

# Regional Problems of the World Economy Infrastructure

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**Abstract**—One of the valid reason that holds back the Global economic development is the insufficient multiplication and organization of the physical infrastructure that provides the main features of the product's floating, information, capitals and another sources. As a result of its functioning, infrastructure unites branches, economic complexes and economics all around the world in the process of globalization. The transportation manufacturing is the most important sphere of the Global Economic Infrastructure's function because formation is the outcome of the intense searching of its optimal ways that can provide the economic global centers.

Global community intensely deals with making an indivisible vehicle complex on the modern milestone and it uses the special disposition and potential resource of the government, at the same time providing the aggregated service operation.

The opportunity of the function of the multi organized global market economies is driven by the measures of the transport systems of the different levels in the lump and its capability to be integrated in the global transport industry that will satisfy the system according to technical, informational and another frames of references.

The sizeable clampdowns of the economic run up, connected with the low level of the transport system's advance coincidentally emerged in the Russian Federation. Modern business analysis and evaluation specifications of the transport system and its infrastructure are not able to contribute the resolution of the object of the inter-temporal of economic growth.

The modernization of transport infrastructure in Russia and ramping up of competitive power of commodities and favors are an extensive impulse in realization of the transport strategy that predetermines the exigency of entirely using the transit potential that set in motion by the special Russian geographic location as a natural international transport corridor connecting European and Asia-Pacific regions.

Nowadays, the transport combining of the country's complex craves more effective methods of direction that must have been accompanied by the earmarked practices of the structure's rearrangement that are based on proactive monitoring and the handling of the logistic objects

**Keywords**—*new economic reality, global dynamic, increasing competition, international business, transformation processes, emergent strategy.*

## I. INTRODUCTION

Nowadays the Russian transport system is the part of whole infrastructure complex and the system is trying the need of the most rapid modernization if its control system and up rating of the implosion process with another subsets of the country's macroeconomic complex. It's predicated upon speed transport systems and breakthrough logistics technologies are high-demanded by global transport system and it permits to serve cargo shoppers and cargo receivers according to high objectives.

On the modern level the Global transport system uses a few kinds of vehicle with the different levels of vital rhythm that defines its ability of adaptation in different conditions because of geographical and functional diversification. Despite of all this, the need of the modernization of the Russian transport system is defined by government as its strategic aim.

The modern world economy is a dynamically developing system, which is characterized by the widespread using of information technologies that stimulate global changes. In order to become a full-fledged part of the global economy, it is necessary to build a contemporary infrastructure that meets the requirements of the new economy, which is developing today on the industry 4.0 platform. Obligatory condition for overcoming the territorial gap and the country's entry into the global economy is the transport component of the infrastructure complex. The aim of the article is to develop theoretical and methodological provisions and practical recommendations to ensure the balance development of national infrastructure for the free entry of its transport component into the global transport system. The main results of the study include the formation of a theoretical basis for management decision-making in the process of infrastructure modernization on the basis of proactive management of its transport component, accompanied by targeted procedures for reconfiguring the structures of its facilities.

There is the need of the structure modernization and processes, manufacturing equipment and plant assets that are included in the vary levels of the transport system's life cycle to be the part of the Global transport system that consists automobile roads and railways, off-shores and river ports, aircraft halls, movable equipment of the railway system and stations, making the terms for the highly-effective functioning of the procurement's array.

Nowadays the main factor of the economy competitiveness of any state is not the presence of a large number of natural resources, and its ability to freely enter the global infrastructure system and its component but the international transport system integrated into the economies of developed countries. The possibility of such entry is provided by the formation of a national transport system focused on an innovative model of development, which is based on revolutionary digital solutions and integrated platforms.

## II. METHODS

The methodological basis of the article is the conceptual and terminological apparatus of economic comparative studies and institutional economic theory, management, supply chain management.

As the main methods of studying the problems of balanced development of transport infrastructure we used both General scientific methods of cognition, allowing objectively and comprehensively explore the conceptual position of the infrastructure in the digital economy, and private experimental techniques, innovative developments, including: systematic and integrated approaches to the study of the implementation of infrastructure, dialectical method of scientific knowledge, comparative analytical, situational analysis.

The issues of infrastructure development as an obligatory component of any holistic economic system, contributing to the solution of fundamental problems of the economy, were considered in works of such foreign scientists as Rosenstein-Rodan P., 1944; A. Hirschman, 1958; R. Jochimsen, 1966; Isard W., 1966; Ammer C., 1986; J. Stein, 1992; K. Conrad, 1994.

