

Analysis of the Transport-Communication Complex of the Republic of Kazakhstan: Current State

Daulet Karibek, Indira Rystina, Aliya Kussainova, Aigerim Turkhanova and Gulnara Ibragimova
L.N.Gumilyov Eurasian National University, Satpayev Str., 2, 010000 Astana, Kazakhstan

Abstract: This study discusses the transport policy of the Republic of Kazakhstan as a priority direction of country's development and as a mechanism of realization of industrial-innovative development programme of the state. At the beginning of the research, the researchers conducted a comprehensive analysis of the concept of transport and identified components of transport system based on regional and international experience. There are formed four international transport corridors on the territory of Kazakhstan based on the existing in the Republic transport infrastructure which undoubtedly is a lot of potential to create in Kazakhstan a transport and logistics center. The study presents the ways of implementing these goals, provided the basic principles of innovative development of the national transport system. And so well placed strategic emphasis: improvement of transport technology and the introduction of modern machinery and equipment; integration and provision of complex informatization of production and transport processes.

Key words: Transport policy, Republic of Kazakhstan, transport corridor, transportation, logistics

INTRODUCTION

The main goal of state transport policy is the establishment of a highly efficient national transport system designed to meet the demand for transportation of goods and passengers, increase safety and quality, creating conditions for financial rehabilitation of transport enterprises due to investment activity, increase of competitiveness of domestic carriers in the internal and external market of transport works and services.

Transport has always been and will remain an important part of the economy, a factor that ensures its unity and integrity. The development of transport and communications largely determines the country's national security, its defense capacity, solving social problems.

Sustainable and efficient transport enables other industries to reduce the cost of goods and services which stimulates the growth of production and consumption and also contributes to expansion of international relations, integrate the national economy into the world economic system.

The transport system is a set of road, rail, surface and underground urban electric, air, water and other modes of transport. The structure of the transport system includes transport means and transport communications (roads, railways, airways, waterways, information and navigation systems, etc.), transport enterprises and other organizations and services providing functioning of transport.

The development of transport and communications involves large financial, material and human resources but the impact of which manifests itself not primarily in the transport and it services industries or fields of activity. This is the specificity of transport as infrastructure for production which is characterized by pronounced outside of industry effect.

Transport policy in all developed countries is regarded as one of the most important components of the national strategy and the transport as a rule is under constant and tough control of the state. In this case the transport system and unified transport policies are considered critical elements for the development of both domestic and foreign markets.

MATERIALS AND METHODS

Concept "transportation system" is broader in contrast with the concepts of "transport" and "transport complex". It includes a state transport policy and system of control bodies. Thus, the transportation system is a combination of a territorial network of railways, technical means of transport and transport organization which is based on a uniform policy, ensures the interaction of separate transport modes and links of transport process for the implementation of transport and economic relations and the smooth functioning of the entire economic complex.

System quality of transport is manifested at different levels of management national, regional, district and major industrial hubs. Specific also and a management-organizational structure of the transport system because it is built on the territorial-branch principle and combines elements of sectoral and regional management. The transport system has its internal branch (species) structure reflecting the composition and ratio of elements of different types of transport.

Modes of transport are classified according to traction power, communications and destination and represent a complex branch system, each of which has its own characteristics, both institutionally and in terms of technology. Interesting is a territorial dimension of transport system, characterized by the combination of linear type and allocation of communications and their elements. The first group includes rail and road, river and shipping areas, pipelines and overhead lines. To the second-transport items including train station, bus station, river pier, operational transport enterprises, stations and ports and transportation hubs. Under the transport nodes understand mainly the junctions, crossing or branching of railways of the various types of transport or one of them.

Improving the efficiency of the transport system occurs due to the coordinated work of all types of transport and on the basis of accessibility, reliability and mobility of each of them. All communications are considered as part of the integrated transport system, taking into account the strengths of each mode of transport and local conditions of the work. The importance of such observations is obvious, since the transport network was designed mainly on the basis of departmental interests, i.e., the emphasis was on the development of individual modes of transport and not on the interaction and the relationship between them, especially on the need for their integration into a unified transport system.

The formation and implementation of transport policy is an ongoing process due to a number of political and economic circumstances. In this regard, for us it is of particular interest the experience of Western Europe in this area.

It should be noted that in Europe since 1992, began a new phase in transport policy which aims the formation of a unified market for transport services and unimpeded development of intermodal transport. Provides a comprehensive development of transport infrastructure, its modernization and cooperation as well as gradual simplification of procedure of crossing of borders and the removal of all obstacles in the implementation of transport (TRACECA, 2007).

