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# DIRECTIONS, CONDITIONS, AND RISKS OF IMPLEMENTATION OF THE TRANSPORT MEGA-PROJECTS “NORTH-SOUTH” AND “EAST-WEST” UNDER THE NEW GEOPOLITICAL REALITIES

**ABSTRACT.** The paper discusses the prospect of the development of Russia’s transport infrastructure mega-projects in the context of the Eurasian Economic Union and the Shanghai Cooperation Organization formation. The paper focuses on the country’s interests in the area of influence of the Silk and the Tea Roads. Economic cooperation with the countries of the Asia-Pacific region on the Trans-Siberian Railway-Mongolia-China direction, with diversification of transport routes to all four oceans and five continents, is the most effective policy for Russia.

**KEY WORDS:** directions East-West and North-South, sanctions, environmental management, transboundary rivers, water conflicts, desertification, Northern Sea Route, Trans-Siberian Railway, food safety, high-speed road, minimizing risk, transit countries, the northern corridor.

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## INTRODUCTION

Modern geopolitical and economic situation dramatically changes the whole system of traditional relations in the triangle “Europe-United States-East.” In the conditions of globalization, all countries striving to join the ranks of world leaders are actively using the benefits of their geographical location and creating new economic and political blocks. A not-too-long-ago unipolar world is becoming increasingly differentiated according to the territorial concerns of the countries.

Recent events associated with Crimea’s reintegration into Russia and Western sanctions against our country, served as a

catalyst for new integration processes. In a relatively short historical period, Russia became an active member of the Shanghai Cooperation Organization (SCO), BRICS, and the Eurasian Economic Union. With the entry into SCO of India and Pakistan member-states, the organization brought together about half the world’s population and more than 60 % of the territory of Europe and Asia, significantly surpassing the United States and the European Union in the aggregate GDP.

It is crucial to note that SCO’s expansion also essentially changes geographic vectors of development of its members. There is a potential to access the Indian Ocean with

its vast market for goods, sources of raw materials, and labor resources [Akimov et al., 2015].

However, all cooperation projects should be provided with the necessary calculations and mechanisms and, above all, have a common economic space. Especially important is this factor for Russia with its significant area of underdeveloped territories. It is no accident that transport costs account for at least 20 % of Russia's GDP. In China, this figure does not exceed 15 %, and in EU – 5.7 %. In the CIS countries, the length of roads per thousand sq km is 456 km in Belarus, 280 km in Ukraine, 276 km in Moldova, 193 km in Uzbekistan, 120 km in Turkmenistan, 92 km in Kirghizia, 57 km in Russia, and 34 km in Kazakhstan.

Regardless of the length of the road network and the volume of traffic, the formula “speed, safety, cost,” remains constant in the transport economy, which is primarily determined by the interests of the producer and the recipient of the goods.

### THE NEW “GREAT SILK ROAD”

The famous Chinese expression says: “if you want to be rich – build roads.” Therefore, China's leadership in recent years embarked on a new project of the Great Silk Road, which was traveled by ancient caravans from Europe to China. Effectively, it is about creating a system of global trade routes in the interests of the Chinese economy. In 2014–2015, the volume of transit cargo in the direction China-Europe-China increased twofold, and the transportation of goods by rail will increase in 2020 by a factor of 1.6 compared to 2015.

Today, China is the main trading partner for 123 countries of the world. For comparison, the US has such relations with only 64 countries. The bulk of Chinese cargo is transported by sea (90 %), which is the most economical but it significantly increases the time of delivery. Meanwhile, in the age of globalization,

products with minimal delivery times have competitive advantages, which can only be achieved through the use of modern aviation, road, and rail transport.

For the Asia-Pacific region countries the shortest route for transport of goods to Europe is through Russia and Kazakhstan. At various events and at the highest level, various options for construction of transit roads crossing the country are being discussed [Akimov et al., 2015; Zheleznyakov et al., 2011; Cui Weihong et al., 2014].

