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To cite this article: A A Gibadullin *et al* 2020 *IOP Conf. Ser.: Mater. Sci. Eng.* **918** 012231

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Analysis and digital transformation of the transport sector of the Eurasian Economic Union

A A Gibadullin¹, D E Morkovkin², I I Hutarava³, P V Stroev² and O V Pivovarova²

¹State University of Management, 99, Ryazan Avenue, Moscow, 109542, Russia

²Financial University under the Government of the Russian Federation, 49, Leningradsky avenue, Moscow, 125993, Russia

³Belarusian State University, 4, Nezavisimosti Avenue, Minsk, 220030, Belarus

E-mail: 11117899@mail.ru

Abstract. The presented study is devoted to the assessment of the transport complex of the Eurasian Economic Union and the formation of conditions for its digital transformation. As part of the work done, it was revealed that the transport complexes of the member states of the Eurasian Economic Union were created during the period of centralized government and directive planning of the transport industry. The analyzed indicators of the transport system of the Union showed an increase in the volume traffic. At the same time, it was found in the work that further convergence of transport complexes is required to increase the efficiency of the supranational transport industry. The study proposed a model of digital transformation of the transport complex of the Eurasian Economic Union, which will ensure further convergence of the transport industry and increase the efficiency of the entire supranational complex.

1. Introduction

The transport system is an integrated complex of infrastructure enterprises that provide transportation of goods and passengers, storage and movement of goods, and ensure the functioning of auxiliary devices of the transport complex [1-3]. The transport system began to be created several hundred years ago, when there was a need to transport goods from one settlement to another, it became necessary to move a person over long distances and store materials in isolated areas. Of course, during this period, the transport complex was still in its infancy, and the borders and directions of its development were being formed. In modern times, the transport complex is considered as an indispensable component of any state, industrial enterprise, individual company and even a person [4-6]. To date, new types of transport have been created in the transport industry, which are already based on the use of new technologies that allow for the efficient transfer of goods from one point to another; among these types, pipeline transport, air, water, transport systems for the transfer of unique goods, space transport, pneumatic transport and other modes of transport [7].

However, with the development of new modes of transport, traditional modes of transport that carry goods and passengers continue to develop. Such development is associated with the creation of new transport complexes, the opening of new corridors for the transportation of goods and the movement of passengers and the development of new warehousing and storage points for goods [8-10]. The creation of new transport corridors is mainly associated with the opening of borders for the movement of goods by any possible means on the territory of other states in order to increase the volume of trade and create new interstate ties, including in the transport complex [11]. The increase in



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interstate passenger traffic and the volume of cargo transportation is mainly due to the emergence of new relations between states. In the Russian Federation has been establishing new interstate relations, and even taking part in the creation of unions, the last of which was the Eurasian Economic Union of the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Republic of Kyrgyzstan and the Russian Federation [12-14]. The creation of such an integration bloc gives some changes that give the member states of the Eurasian Economic Union an additional incentive for development. In this regard, we will analyze the volumes of cargo and passenger traffic in the member states of the Eurasian Economic Union, and offer recommendations on the possible development of a supranational transport system.

2. Materials and methods

The purpose of the study is to evaluate the transport complex of the Eurasian Economic Union and search for mechanisms to ensure the supranational development of the transport complex. The following tasks were set in the work:

- Conduct an analysis of the transport complex of the Eurasian Economic Union;
- To propose mechanisms for supranational development of the transport complex of the Eurasian Economic Union.

The study was based on the use of open data, as well as on general scientific methods and approaches, which made it possible to reveal the goal of the study.

3. Results

The formation of the Eurasian Economic Union began in the last century, however, the first significant results were achieved only in the 2000s, when a free trade zone was created and the free flow of goods and services between states began. In 2014, the Eurasian Economic Union completed the current stage of formation, and today it unites five states, which until recently had developed according to policy plans, and there was a centralized management of territories. Today, the Eurasian Economic Union represents an integration group in which the free movement of goods and services, the flow of labor and capital are carried out. Of course, the indicated activity cannot be imagined without steadily functioning transport routes along which the constant movement of goods and services is carried out [15-17].