The European Commission adopted a “white paper” in which was formulated a comprehensive approach to development in the future of the common transport policy which envisaged strengthening of the transport market, removing distortions and impediments in the distribution of traffic by types of transport in the creation of Trans-European networks in the application of more stringent standards. Pursuant to the recommendations of the “white paper” in June 1993 there were taken measures in the area of fiscal policy, aimed at agreeing the terms proportional distribution of infrastructure expenditures under the trucks, the establishment of additional taxes on diesel cars, the charging of tolls or charges for the use of roads (World Bank, 2005).

Tasked with creating a transport system that combines the aspects of safety, environmental protection and integrated development of transport communications. The formation of a single transport system even within the European Union is rather slow and difficult. The reasons for this lie in the structural, geographical and economic differences of the national transport system, the existence of conflicting interests and priorities of individual countries. For example, rail transport in some countries is state-owned, others in private and for many characterized by a combination of both. Issues of additional funding of transport activities from the budget, subsidizing of transport are resolved differently. In many respects different national traditions, there are peculiarities in solving environmental and energy problems.

High growth of Kazakhstan’s economy prove the effectiveness of the construction and implementation of its own model of development based on long-term planning.

Implementation of the Strategy of industrial-innovative development will require the state’s comprehensive efforts aimed at the intensive and qualitative development of all sectors of the economy and improving human potential.

The development of the common economic space of the country largely depends on the degree of development of transport infrastructure of each region. In this regard, particularly relevant is the need for a balanced development of the transport system of regions and strengthening cooperation between central and local executive bodies in state regulation of transport activities of the continuing trend towards decentralization.

Transport services should be targeted to their recipients, namely the needs of the population, economy and strategic issues to ensure the unity, defence and security of the country.

RESULTS AND DISCUSSION

Results of the analysis of Kazakhstan’s transport system

Transport infrastructure of Kazakhstan: Geographic features of Kazakhstan (vast territory, landlocked, uneven distribution of human settlements and natural resources) make its economy one of the most cargo capacious in the world, causing a high dependence on the transport system.

Being at the crossroads of Europe and Asia, Kazakhstan has substantial transit potential by providing to the Asian countries geographically uncontested land transport communication with Russia and Europe. Increasing the attractiveness of transit potential of the Republic’s airspace. The neighboring states with huge markets, makes the development of the domestic transport system perspective.

Relatively flat landscape and the presence of large reserves of natural stone allow unrestricted development of railways and road transport.

The main part of a network of ground lines of communication falls on roads and railways, respectively to 88.4 and 14.0 thousand km). The length of exploited waterways is 3.9 thousand km, airways -61 thousand km (Fig. 1) the density of the road network per 1000 km² is 5.1 km of railways, 32.4 per km of roads paved, 1.5 km of inland waterways.

The choice of Kazakhstan in favor of a market economy, made in the early 90ies and the beginning of the reform substantially changed the conditions of transport and nature of demand for transport services.

In the first decade of implementation of reforms in the transport was carried out basic structural and institutional reforms. Created legal framework of the transport sector responding to the new socio-economic conditions. Divided the functions of government and economic

activity created an adequate market conditions, the system of state regulation of transport activities. Basically completed the privatization of some modes of transport.

The structure of the organizational-legal forms and the number of transport companies across all industries change every year. This speaks to the ongoing formation of the optimal market governed by the principles of competition and the real demand for transport services.

Significantly increased the role of transport and has improved the relationship problems of its development with the priorities of socio-economic transformation. In general, transport meets the growing demand for the carriage of passengers and cargo. For the period from 2000-2005, the growth of transport services for the year were: passenger traffic at 7.8 %, the freight traffic of 9.5% (with an average annual economic growth of 10.3%.

However, despite the overall adaptation of transport to market conditions, state of the transport system at present cannot be considered as optimal and the level of development is sufficient.

The unbalanced location of the transportation and communication network throughout the country hampers the development of the common economic space and the mobility of the population. Industrially oriented network of railways and roads were developed without regard to the territorial boundaries of the former Soviet republics. The incompatibility of some of the technical parameters of transport infrastructure with international standards and systems of current trading partners is a significant impediment to regional integration and the development of trade and transport links.

Considerable unevenness in the development of transport network prevents economical development of the regions. About 2000, rural settlements have no year-round transportation. Security settlements regular message is 69.3%. At the present stage the development of Kazakhstan’s transport complex is characterized by poor condition of fixed assets, obsolete infrastructure and technology.