Historically, the Great Silk Road, described as far back as in Marco Polo's works, passed from Europe through Persia, south of the Caspian Sea, and in the south of Central Asia. Modern political and economic conditions and armed conflicts in these countries practically nullify the probability of existence of large-scale transit traffic and especially the organization of cargo hubs. Therefore, the Chinese authorities adopted a project to implement the road construction project from China to Europe via Kazakhstan, Russia to St Petersburg, and with branches to Belarus. From China's borders, its length along the western route will be 8,445 km. It would take 10 days for heavy trucks to cover this distance, which is almost 1.5 times faster than by rail and more than four times faster than by sea. A large part of Kazakhstan's tracks of 2,787 km has been already functioning.

The Russian part of the road “Western Europe-Western China,” with the cost of about \$US 6 bln, has a length of 1,956 km from the Kazakhstan border. The construction company for the project “Russian Holding Company” plans to launch the entire route in 2019. This route by-passes the central part of Russia and has direct access to Belarus, which significantly shortens the path to Europe with regard to the transit of goods, compared to St. Petersburg's route. In addition, it is possible to transfer part of transit cargo to the Caspian and Black Sea ports, located on the sea routes to southern Europe, the Mediterranean countries, and the Persian Gulf.

Construction of this road is focused primarily on the development of central and western China, especially Xinjiang Uygur Autonomous Region, which produces a GDP comparable to the volumes of all products in Kazakstan. It is clear that in this case, transport of goods to European consumers with transshipment through the East China ports are not very profitable.

The greatest prospects in the development of trade relations between East and West are associated with the rail [Zheleznyakov et al., 2011]. In this sphere, China holds a leading position in the world. Suffice it to say that today China has 120,000 km of railways occupying the second place after the United States (Russia has 88,000 km). China is the world leader in the length of electrified roads (50,000 km) (Russia and Germany have 43,000 km and 21,000 km, respectively) (<http://moscowbeijing.ru/ru/>).

High-speed delivery of containerized cargoes from one of China's largest cities Chongqing to Duisburg, in western Germany, has been in operation for nearly two years (in total, 26 major Chinese cities have trade relations with Western Europe). During this time, more than 600 trains, each with 41 supsize containers, covered the distance of 5,430 km in 5.5 days, setting the absolute record of rail freight. China has 22,000 km of high-speed roads and, in the next 5 years, plans to build another 11,000 km, which will link 80 major Chinese cities. In the end, a passenger will be able to get from Beijing to either end of the country in less than 10 hours. If the way from Beijing to Shanghai (1,200 km), in the 1980s, took almost one and a half days, after the completion in 2011 of the new road, it will only take 4.5 hours to move between the major Chinese agglomerations.

Therefore, the interest of China in participations in the construction of high-speed railways to transport goods to Europe is understandable. However, unlike roads, railway lines and the more so high-speed railways require much greater cost for the construction of rolling

stock and new tracks that have different gauge in China and Europe. From this point of view, it is economically feasible to use existing railways and upgrade them to meet the current requirements. According to the information from Chinese colleagues, the financing of high-speed roads is classified as long-term investments that cannot be recovered in a short time, even for the transport of passengers between the cities with a million-plus population. Therefore, their construction is most often determined not so much by economic considerations but by many other factors, like the Olympic Games in Sochi and the Student Games in Kazan. Even high-speed road Moscow-Kazan is unlikely to be profitable in the nearest future and can be regarded more as a satellite project for the organization of the upcoming FIFA 2018 World Cup.

Despite the nearing completion of the construction of highway "Western China-Western Europe," countries geographically remote from the Great Silk Road take interest in participating in the project. For example, scientists from over 30 countries, including Kenya and Egypt, participated in the November 2016 meeting of heads of academies of sciences of the countries in the zone of influence of the Silk Road. At the same time, the political interests of individual countries clearly outweigh the economic calculations. Representatives of the Baltic States, Azerbaijan, etc., have been repeatedly participating in international economic forums in Astana, where they discussed the participation projects in the transit of Chinese goods without taking into account Russia's interests.