Transport systems in the member states of the Eurasian Economic Union developed according to common requirements, for example, in these cities, roads were built connecting the neighboring countries and republics, railways that can carry goods for thousands of kilometers. In almost all countries, interstate power lines, pipelines were built, large airports and transport hubs were built.

Let us analyze the transportation of goods and passengers within the framework of the Eurasian Economic Union to determine the development of a supranational transport complex (table 1) [18].

Table 1. Freight, million tons.

State	Armenia	Belarus	Kazakhstan	Kyrgyzstan	Russia
2014	10.2	467.5	3749.8	28.9	8006.2
2015	11	447.1	3733.8	29.7	7898.2
2016	20.4	417.7	3729.2	31.2	7953.9
2017	28.1	439.5	3946.1	31.9	8072.6
2018	29.2	455.6	4103.7	33	8265.1

The table shows that the volume of cargo transportation in Armenia almost tripled, a slight increase is observed in Kazakhstan, Kyrgyzstan and Russia, and a decrease in the Republic of Belarus. The increase in cargo transportation may be because in 2014 the Republic of Armenia joined the Eurasian Economic Union, thereby increasing the volume of import and export of products through the territory of the Russian Federation to the territory of the Republic of Belarus, the Republic of Kazakhstan and the Republic of Kyrgyzstan.

Further, it is advisable to consider the volume of passenger flows in each state of the Eurasian Economic Union (table 2) [18].

Table 2. Passenger turnover by means of transport, billions of passenger-kilometers.

State	Armenia	Belarus	Kazakhstan	Kyrgyzstan	Russia
2014	3	25.1	247	10.8	556.2
2015	2.5	24.1	251.3	11	530.1
2016	2.6	24	266.8	11.3	519.8
2017	2.7	24.9	273.2	12.3	560.6
2018	2.5	25.8	281.5	12.5	594

The table indicates that passenger traffic in the Republic of Belarus, the Republic of Kazakhstan, the Republic of Kyrgyzstan and the Russian Federation is increasing, while in the Republic of Armenia it is decreasing.

Thus, in general, it can be noted that the transport complex of the member states of the Eurasian Economic Union is quite developed, their further development and increase in traffic volumes occur. Consider the volume of trade between member states of the Eurasian Economic Union (table 3) [18].

Table 3. Volumes of mutual trade in goods, millions of US dollars.

State	2014	2015	2016	2017	2018
Armenia - Belarus	38.3	34.6	35.4	41.6	49.4
Armenia - Kazakhstan	7.3	4.9	5.5	10.5	14.7
Belarus - Kazakhstan	940.8	578.6	411.2	693.5	888.6
Belarus - Kyrgyzstan	95.3	61	52	130.5	132.5
Kazakhstan - Kyrgyzstan	1206	756	703	785	927
Kazakhstan - Russia	20196	15413	13005	17104	18321
Kyrgyzstan - Armenia	0.5	0.5	1	1.9	1.1
Kyrgyzstan - Russia	1859	1467	1211	1665	1996
Russia - Armenia	1397	1299	1337	1804	2017
Russia - Belarus	37374	26003	26199	32475	35914
EAEU	63113	45615	42960	54712	60262

The table shows that trade between individual member states of the Union is increasing, and between some, it is decreasing. In general, the volume of mutual trade in the Union has decreased; however, if we consider the change in the exchange rate of national currencies relative to the US dollar, then we can say that this indicator increased significantly [19-21].

Thus, we see that, in general, the transport complex of the Eurasian Economic Union is developing and increasing commodity circulation and passenger turnover. However, the supranational transport complex requires further development, convergence and the transition to new technologies [22].