The share of transport expenses in the cost of the final product is relatively high and is at 8 and 11%, respectively for domestic rail and road transport in the countries with developed market economies this indicator amounts to 4-4.5%. In terms of cargo intensity the Kazakhstan’s economy is about 5 times less effective. So, for every unit of GDP in dollar terms has not <9 tonne-kilometres of transport work and in the countries of the European Union a cargo intensity is <1 ton-mile/\$ GDP (Kie and Akhmet, 2009).

The growing demand for high-quality transport services is not fully satisfied due to insufficient level of technological development of the transport system and the backlog in the field of transport technology.

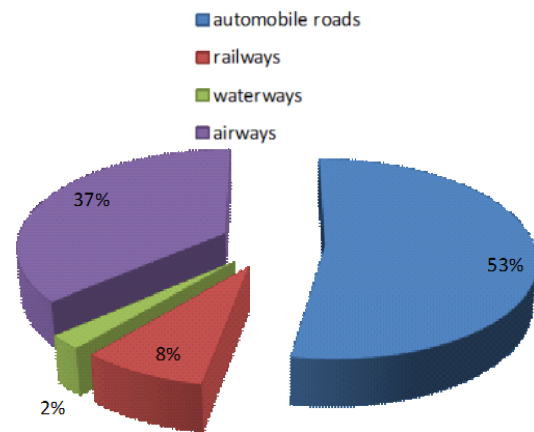


Fig. 1: Length of transport routes

Significant growth of all traffic, including those associated with the export of coal, crude oil and refined products, metal products, products of chemical and petrochemical industry, other goods is constrained by insufficient capacity.

The possibility of increasing the gross national product through exports of transport services are implemented incompletely, since the position of domestic carriers in the global market of transport services does not meet their real capabilities and not to the end use of the transit potential of the Republic.

Kazakhstan in the center of transport routes of Eurasia:

Location of the Republic of Kazakhstan in the center of the Eurasian continent predetermines its geopolitical role as a transit bridge between Europe and Asia and between Russia and China.

On the territory of Kazakhstan are formed four international transport corridors based on the existing in the Republic transport infrastructure.

Northern corridor of the Trans-Asian Railway (TAR):

Western Europe-China, Korean Peninsula and Japan via Russia and Kazakhstan (section Dostyk-Aktogai-Sayak-Mointy-Astana-Petropavlovsk (Presnogorkovskaya);

Southern corridor of the Trans-Asian Railway (TAR):

South-Eastern Europe-China and South-East Asia through Turkey, Iran, Central Asian countries and Kazakhstan (section Dostyk-Aktogai-Almaty-Shu-Arys-Saryagash).

TRACECA: Eastern Europe-Central Asia via the Black sea, the Caucasus and the Caspian sea (section Dostyk-Almaty-Aktau).

North-South: Northern Europe-Gulf States via Russia and Iran with participation of Kazakhstan at the sections: sea port Aktau-Ural regions of Russia and Aktau-Atyrau.

In addition to the areas participating in the formation of the main transcontinental routes, it is necessary to note the Central corridor TAR which is important for regional transit in the direction of Saryagash-Arys-Kandagach-Ozinki.

The corridors significantly reduce the distance in communication, the East-West and the delivery of goods (Kie and Akhmet, 2009).

The powerful growth of China's economy, in particular its Western regions have already raised the demand for deliveries to the world markets of various range of products. However, according to experts, the level of development of transit in Kazakhstan does not

correspond to the potential of the industry and the country as a whole. For example, in 2003 the volume of China's foreign trade with EU countries amounted to 115 million tons while the volume of transit traffic through the territory of the Republic of Kazakhstan in this direction amounted to about 3 million tons. Geographically, the network of transport corridors geared up to meet industrial and household needs. It requires further optimization and partial reorientation from the perspectives of the territorial development of productive forces and population settlement.

The safety performance of the transport process in the first place of the road, do not meet international standards. Every year, traffic accidents killed >3 thousand persons, >2 times higher than in developed countries.

Over the past 5 years, the annual growth in the number of victims of road accidents was about of 10-15%. With this trend in the event of the failure of a state, the radical complex measures for improving the security including the modernization of infrastructure, implementation of educational programs and strengthening the system of enforcement, in a few years the number of victims could reach 10 thousand people.

The share of transport in environmental pollution reaches 30% which exceeds the similar indicator of the developed countries of the world >1.7 times.

Against the background of growth of demand for transport services and even more significant increase in the forward-looking term in the transport system as a whole and its sub-sectors remains a number of unresolved internal problems.

Not received proper development started in recent years, institutional and structural reforms in the transport sector. They need consistent completion in order to create stable conditions for further development of market relations in this sector of the economy.