The role of infrastructure in a balanced development of socio-economic systems of different levels devoted to the works of the researchers Abalkin L., 1968; Nasal S. 1970; V. Terent'eva, 1979; Krasowski V., 1980; Goltz, 1981; Feodoritov V., 1985; V. Fedorov, 2000; Asilian A., 2002; Moravchikova N., 2002.

According to Haussmann and other authors the restrictions hindering the integration of regional infrastructure complexes into the world system are related to the physical condition of transport infrastructure facilities, the insufficient development of which has a negative impact on the stimulation of economic development, diversification of production, increases interregional inequality [1]. Impact of transport infrastructure on economic dynamics first noted in Ashauer D. works [2]. According to these works, the increase of state investment in transport infrastructure by 10% leads to an increase in capital productivity in the private sector by 3-5%. Empirical studies conducted subsequently by other authors [3, 4], confirmed the conclusions of the scientist.

## III. RESULTS

The fair rearrange of Russia with developed countries all over the world according to innovative component of its economic competitive power (the 41th position among the 144 another countries by the index number of «companies` ability of derivation and adaptation of the innovative technologies) requires the fundamentally new approaches of

the infrastructure`s development, especially, its transport dimension as one of the main factors, because nowadays the main factor of competitive factor of all the governments economics is not natural resources but the ability to enter the Global system and its dimension without any troubles [5].

This ability is assured by forming the national transport system that will be directed on an innovative model of the development and the base of what will be adaptive software and computing and ability to integrate the included enterprises in reliance on building of highly-effective catering`s chain lets.

As we think, transport infrastructure is a system based on rail, road, air, water transport, which use infrastructure networks, including roads and bus stations, railways and cargo terminals, ports and airports and air routes, performs operations for the movement of goods and passengers.

There are no differences between national and international transport infrastructure that are inherent in the world and national economies. The transport infrastructure of each state may differ in composition and weight of each mode of transport due to its geographical factors. However, this does not affect the structure or laws of transport systems development depending on the level of hierarchy or mode of transport [6]. This circumstance allows us to assume that the transport infrastructure has a fractal structure.

The impact of transport infrastructure on the competitiveness of the economy is primarily in the nature of external effects. The characteristics of transport infrastructure influence the diffusion of innovation in the economy and, consequently, the dynamics of productivity and capital. Improvements in the transport infrastructure not only increase the size of the economy and market, but also increase the efficiency of resource allocation, allow the formation of industrial clusters with positive innovative external effects [5].

The economic centre of gravity moved away from China (and Asia as a whole) from the 17th century onwards. It is also clear that right from the start of the 21st century the economic centre of gravity has shifted back (and quite rapidly so) towards Asia and hence China [7].

The topicality of the transport system`s modernization is defined by others key factors that found its reflection in transport strategy in Russia until 2030.

The vehicle being the basic branch of the economics that is connected with another sections furnish the moving of stock among all the territory of the country and out of its pale fulfils buy-off working up of all kinds of a lot of goods and its delivery that defines the implementation of the creative technologies that allows to bring down charges connected with delivery but it also helps to raise the testimony and safety of the transferring process.

Modernization of the Russian transport system must be based on integration`s processes what will be more perspective in the terms of combined and inter-modal systems of cargo traffic. According to the Federal State Statistics Service`s information, the supply turnover was 3715.2 billion of ton-kilometers in the period from January to August of 2018: railway is 1719.7 billion, auto -166.1,

offshore -22.6 billion, inner water -43.5 billion, aircraft-4.9 billion, pipeline-1758.3 ton kilometers [8].

The organization of the multi-modal and inter-modal systems of cargo traffic with the new principal of working system will let either making new opportunities for integration of all the participants of merchandise flow or force the invention of infrastructure working in conditions of the digital logistics and it needs to correspond the claims of the 6th technical pattern.

The result of the transport system's modernization must raise its effectiveness and fixity in favor of the implementation innovational logistics technologies in organization of combined and inter-modal transfer of the Russian transport market.

The modernization of the management of transport systems also demands its removing to the system that is able to restrict the percent of unfavorable situation during the organization of the stock transferring based on the system bank of index number of activity of logistics infrastructure to the minimum.

The main distinguish feature of the productive management as compared with the practical using the usual jet control is an orientation on averting of the possible incurrence of the issue but not the operate reaction and continuous inadmissibility the problem that had already been happened.

