> <p>11. Most problems are external, so it is difficult to solve them</p> <p>12. Monomodality of the transport-forwarding network</p>
<b>Opportunity (O)</b>	<b>Threat (T)</b>
<p>1. Increase operational efficiency by investing in new roads in the region</p> <p>2. Angren-Pop route can attract international transit cargo</p> <p>3. The connection with China through Kyrgyzstan allows for transit and international transportation</p> <p>4. Convenient geographical location for the development of transit transportation</p> <p>5. Investments in the construction of new lines in the region will expand the railway freight market.</p> <p>6. Conclusion of contracts with tourist organizations.</p> <p>7. Development of door-to-door service to reduce overall transportation costs</p> <p>8. Financial incentives for exporting entrepreneurs</p> <p>9. Potential growth in Afghanistan will create a new export and transit market</p>	<p>1. A sharp increase in the prices of imported basic materials and spare parts</p> <p>2. Aging of infrastructure in the network of neighboring countries leads to further limitation of speed</p> <p>3. Due to the high cost of the project, the lack of funds for the construction of the railway through Kyrgyzstan to China</p> <p>4. Increasing domestic competition in the transportation of goods by road transport</p> <p>5. The road reconstruction program will improve the operation of road transport</p> <p>6. Development of local motor transport enterprises and renewal of the motor vehicle fleet will increase competition</p> <p>7. Reduction of passenger flow in favor of private car or air transport</p> <p>8. The program of reconstruction of highways and traffic structure allows to improve intercity bus traffic</p> <p>9. Carrying out transportation at high rates due to raw materials</p>

These opportunities in railway transport:

- Convenient geographical location for the development of transit transportation,
- Development of "door-to-door" service to reduce overall transportation costs,
- Lower transport costs compared to motor transport in the main routes,
- Wagon tracking system to determine the location of the cargo at any time

through (in fact, there are many strong aspects that cancel out the influence) we can see that the volume of cargo transportation and cargo turnover in the country will increase. All

aspects presented in the SWOT analysis have an impact on all types of activities in railway transport. You can see it in the histograms below.



**Figure 1. Freight transportation and cargo turnover in the activities of JSC "Uzbekistan Railways".**

We can see from the picture that the volume of cargo transportation and cargo turnover is increasing over the years. We can see that this indicator increased by 100.4% during January-December 2023 compared to 2022. Cargo turnover increased by 108.4% in 2023 compared to 2022. In 2020, we will see that the indicators have grown somewhat slowly, it should be noted that this was caused by the pandemic. Below we will analyze cargo transportation and cargo circulation in foreign countries.

The changes in the railway system carried out in foreign countries make transformation processes effective. We believe that it is appropriate to carry out the process of learning this experience through SWOT analysis. Mutually effective relations of railway transport market participants are mainly determined by the state's approach to the functional organization of the railway network and railway infrastructure. In the world experience, we can distinguish two main approaches: functional organization and state regulation of the railway network, which are historically connected in the development practice of the network.

The first approach is that railway transport and railway infrastructure are not defined as a socially important sector of the economy, so that the products of the entities in the network do not need to be regulated by the state through tariffs. We can see such cases in Canada, Australia and some states of the USA. In this case, the main regulatory role of the state is primarily focused on creating favorable conditions in the railway infrastructure and ensuring its efficient operation. At the same time, it will not be possible for the state to directly interfere in the tariff activities of infrastructure companies in the railway network.

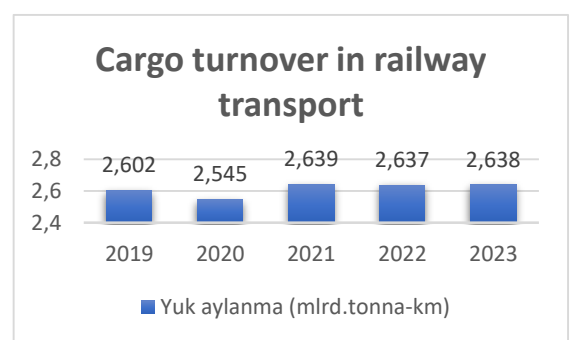
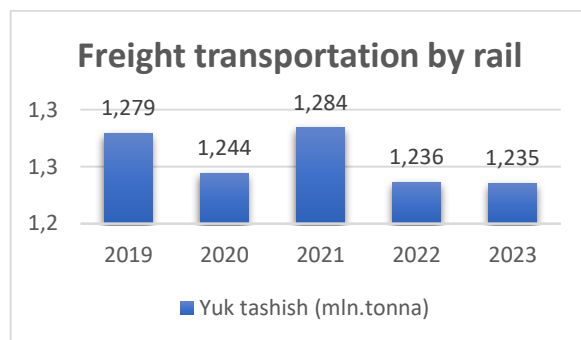
The second approach is widespread, on the contrary, railway transport and railway infrastructure are represented as a socially important sector of the economy and indicate the need for clear systematic state control and intervention in tariff activities. We can introduce such an approach mainly to Germany, Great Britain, the Republic of Kazakhstan, the Russian Federation, and some states of Australia.