The degree of wear and tear of fixed assets of the transport complex of Kazakhstan on average has reached a critical level 1-60% which led to a shortage of rolling stock to increase bandwidth in some areas to an extreme level.

Underdeveloped main railway network. For its optimization it is necessary to construct new railway lines in the direction East-West.

Due to prolonged underfunding of rail transport for the accumulation of physical depreciation of fixed assets >60%. Industry uses technically and morally outdated rolling stock, track equipment, worn-out design ways and used outdated technology of repair and maintenance of fixed assets. The efficiency of system operation requires considerable expenses to maintain fixed assets in working condition.

Given the global trend of growth of cargo containerization (55 % of total freight transport) requires development of container multimodal transportation and establishment of logistic centres, providing technological unity of different transportation types.

The network of roads of republican significance are mainly formed. It is necessary to build roads in the East-West direction, connecting Western Kazakhstan with the other regions of the country. Additionally, it is planned to construct the binding plots on roads with neighbouring states.

The poor state of the road surface leads to lower operating speeds, higher operating transport costs, increase accident rates.

The wear of the rolling stock of the vehicle fleet (about 30 % of buses and 40 % of trucks have a useful life of more than 13 years) leads to higher costs in repairs and maintenance, reduces the level of services and has a negative impact on the environment.

Network of international airports in Kazakhstan is optimal, however, necessary to bring it into line with international standards. In the Republic of the 22 airports in Acts 21. Due to the inconsistency of technical standards of airfield complexes in connection with the introduction of restrictions on the types of aircraft only 5 airports (in the cities of Astana, Almaty, Aktobe, Atyrau and Karaganda) can take heavy aircraft without restrictions. The rest of the airport need reconstruction.

Obsolete fleet (672 units) are not economical and do not meet international standards for noise and engine emissions, creates limitations in the service of international airlines. In this regard, it is important to create an attractive environment and the use of effective methods for facilitating the renewal of aircraft fleet.

To a large extent on the development of air transport is affected by the lack of modernization of infrastructure and basic means of civil aviation. Due to insufficient bandwidth and the mismatch to technical standards, hub airports of Kazakhstan were forced to reduce the number of received and sent them aircraft along with the introduction of restrictions on the types of aircraft.

Currently in the Caspian region only the Kazakhstan has an international sea trade port of Aktau which corresponds to the world standards of quality and technology services. However, further development of the mining industry in the Western region of the country will help to bring the level of oil production by 2017, up to 140 million tons per year which will increase oil transportation via the sea port of Aktau in the amount of 20 million tons per year. This is due to the need for expansion of production capacity of the port to an

appropriate level in the medium term as well as construction of oil terminals in other ports and create a base to support offshore operations.

Most vessels in the industry of inland water transport worked out for 2-3 life. Wear of state technical river fleet is 85%.

Another major constraint on water transport are the technical condition and reliability of hydraulic structures (locks). Long life (over 50 years) made during the design and construction errors, the increased seismicity of the area (6-7.5 points), aging of concrete structures, problems with acquisition of spare parts and equipment require the adoption of urgent measures for reconstruction and modernization.

The high level of import of technical equipment for the transport complex of Kazakhstan in certain industries it is over 90%. In this regard, it is necessary the formation and development of domestic production for repair and production of rolling stock, equipment and spare parts for the transport sector.

Inadequate level of funds allocated for development of scientific potential in the transport sector: according to expert estimates, it is <0.1% of the revenues of transport against 2-2.5% in developed countries.

Inadequate implementation of the fifth technological structure (microelectronics, telecommunications, flexible automation, combined application of various structural materials) in the transport complex of the Republic. For example, fiber-optic lines are in the order of 30% of the total length of the main lines of the republic in railway transport and 2.3%.

The state of the infrastructure and fixed assets of the transport complex requires a large investment from the state and the private sector. It is urgent to begin the reconstruction of infrastructure and renewal of rolling stock through the investment and creation of favorable conditions for the development of a competitive market operators.

It is lacking the necessary complexity in managing the development and operation of transport systems as well as in the coordination and interaction of different modes of transport.

Along with infrastructure constraints, transit flow through the territory of Kazakhstan faces a number of barriers, the most significant of which are unjustified delays and procedural difficulties in passing customs and border control.

The activities of all sectors of the transport complex is characterized by inadequate regulation of tariffs for transit transportation. Enterprises-natural monopolies, providing transportation services on transit, work in

conditions of tough international competition which requires greater flexibility in the formation of the transit tariff policy.

