

Problems of Forming Logistics Links in Building Sphere

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ABSTRACT

The development of logistics in the domestic economy is significantly behind this process in developed countries, both in terms of its accessibility for business entities and in terms of implemented competencies. This is largely due to the use of hierarchical forms of organization of logistics activities, which hinder the efficiency of management decisions in the field of logistics, as well as prevent rapid adaptation to dynamically changing business conditions. This situation for construction business entities is compounded by the lack of a well-established mechanism for their work in the construction market, taking into account changes in legislation on shared-equity construction, as well as the need for early reorientation from narrow-functional construction work to solving additional consumer problems, increasing the use of technological innovations in the construction sector that change the concept of organizing business processes, relations in the coordinates of "construction firm-consumer". In this regard, it becomes necessary to rethink the approach to organizing logistics activities, which should focus on dynamic relationships between construction organizations, customers, banking structures, investors, construction industry enterprises, supply organizations and transport structures. These circumstances increase the interest in the business environment to the problems of construction logistics, the transformation of construction organizations into real logistics systems that can provide not only a significant economic, but also social effect, since the problem has a pronounced social character. This determined the relevance of the study of the problems of organizing logistics activities in construction and its purpose-the development of theoretical views on the logistics of construction in modern conditions, which will determine the scientific and methodological approaches to the process of creating logistics systems of construction organizations. As the main methods of research on the problems of construction logistics, we used both General scientific methods of knowledge, which allow us to objectively and comprehensively study the conceptual provisions of logistics activities in construction, and private methods (system and complex approaches, dialectical method of scientific knowledge, comparative-analytical, situational analysis). The main results of the research are the clarification of the categorical logistics apparatus through the formation of methodological approaches to improving the construction management mechanism that is adequate to changing business conditions. The results can be used for research in the field of logistics management at the level of a construction company and the economy of the region.

Keywords: logistics, construction logistics, logistics-oriented model of public-private partnership, construction industry

1. INTRODUCTION

The relevance of the research problem due to the permanent transformation of the economic system, radically changed the nature of relationships in the construction industry that requires new approaches to the organization of the aggregate of interrelated and interdependent threads in its logistics system, the integration of the unity between the logistic partners acting as guarantor of economic and social interests of each participant in the logistics process. The search by construction organizations for new ways of cooperation, optimal interaction mechanisms that would guarantee them not only stable functioning in a changed market

environment with low costs and a simplified management structure, but also active participation in the implementation of the national project "Housing and urban environment" [1], which draws their attention to the logistics-oriented model of relations within the framework of public-private partnership.

2. MATERIALS AND METHOD

The significance and scale of the problems of construction logistics determined the great attention of domestic and foreign scientists and practitioners to them. Various aspects of these problems were investigated in the works of James G. March (1992), George P. Huber (2003), Jeffrey S. Russell (2003), N. A. Adamov (2011), M. P.

Gordon, E. P. Zhavoronkov (1996), M. E. Zalmanova (1992), E. K. Ivakin (2001), L. B. Mirotin (2003), V. N. Stakhanov (2001) [2-9]. However, it should be noted that there is no systematic consideration of the problem of construction logistics, which is manifested in the absence of a unitary approach to the methodology for creating a logistics-oriented model of relations between partners. In order to eliminate methodological gaps in the theoretical understanding of the process of construction logistics, we consider it relevant and timely to study the conditions for the development of a mechanism for managing logistics activities in construction organizations that is adequate to changing economic conditions. In this regard, the importance of the research is to develop the theory of construction logistics and determine scientific and methodological approaches to the process of forming a mechanism for the logistics of construction companies and creating a logistics model of relationships between construction market participants, which will eliminate the "bottlenecks" in the theory of logistics in construction.

3. RESULTS

The growing crisis state of the world economy, including the Russian economy, signals that the use of stereotypes can no longer lead to constructive solutions. Need to radically change the General view on the ongoing process entailing corresponding changes in the economic system as a whole and each of its subsystems, which include the national economic complex of the country and one of its basic industries - construction industry, the scope of which directly or indirectly involves over 70 industries of the economy, production, which is the basis for economic growth of all other subsystems. The construction industry today employs more than 279 thousand construction organizations, the number of which has increased 2,5 times in ten years (Fig.1).

Table 1 Investments in fixed assets aimed at the development of construction in 2000-2016 [11, p. 81]

Indicator	2000	2005	2010	2015	2016
Investments in fixed assets aimed at the development of construction -total	129,5	342,1	401,2	443,8	266,5
Share of investment in construction in total investment in fixed assets, %	3,6	3,7	2,9	3,0	2,2

Thus, the subjects of the construction business can only rely on their own forces, used until 2019 in housing construction investments of the population, which before the innovations were from 50 to 80 % of the necessary funds for construction, since 2019, after the introduction of amendments to the legislation, have ceased to be a source of investment for them [12].