The analysis of railways of the Russian Federation is of great importance in studying the processes of transformation of the railway network in foreign countries. Below is an analysis of the railway network of the Russian Federation. (-table)

**Table 2. SWOT analysis of the activities of JSC "Russian Railways" [6]**

Strengths (S)	Weaknesses (W)
Strengths (S) 1. The existence of a flexible business model, which provides an individual approach to each client.	1. Relatively low speed of cargo transportation (mainly for short distances). 2. High cost of short-distance shipping.

<ol style="list-style-type: none"> <li>2. Administrative support (financial and other resources) for the implementation of strategic projects by JSC "Russian Railways".</li> <li>3. Complex decisions on logistics and the formation of the transport base.</li> <li>4. Having highly qualified personnel.</li> <li>5. Availability of a global operational activity management network.</li> <li>6. Availability of a road to the railway infrastructure.</li> <li>7. Low cost of long-distance shipping</li> <li>8. The possibility of transporting large loads.</li> <li>9. In some cases, it is the only alternative way of transportation.</li> <li>10. Availability of state investment support in infrastructure development.</li> <li>11. Having the smallest risk or risk of cargo loss.</li> </ol>	<ol style="list-style-type: none"> <li>3. The lack of loading and unloading points, the impossibility of door-to-door cargo delivery.</li> <li>4. The difficulty of cargo clearance.</li> <li>5. Tariff regulation by the state.</li> <li>6. High competition in the transport-logistics network.</li> </ol>
<b>Opportunities (O)</b>	<b>Threat (T)</b>
<ol style="list-style-type: none"> <li>1. The possibility of developing international trade (mainly on the basis of cargo transportation to Europe and Asia).</li> <li>2. Competitiveness of transportation prices after payment.</li> <li>3. Increase in export operations of railway shippers.</li> <li>4. Availability of demand for logistics services in the market economy.</li> <li>5. Optimization of costs to customers.</li> <li>6. Organization of transit cargo transportation.</li> <li>7. Finding new customers by moving to the segment of railway infrastructure design and logistics consulting for industrial enterprises.</li> <li>8. To ensure the attraction of international customers due to the adoption of transport decisions in the direction of environmental protection.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduction of state support and investment aid due to the economic crisis.</li> <li>2. State investment allocation for the development of highways.</li> <li>3. Decrease in the volume of freight transportation in the logistics market due to the economic crisis.</li> <li>4. Increase of tariffs by the state.</li> <li>5. The risk of non-reimbursement of VAT in international transactions.</li> <li>6. Rising inflation.</li> <li>7. Significant fluctuations of the ruble.</li> </ol>



**Figure 2. Cargo transportation and cargo turnover in the activities of JSC "Russian Railways".**

By analyzing the picture, we can draw the following conclusions:

- In 2020, we see that some of the economic indicators have fallen due to the pandemic in the whole world when viewed in 5-year terms. Shipping is no exception.
- The presence of high competition in the transport-logistics network also had an impact on these indicators. Here we mean automobile transport.
- Another influencing factor is that short-term cargo transportation is not fast and relatively expensive.

We can see that cargo transportation decreased by 3.7% in January-December 2022 compared to 2021. Cargo turnover increased by 100.03% in 2023 compared to 2022.

The country of India also shows a significant trend of economic development in the world. Their population is currently on the verge of rising to the first place among the countries of the world in terms of numbers. However, we will highlight the advantages of the railway system, which is helping these people and stimulating their economy, through a SWOT analysis. By carrying out this analysis, it becomes possible to clearly see the opportunities of Indian railways and the aspects of danger that prevent their development.