For example, Ukraine has already started a pilot project for transport of goods to China via the Black Sea, Georgia, and Azerbaijan. On this route, Ukrainian containers must pass several customs and transshipment to two ferries and change to the European-standard gauge. Even according to "Ukrainian Railways" [<http://www.uz.gov.ua/>], the cost of transporting one container

is \$US 7,927, while the cost across Russia is \$US 4,110. Besides, the ferry routes across the Caspian Sea are overloaded by existing cargo-and-passenger flows. A certain alternative to such proposals may be the implementation of a fundamentally new project by the Ministry of Transport of the Russian Federation on the construction of the railway with a 1,520 mm gauge to Bratislava and Vienna. However, the realization of this project requires Russia-Ukraine fence-mending, so it is likely to be put off to a distant future.

In the search for new partners, China also considers the southern route of the Great Silk Road with access to the Persian Gulf. The Chinese participants of the 33rd International Geographical Congress, held in Beijing in August 2016, discussed the location of this route to the south of the Caspian Sea through Turkey to Europe, which excludes any participation of Russia.

### THE INTERNATIONAL TRANSPORT CORRIDOR "NORTH-SOUTH"

In this context, the development of the international transport corridor "North – South," which would intercept part of transit goods of westerly direction and, in turn, provide access to the Indian Ocean, has a special importance. And Russia could become the only country in the world that has access to the four oceans and five continents [Golubchikov et al., 2012; Cui Weihong et al., 2014].

In general, such a path represents a multi-modal route of transportation of passengers and cargo with a total length of 7,200 km from St. Petersburg to the port of Mumbai (India). The basis of this project is the Inter-Governmental Agreement on International Transport Corridor "North – South," signed by Russia, India, and Iran in St. Petersburg (September 12, 2000) at the 2nd International Euro-Asian Conference on Transport. Later this agreement was joined by Belarus, Kazakhstan, Oman, Tajikistan, Azerbaijan, Armenia, Syria, Bulgaria, Turkey, and Ukraine.

Currently, part of the said corridor includes routes from Finland, with branches to Astrakhan and Novorossiysk, a latitudinal route Yekaterinburg-Belarus-Warsaw-Berlin, river transport systems of the Volga and the Don, including channels to the Baltic Sea and the White Sea, and the Caspian Sea ports. A large part of the route runs via the Russian southbound railways and continues to the Caspian Sea. An alternative to sea transport may be the construction of the railway on the western coast of the Caspian Sea (Qazvin-Rasht-Astara) and along the eastern shore of the Caspian Sea (677 km) through Kazakhstan, Turkmenistan, and Iran.

Unfortunately, at the present time due to the small volume and multiple cargo transshipments, this corridor is unprofitable and mostly works for the transport of goods in one direction – from India to Russia. Nevertheless, precisely this corridor is the shortest way to a huge market of goods in India, to the raw material sources of African countries, and to the richest financial resources of the Persian Gulf. In contrast to the maritime transport through the Suez Canal, this transport corridor reduces the length and cost of container transportation more than twofold.

### THE DEVELOPMENT OF THE NORTHERN SEA ROUTE

Among the most important Russian transport priorities is the development of the Northern Sea Route (NSR) which is, as climate warms up, could become a real competitor for transport through the Panama and Suez Canals. For example, the distance between Hamburg and Yokohama via NSR is 6,920 km, which is almost 4,000 km shorter than the path through the Suez Canal and the 7,000 km shorter than going around the African continent.

Global warming rapidly reduces the area of ice cover in the Arctic. For Russia, the expansion of the Arctic traffic zone means that the transit routes from Asia to Europe can move significantly further north of the

Russian waters, into international waters. Because of the spherical geometry laws, under progressive melting of ice cover of the Arctic, transit vessels will seek routes closer to the pole. The length of the coastal route from Murmansk to the Bering Strait is 3,500 mi, while the high-latitude routes are 500 mi shorter, and the shortest orthodromic route is less than 2,700 mi. Far from the mainland, there is no need for pilotage and vessels can move without draught limitations. Thus, with the reduction of ice cover, the main Northern Sea Route will shift to the pole, and eventually Russia may completely lose control over NSR.