4. Discussion

Today, digital technologies penetrate into all spheres of activity, which provide increased production efficiency, reduced costs types of activities, improved business processes and other areas that can improve the qualitative and quantitative characteristics of production. The formation of a system associated with the convergence of transport complexes and ensuring further development can be represented in the form of the following model (figure 1) [23-26].

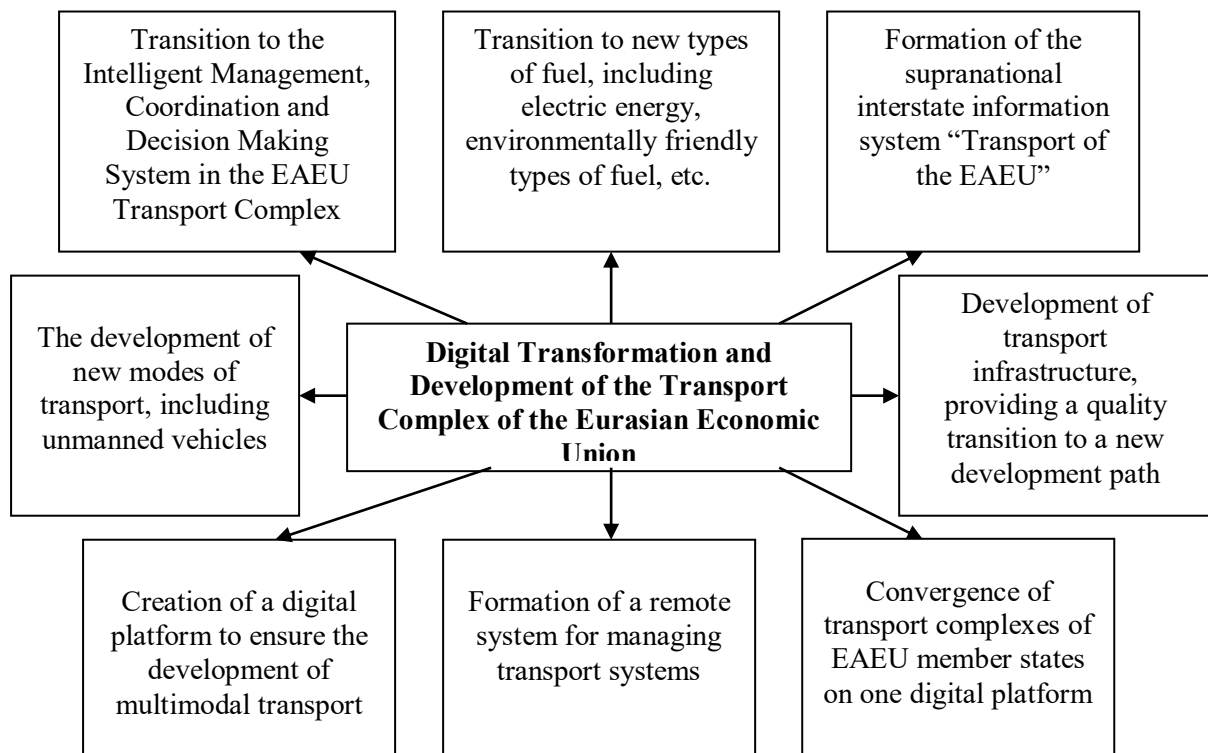


Figure 1. Digital transformation model and the development of the transport complex of the Eurasian Economic Union.

It can be seen from the presented model that it is advisable to carry out the digital transformation and development of the transport complex based on phased convergence of the transport systems of the EAEU member states, creating a unified information platform that will ensure the development of the transport complex of the Eurasian Economic Union.

5. Conclusion

Thus, a study on the analysis of the transport complex of the Eurasian Economic Union showed that, in general, transport complexes are developing and increasing the volume of freight and passenger traffic. At the same time, the transport complex of the Eurasian Economic Union requires further development and convergence in order to achieve a common synergistic effect. In order to ensure sustainable development of the transport complex, a model of digital transformation and development of the transport complex of the Eurasian Economic Union was proposed.

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