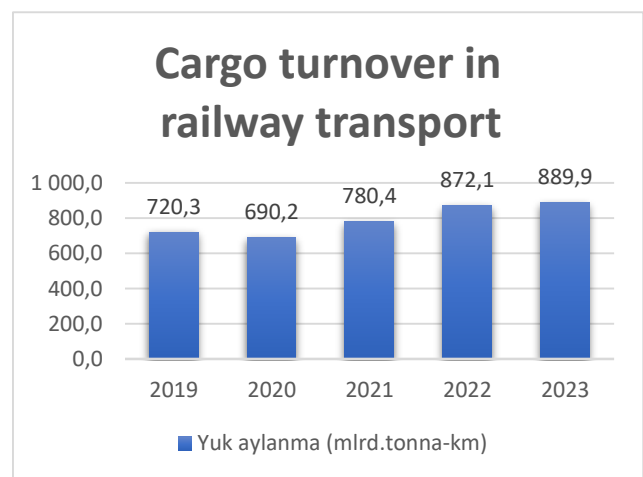
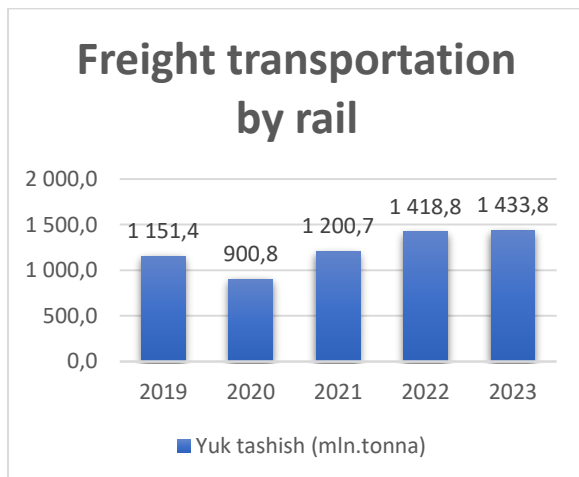
We can see the following issues affecting the development and transformation processes of the railway network in India:

- height of infrastructure value;
- it is not possible to use modeled technologies like developed countries;
- High-speed passenger express trains do not run on standard gauge tracks, they require a different track and this incurs an additional cost.

**Table 3. SWOT analysis of Indian railway transport [5]**

<b>Strengths (S)</b>	<b>Weaknesses (W)</b>
1. The most economical and affordable type of transport for long-distance travel. 2. Prevents road traffic jams and eliminates environmental pollution. 3. The scope of cargo transportation is large. 4. There are low-cost conditions that allow you to transfer to the stations of neighboring countries. 5. Less damage to goods compared to other means of transport. 6. The best connectivity across the length and breadth of India 7. Carries out more efficient transportation of products. 8. 1.5 mln. The employee works in this field. 9. 6 billion in this type of transport. Passengers and 750 million tons of cargo will be delivered to their destination. 10. There are about 120,000 km of railways and about 8,000 stations.	1. The passenger sector is operating at a loss. 2. Crashes and connections make the overall speed worse. 3. Facilities do not meet international standards. 4. Decrease in customer satisfaction. 5. Mutual disagreements reduce efficiency. 6. Management skills are not effective. 7. The workload for highly qualified employees is very large. 8. Poor rehabilitation (financial support from the state)
<b>Opportunities (O)</b>	<b>Threat (T)</b>