Therefore, many experts suggest denouncing the 1982 The United Nations Convention on the Law of the Sea and returning to the principle of the sectoral division of the Arctic, which brings Russia's Arctic geopolitics closer to the position of Canada, Denmark, and Norway. It is necessary to undertake all possible measures to ensure that the maritime border in the Russian Arctic passes through the meridians of the northernmost and the easternmost geographic locations of Russia converging at the North Pole. This will include all the inland seas, territorial waters, exclusive economic zone, continental shelf, as well as international waters near the poles. In this case, all the NSR routes will pass in the waters subject to the jurisdiction of the Russian law.

#### OTHER "EAST-WEST" ROUTES

To some extent, this option reduces the strategic importance of the Trans-Siberian Railway. This consideration calls for strengthening of other East-West transport projects with a strategic priority for Russia. From this point of view, the Memorandum of Understanding between the Russian Federation, the People's Republic of China, and Mongolia to develop programs to create economic corridor China-Mongolia-Russia, signed by the heads of state in Ufa (July 9, 1915), is fundamentally important.

The aim of this program is to provide conditions for the development and

expansion of tripartite cooperation between the states through the implementation of joint projects aimed at increasing the trade, ensuring the competitiveness of products, and facilitating cross-border transport infrastructure. By analogy with the Great Silk Road, the proposed economic corridor transforms the ancient Tea Road, with its capital in merchant Kyakhta.

The first item in the list of the Program for the creation of the Northern Economic Corridor in China is a position on comprehensive modernization and development of the Central Railway Corridor (Tianjin-Beijing-Erlian-Ulan Bator-Ulan-Ude) with a total length of 2,200 km, including the study of the economic feasibility of the construction of the second track and electrification. There is also a consideration for the construction of the western (with access to Tuva) and eastern (in Choibalsan-Zabaykalsk) railway corridors and of a high-speed railway Moscow-Beijing via Mongolia.

To date, test freight trucking across the two borders has already taken place. The new route does not require cargo transshipment and additional clearance of customs documents; the length of the path from the south of China to the European part of Russia has decreased by 1,400 km and the travel time has decreased to four days. According to calculations by the Federal State Institution "Agency of Automobile Transport" (the FSI "Rosavtotrans"), by 2020, freight traffic on this route will increase by 17–20%, which corresponds to the average annual increase in the volume of trade between Russia and China. It is also important that the existing transportation is effective in both directions.

In implementing this Memorandum, Mongolia is becoming a key player in the transit of goods from China to Europe, and this is equally of interest to all its participants. During the construction of railways through Mongolia, the high-priority issues are the width of the track and the organization of a logistics center. Chinese participants suggest the construction of a through narrow-gauge up to the Russian border, which does not quite satisfy

the Russian side. A logistics center in Ulan Bator is the most probable option and it satisfies all stakeholders, and especially Russia, which would be able to transport and handle a significant volume of cargo coming from the Asia-Pacific region, through the Trans-Siberian Railway.

In addition to growth of rail and road transport, the construction of main transit gas pipeline to China through Mongolia has been proposed along with the increase in the capacity of the electricity transmission line. This would create favorable conditions for gasification and electrification of the main industrial centers of Mongolia and especially of its capital Ulan Bator. In addition to solving socio-economic problems, it would be possible to “pull the plug” on the construction of hydropower plants on the Selenga, and thereby to eliminate the emerging environmental threats to the ecosystem in the Lake Baikal basin, which would inevitably arise when hydrological regime on the main tributary of Lake Baikal changes.

### CONCLUDING REMARKS

Regardless of the choice of direction of railways and throughways, there are certain conditions to increase their effectiveness.

First of all, the economies of all the transit areas for transport of goods and passengers would improve through the creation of industrial clusters, transportation hubs, and other employment centers. It is impossible to agree with the opinion of Stolypin’s opponents [Strukov, 2012] who argued that the Amur railway is a “road to nowhere.” Indeed, Siberia and the Far East at that time represented a vast empty space with a sparse population. But one could only imagine the way Asian Russia would develop had the construction of the through Trans-Siberian Railway been postponed for better times, on the advice of such “well-wishers.”