Now the enterprises use different technologies of proactive management in their practice activity. There are: the management of the structured object dynamic; changing the methods and the aims of function; the content; the flow of execution of the main procedures and processes; lateral supply and deconcentration of aims, sequences of the management, flows of the information; using the elastic comfortable technology stack of the management; rearrangement of the structures during its degradation [9,10].

Nowadays the structure stock-out is an actual problem in the countries that was happened because of subjective and objective reasons. It can become a barrier to not let the fundamental changing of the transport system's development.

Another innovational instrument may help to raise the effectiveness of multi-modal and inter-modal carrying. This is the handover to the engineering principles, because all the decisions about logistics infrastructure in the integrated system (about the warehouses, packing case, and materials handling transferring) are tight interrelate with each other comparing the base of the logistics infrastructure [11].

European economic commission (UNO) defines the engineering as a special activity that is destined on making, exploitation of the enterprises and the infrastructures objects, including conducting pre-project, project, and practice works in the engineering and technical activity. It considers engineering as the key instrument of forming the infrastructure of all the levels [12].

According to tractability of other authors, the engineering objects are artificially made by human complex organizational and technical structures that are related to various levels of life cycle. In reference to logistic processes

and objects, the engineering is the activity based on systems approach and providing artificially made by human objects' live hoods on all the levels of logistic systems' life cycle.

The creation and development of innovative logistics infrastructure for sustainable development of the transport system, which will allow its facilities to adapt to the conditions of uncertainty and on the basis of integration to overcome the problems arising in these conditions, requires the existence of interacting models of logistics engineering and life cycle management, which can be implemented only on the basis of proactive management.

Proactive management of objects [13, 14, 15], in contrast to the traditionally used in the practice of reactive control involves the prevention of problems by creating a system of monitoring and management of fundamentally new proactive capabilities in the formation of control actions.

The system of proactive object management is based on the concept of controlled structural dynamics and invariance of object States, as well as the States of a distributed asynchronous computing process, describing them, the construction of both algorithms for the analysis of multi-structural macro-and micro-States of objects, and algorithms for proactive management.

The author perceives the engineering cycle as levels connected with researching, development exploitation or support and utilization on the ground of branch specific. Logistic engineering assumes the existence of the elaborated in details plan with its colligation with the organizational process and the result of this engineering shall be ensuring achievements with the minimum of payoffs.

#### IV. CONCLUSION

At the present stage the modernization of the transport system in Russia is related with the creation and functioning of innovation logistic infrastructure that will let not only to raise the effectiveness of commodity distribution systems but it also will become the main method of foreseeable toughening fighting for the transport market in the nearest time.

The creation and development of the innovational logistics infrastructure with the aim of the stable elaboration of the transport system that will let the objects of the infrastructure to be adapted for circumstances of uncertainty and surmount issues in these conditions on the grounds of integration and it demands the existence of the interactive models of the logistic engineering with each other and management of the life cycle and it can be realized only on the base of the system paradigm.

Technologies of proactive monitoring and management of transport infrastructure, based on the concept of proactive management, which, in general, is multifunctional and includes in relation to complex objects as functions of goal-setting, planning, regulation, and accounting and control, monitoring and coordination, are considered by the authors as promising technologies of complexity management for such multi-structure systems as infrastructure. The formation and development of a new generation of transport and logistics infrastructure requires a combination of advanced logistics engineering model and life cycle

management model, which will contribute to the creation of conditions for innovative development [16, 17].

The problems of insufficient development of infrastructure, including its transport component, which acts as a constraint on economic growth, were arisen by many researchers. However, there is no comprehensive consideration of the vectors of infrastructure development at the moment in the context of the economic relations transformation.

In the works of both foreign and domestic scientists noted the mechanisms of influence of transport infrastructure on the dynamics of both national and world economy. However, given the capital-intensive nature of transport infrastructure, research in this subject area is focused primarily on the use of extensive development factors. A number of theoretical and applied issues of socio-economic development of national economies based on the activation of organizational and economic factors of transport infrastructure in the context of a set of factors specific to Industry 4.0, and the subsequent receipt of economic effects have not yet been fully resolved [18].

The noted moments also served as a basis for this scientific research and defined its subject, relevance and the target orientation. The presented results of the study do not pretend to be an exhaustive consideration of the problem. Its main task is to systematize the main provisions and practical recommendations to ensure the balanced development of national infrastructure in order to ensure the free entry of its transport component into the global transport system.

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