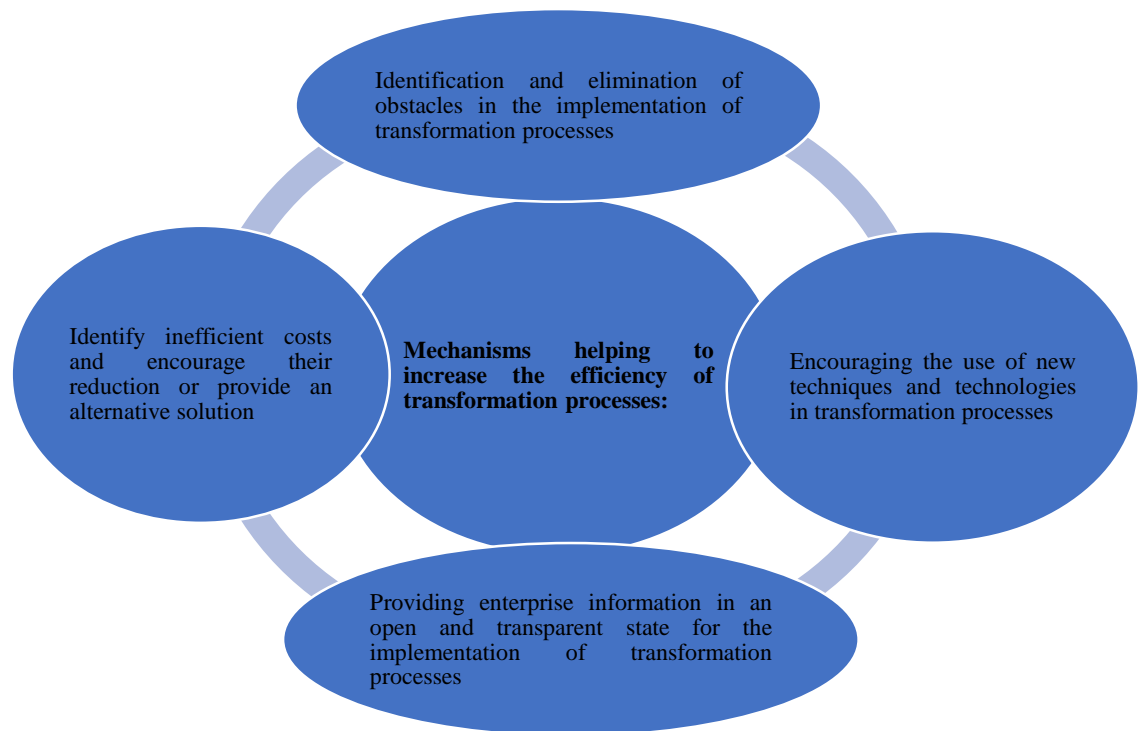
<ol style="list-style-type: none"> <li>1. Increase in electric trains due to Sagarmala project can reduce pollution.</li> <li>2. Improved work ethics can increase profitability by increasing accuracy in the network.</li> <li>3. The expansion of freight volume can improve the revenue from railway freight in the future.</li> <li>4. Hanging billboards on railway cars can increase revenue and reduce the cost of painting cars.</li> <li>5. In the process of transporting passengers, large cargo containers can be added in parallel.</li> <li>6. 70% of the revenue comes mainly from the transportation sector and it has great potential for transportation.</li> <li>7. Negative coefficients have been decreasing in the last 10 years.</li> </ol>	<ol style="list-style-type: none"> <li>1. Increase in the number of vehicles</li> <li>2. The possibility of introduction of two trailer roads.</li> <li>3. High accident risk.</li> <li>4. Air ticket prices decrease.</li> <li>5. Freeways and four-way highways reduce travel time</li> <li>6. Reduce the number of unfortunate events.</li> <li>7. The share in the passenger transportation market is decreasing.</li> <li>8. Limitation of opportunities in demand balancing.</li> </ol>
---	---



**Figure 3. Cargo transportation and cargo circulation in Indian Railways**

From the histogram, we can see that Indian Railways has also been affected by the pandemic in 2020. In 2023, we can see a 106.3% increase in cargo volume compared to 2022. It has been determined that this sector is operating at a loss, considering the increase in the volume of cargo transportation. We can see that cargo turnover increased by 102.04% in 2023 compared to 2022. Facilities in Indian railways do not meet international standards. But in terms of area, there are approximately 120,000 km of railways and about 8,000 stations.

At the same time, we can consider the supporting mechanisms for increasing the efficiency of transformation processes in the following picture:



**Figure 4. Mechanisms helping to increase the efficiency of transformation processes [4]**

Each of these mechanisms has its place and can be described as follows:

- Identifying inefficient costs and encouraging them to be reduced or providing an alternative solution - what does doing this give us? As a result of identifying unnecessary costs and reducing them, we can understand it as the creation of an opportunity to create another unit of additional and quality products.
- Identification and elimination of obstacles in the implementation of transformation processes - the obstacles that cause inconvenience to us can reduce work efficiency. Eliminating it helps to carry out specific systematic work in the process.
- Encouraging the use of new techniques and technologies in the process of transformation - the use of this mechanism will in some sense simplify and speed up the implementation of this process.
- To implement transformation processes, the information of the enterprise is presented in an open and transparent state - as a result of using this mechanism, it is determined in which field the enterprise is failing and how to implement its solution.

#### **Conclusion and recommendations**

If we can bring the unique aspects of the above-mentioned approaches to the railway network of our country, we can expect that by further developing the transport network in our country, it will serve us to carry out transformation processes in a wide scope.