Another condition for raising the efficiency of the main ways is to provide a counter-flow transit between two endpoints. Now, the volume of transit traffic from Asia to Europe

through the territory of Russia is exactly two times the volume of traffic in the opposite direction, i.e., half of the units move to the east unloaded, which has a negative impact on the producer price policy.

In a market economy, pricing is largely determined by the level of industry competition. For this reason, the real competition to rail transport is road transport. The construction of oil and gas pipelines will greatly reduce the volume of oil transport, which once made up almost half the volume of railway cargo, which makes railroads reduce the nomenclature and increase the cost of transport services. Today, the government has practically distanced itself from the pricing in strategic infrastructure development; however, the situation must be considered in all federal and regional economic programs.

The suggested options for the development of Russia’s transport industry allow for diversification of the transport of goods and passengers in all strategic directions. At the same time, it is not about competition between the main transport ways but mostly about achieving the synergistic transport effect, increasing strength of the Russian State.

### PROPOSALS AND SUMMARY

1. The most important wealth of the Russian state is its territory as a legacy of past generations; its preservation and improvement have priority.
2. For Russia with its vast territory and the latitudinal expanse, the solution of transport and logistical problems is a defining condition of sustainable development of regions, primarily located in the Asian part of Russia, preserving the country’s territorial integrity with the ultimate goal of becoming one of the world’s geo-political leaders.
3. In the context of globalization and rapid development of the world political and economic processes, Russia should have a diversified transport system, ensuring its interests in all strategic directions.

4. The construction of transport infrastructure is not an end in itself, but the development of the regional economy and creation of a cumulative effect for Russia's strength.
5. A necessary condition for improving the efficiency of the economy is the search for the common benefits of competing means of transportation and directions and the organization of counter cargo-and-passenger flows in the interests of individual companies and the entire country.
6. In the context of Western sanctions, for the Russian economy it is essential to diversify and increase the foreign east and south trade relations, where new transnational financial centers are emerging.
7. Global warming and the existing conflicts in the eastern and southern borders of the European Union increase the importance of the Northern Sea Route as the shortest shipping route between the ports of Asia-Pacific and Western Europe. ■

## REFERENCES

1. Akimov T.K., Aliyeva N., Badenkov Yu.P., Beldey V.A., Bessarabov G.D., Borovikov S.E., Wasserman A.A., Gavrilov D.A., Golubchikov Yu.N., Grigoriev S.E., Eolkin S.V., Zheleznyakov A.S., Zabello Ya.Yu., Kazantsev E.K., Latynov N.N., Malyshev A.A., Myasnikov A.V., Pak M.K., Panfilova V.V., Pereslegin S.B., Plyusnin Yu.M., Pakhimov K.K., Rudashevsky V.d., Ryskulov D.M., Sabkalov V., Sobyenin A.D., Tikunov V.S., Philippenko A.V., Chakeeva M.U., Chernov M.I., Shabdolov Sh.D., Shibutov M.M. (2015) STEK: System of Eurasian transport corridors, Pushkino: Center for Strategic Trend Studies, 644 p.
2. Cui Weihong, Jiang Yang-ming, Golubchikov Yu.N., Rakhimov, K.K., Sobyenin A.D., Tikunov V.S., Wang Yun-fei, Yang Xian-kun (2014) Geographical Substantiation of the Pacific-Atlantic and Indo-Arctic transport Net.-Proceedings of the International Conference "Sustainable Development of Territories: Cartography and GI Support," InterCarto/InterGIS 20, Belgorod, Kharkov (Ukraine), Kigali (Rwanda), Nairobi (Kenya), pp. 237–249 [in Chinese].
3. Golubchikov Yu.N., Rakhimov K.K., Sobyenin A.D., Tikunov V.S. (2012) Geographical Substantiation of the Indo-Siberian Transport Direction. – *Geography and Natural Resources*, V. 33, N 3, pp. 258–261.
4. Strukov D.B. (2012) Stolypin: on the way to the Great Russian. – M.: Veche. – 320 p.
5. Zheleznyakov A.S., Tikunov V.S., Golubchikov Yu.N., Pakhimov K.K., Sobyenin A.D. (2011) Railway model of integration of Central Eurasia. Theory and practice of social development, N 8, pp. 105–110.

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