Legislative base defining the legal and organizational aspects of transport in general formed. However, in a number of industries do not exist regulations necessary for the implementation of the adopted laws. Applicable laws and technical standards do not meet international standards and need to be harmonized. Legislation regulating the activities of the transport sector should take account of basic provisions of international law in the field of transport. In order to improve the system of normative legal maintenance of functioning of the transport addresses the issue of developing and adopting a Transport code.

The current level of funding for transportation makes up about 1.5% of GDP, much lower than in countries with similar territorial characteristics. Rapidly developing countries are investing in the transport complex up to 4-7% of GDP.

Problems in the development of transport increase infrastructure restrictions, reduce the level of social development and the formation of the common economic space. Their speedy solution becomes especially important in the transition of the national economy into a phase of sustainable and quality growth. As to the problems of transport development in the country can be attributed to corruption on the roads that is a major deterrent to the development of transport corridors. For example in Russia the link between corruption and road safety is sustainable as all parties involved have something to gain. Russian motorists are not only victims of extortion but also take the initiative from the point of view of bribery (Oleinik, 2016)

In the period from 2000-2004, the growth of Kazakhstan's economy in terms of GDP amounted to 42.7% and the increase in the production of goods and services, respectively, 41.9 and 43.7%. The volume of cargo transportation by all types of transport increased by 28.5%. Resulting in a situation where the existing capacity of transport infrastructure hamper the growth of the economy.

The prospects of economic development of Kazakhstan with an expected saving GDP growth rate at 8.8-9.2% a year and bringing the annual average growth rate in the manufacturing industry to 8-8.4% inevitably will increase the load on the transport system, particularly on the infrastructure of rail and road modes of transport, playing a key role in industrial and economic processes within the country and in its export-import and transit relations.

The raw orientation of economy of the state, along with large distances with low population density results in a high dependence of the economy on transport. If in the period of economic recession the transport complex provided all the needs of the state's economy and also supported by deterring tariffs and prices for transport services, at the present time, a period of stable economic growth, significant government support is necessary in the restoration and upgrade of the transport industry.

CONCLUSION

One of the state challenges facing the transport system in terms of increasing the level of economic development of the country, is the reduction of cargo intensity of economy or the amount of transport work spent per unit of manufactured products (services), since this metric determines the efficiency of the transport system and the degree of the multiplicative effect of transport activities.

Therefore, the reduction of the share of transport component in the production of goods and services should be built by the state in the discharge of the main strategic development priorities of the transport system that will make production and transportation more accessible to all segments of the population.

In this respect, priority of the state is to ensure the legal framework and the creation of necessary economic conditions for the development of multimodal transport and logistics centers.

The youth of modern Kazakhstan is a completely new generation has grown up on the basis of changes of the old system against extreme and difficult reforms in the political, economic and social spheres. The youth has a huge impact on the political situation, information provision and social reason for the position (Rystina, 2012). Therefore, of great importance in improving the efficiency of transport processes has their information providing. It is necessary to intensively develop the satellite navigation system to create a database of information about the products and services.

Restriction and control of the negative impact of transport processes on the environment will require the equipping of the transport control bodies and environmental agencies with modern equipment and technology to control environmental parameters of vehicles (gas analyzers, opacimeter, devices for determining the content of heavy metals in the fuel, etc).

Certainly, at the initial stage of increasing technical and technological level of the transport system will require substantial investment from the state and from the private sector. However, the experience of developed

countries shows that investment in the development and implementation of new technologies, energy and resource saving, comprehensive computerization is fully justified and allows in short time to achieve high economic effect.

The basic principles of innovative development of the national transport system should be primarily aimed at increasing the availability of transport services and reduction of cargo intensity of economy; introduced new technologies must provide a unification of transport processes in the Republic with the global transport system.

Strategic emphasis: improvement of transport technology and the introduction of modern machinery and equipment; integration and provision of complex informatization of production and transport processes.

Among the main components of the intensive development of the transport system and achievement a high transport capacity should be emphasized the importance of enhancing scientific and personnel potential which is an integral part and a prerequisite for the high-tech and efficient transport system.

Since the development of science and, most importantly, the training of highly qualified personnel require a certain amount of time, the state must in advance take care to correctly identify the future needs for specialists and to create all necessary conditions for their training.

To improve the training of specialists in the field of transport it is necessary to define several specialized institutions of higher education and to establish learning centres to plan the flow of cargo and passenger transport. Public authorities should support such institutions,

whose task, among other things, will be to develop transport models, planning tools, training of intellectual resources, training and transfer of international experience. Institutions will provide state agencies to assist in the implementation of development programs, demand forecasting, identifying and assessing projects and solution of other issues connected with ensuring the activities of passenger and freight transport.

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