The use of foreign experience is certainly important in the process of development and information exchange. We can make the following conclusions from the processes we have analyzed above:

1. One of the conveniences in the country of Russia is the low cost of transporting goods to distant places and the availability of the possibility of transporting large quantities of goods. At the same time, it is distinguished by the fact that it has the smallest risk of cargo loss. Applying these experiences in our own country will certainly give results.

2. In the experience of Great Britain, there is an obvious aspect: getting advice from world-class highly qualified engineers in the process of signing contracts and the existence of a world-recognized development potential in the technological field related to railway transport.

3. In the country of India, there are low-cost conditions that allow to transfer to the stations of countries that are geographically close and cause less damage to the goods compared to other means of transport.

To make a general conclusion, supporting the experiences of each country in the implementation of transformation processes can give us a special experience and its own results. Therefore, in order to further improve relations between foreign countries, the head of state Sh.M. Mirziyoyev is signing many agreements. This serves to strengthen the country's foreign economic relations.

## References

1. Railways: structure, regulation and competition policy/Organisation de Cooperation et de Developpement Economiques (OECB), 1998
2. Safarov Bahadir O'tkir ugli. State and society relations and their interaction in the process of transformation Oriental Renaissance: Innovative, educational, natural and social sciences VOLUME 1 | ISSUE 3 ISSN 2181-1784 Scientific Journal Impact Factor SJIF 2021: 5.423 JSC "Uzbekistan Temir Yollari" Business plan for 2023
3. Tkachev Ilya Gennadievich. Organizational and economic mechanism for the development of transport systems based on digital technologies 2019 20 p.
4. <https://www.smallcase.com/blog/complete-guide-to-indian-railway-sector-and-top-railway-stocks-in-india-2023-25sep23/>
5. The G20: a destination for a billion tons of cargo | 1520 International
6. [https://www.railway.uz/uz/gazhk/struktura\\_kompanii/organizatsionnaya\\_struktura/](https://www.railway.uz/uz/gazhk/struktura_kompanii/organizatsionnaya_struktura/)
7. Vokhidova, M.K., Abdullaeva, A.R. (2024). Directions of Trade Relations of Uzbekistan with the Countries of Central Asia. In: Sergi, B.S., Popkova, E.G., Ostrovskaya, A.A., Chursin, A.A., Ragulina, Y.V. (eds) Ecological Footprint of the Modern Economy and the Ways to Reduce It. Advances in Science, Technology & Innovation. Springer, Cham. [https://doi.org/10.1007/978-3-031-49711-7\\_76](https://doi.org/10.1007/978-3-031-49711-7_76)
8. Umurzakov, B., & Vohidova, M. (2017). The need to create economic integration in Central Asia. Journal of Legal Studies, 6(2017), 54-69.
9. Vokhidova, M., & Yuanis, Y. (2020). Development of Transboundary Trade and Economic Relations in Central Asia: Challenges and Solutions. Indonesian Journal of Law and Economics Review, 6, 10.21070/ijler.2020.V6.93. <https://doi.org/10.21070/ijler.2020.V6.93>
10. Khasanovna VM (2020) Development of transboundary trade and economic relations in Central Asia. Central Asian J Innov Tour Manag Finan 1(4):24–34
11. Vokhidova MX (2021) Characteristics of foreign economic relations of Central Asian countries. J Innov Econ 4(9):82–95
12. Умрзаков Баходир Хамидович, & Вахидова Мехри Хасановна (2016). Узбекистан: важные шаги на пути интеграции. European journal of economics and management sciences, (1), 43-45.
13. Вохидова, М. Х., БИЗНЕС, И., & ЎЗАРО, Б. Экономика и финансы (Узбекистан). 2020. № 2 (134). URL: <https://cyberleninka.ru/article/n/biznes-innovatsionrivozhlanish-va-ra-amli-i-tisodiyotning-zaro-bo-li-ligi> (дата обращения: 08.06. 2022).
14. Voxidova, M. (2023). TRANSPORT POSSIBILITIES OF CENTRAL ASIAN COUNTRIES. Iqtisodiyot va ta'lim, 24(6), 224-229.
15. Kadirova Zulaykho Abduhalimovna, & Gazieva Sulkhiya Saidmashrafovna (2022). INTERNATIONAL LABOR MIGRATION PROCESSES IN THE CONTEXT OF DIGITALIZATION. Journal of marketing, business and management, 1 (1), 76-84.