Against the background of the lack of sufficient funding for construction projects, mistakes in estimating the costs of their implementation, which have become chronic, the change in legislation in the field of shared-equity construction has led to an increase in the cost of construction and negatively affected the efficiency of

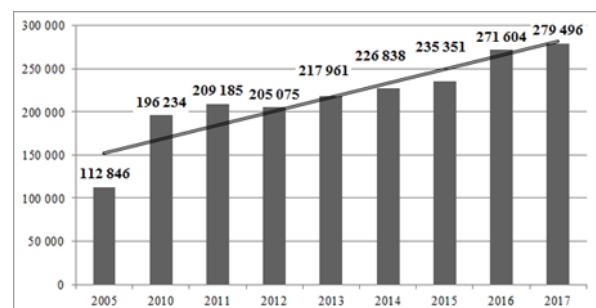


Figure 1 Dynamics of the number of active construction organizations in 2005-2017 [10, p. 15]

Among construction organizations, enterprises with fewer than 100 employees make up more than 90 %, which is explained by the process of disintegration that was observed in the construction sector in the first years of economic transformation, when large construction organizations were divided into specialized enterprises. A disaggregation of the construction industry had a negative impact on the state of the material-technical base of construction, degree of wear of fixed assets in construction at the beginning of 2018 were 48,4%, an increase from the beginning of the reforms by 8,7%, the proportion of fully depreciated machinery and equipment – 26,4% (increase of 11,0%), the industry has slowed the process of implementation of new technologies, advanced methods of production work (innovative activity in the industry is 1,5%). The crisis in the construction industry is evidenced by a decrease in the share of fixed capital investment in the gross domestic product (GDP) from 29% in 1990 to 20,6% in 2018, that is, the volume of fixed capital investment in 2018 was 26,4% less than in 1990. Currently, budget investments in the country's construction sector account for approximately 2,2 % of the total investment volume, which has been steadily decreasing since 2010 (table 1).

construction businesses due to the subsequent fall in housing affordability.

Meanwhile, the residential real estate market can be considered an indicator of the development of society. Given the high level of depreciation not only of real estate, but also of utilities, the quality of housing that was built in the 50s of the 20th century and the existing demand, which is constantly supported by reducing mortgage rates, we can say that most of the residents of cities are ready to improve their housing conditions.

The government of the Russian Federation pays great attention to improving the quality of life of the population. In December 2018, the national project "Housing and

"urban environment" was approved, according to which by 2024 the volume of housing construction should be at least 120 million square meters per year, of which 80 million square meters should fall on apartment buildings [13].

In modern conditions, when the development of residential real estate is based only on market mechanisms, a number of negative phenomena are formed, in particular, the lack of land for the construction of residential facilities, the reduction of green space due to cutting down to release land for construction, and the spontaneous growth of residential buildings without linking with the capacity of transport and social infrastructure.

And, as confirmation of the above - a drop in sales of primary market objects in 2019 by 1,7% compared to 2018 [14].

Given these problems in the medium term , the industry expects a reduction in participants , monopolization of the industry, reduced supply and, as a result, an increase in housing prices . As a result, housing for most of the population will become inaccessible.

Based on the current situation in the residential real estate market of the Russian Federation, the question of the role of the state in the development of the residential real estate market becomes relevant.

According to the Ministry of construction of Russia, in 2019 in the Russian Federation is recognized as an emergency 54,7 thousand houses with an area of 16 million square meter of housing in Russian cities decaying, and the number of damaged houses is constantly increasing [15].

In 2002, the state program for the demolition of emergency housing was launched, but it was not implemented due to the lack of a clear understanding of the financing mechanism. In this regard, the project "Housing and urban environment" has set a goal: by 2024, to settle 9,54 million square meters of uninhabitable housing.

Despite the fact that the state allocated 507,2 billion rubles to implement the may presidential decrees on reducing the emergency Fund, 80% of which will be financed from the Federal budget and 20% provided by regional authorities, there are still unresolved issues such as: can all regions provide 20% of the funding, what will be the mechanism for interaction between participants in the process?

In the format of this article, the authors consider it necessary to focus the features of housing construction on a new phase of its development, associated with the demolition of emergency housing and the construction of new housing of appropriate quality in its place, i.e., on the process of renovation of emergency housing stock.

The practice of housing renovation was successfully implemented in China, in 1987-1990, a pilot project was

launched to renovate several blocks of the Central part of Beijing, and in 1990, a full-scale program of demolition of dilapidated housing began [16].

The renovation of the housing stock should take place through the development of a new housing policy focused exclusively on solving the housing problem.

Not only the decline in the level of investment in GDP characterizes the growth of crisis phenomena in the construction industry, but also the lack of conditions for ensuring simple reproduction, since the share of capital investment in GDP does not reach the necessary 23-25 %, and for ensuring expanded reproduction – the necessary 30-31% [17].

The external environment and economic conditions force construction business entities to look for ways to improve the efficiency of their economic activities, among which the most priority are the mechanisms for logistics of their activities

To resolve this situation, a public – private partnership based on logistics principles should become the basis for interaction between developers and the state.

For the successful implementation of this strategy, it is necessary to develop a functional scheme of the logistics model for the development of the renovation housing market with the designated role of the state. The basis for solving this issue should be a modern logistics concept aimed at simultaneously working with consumers, developers and government agencies.[18]

We are talking about the formation of a logistics model of the housing construction market. State participation in the framework of the logistics model should be aimed at creating conditions for reducing the cost of construction through such components as the settlement of emergency housing stock, payment of rental housing to migrants and, in the future, the provision of vacant land for targeted construction. [19, 20]

In terms of the format of public – private partnership, the renovation of the housing stock should be stimulated by co-financing from the Federal budget the costs of settling the population and paying for rental housing to migrants.

The following main components form the basis of interaction between the public – private partnership logistics system:

- organization of competitive selection of the best development project;
- regulation of the profit rate in these objects;
- settlement of the emergency Fund at the expense of the Federal budget;
- formation of the social housing market.

Figure 2 shows the logistics system of public -private partnership in the segment of innovative housing.

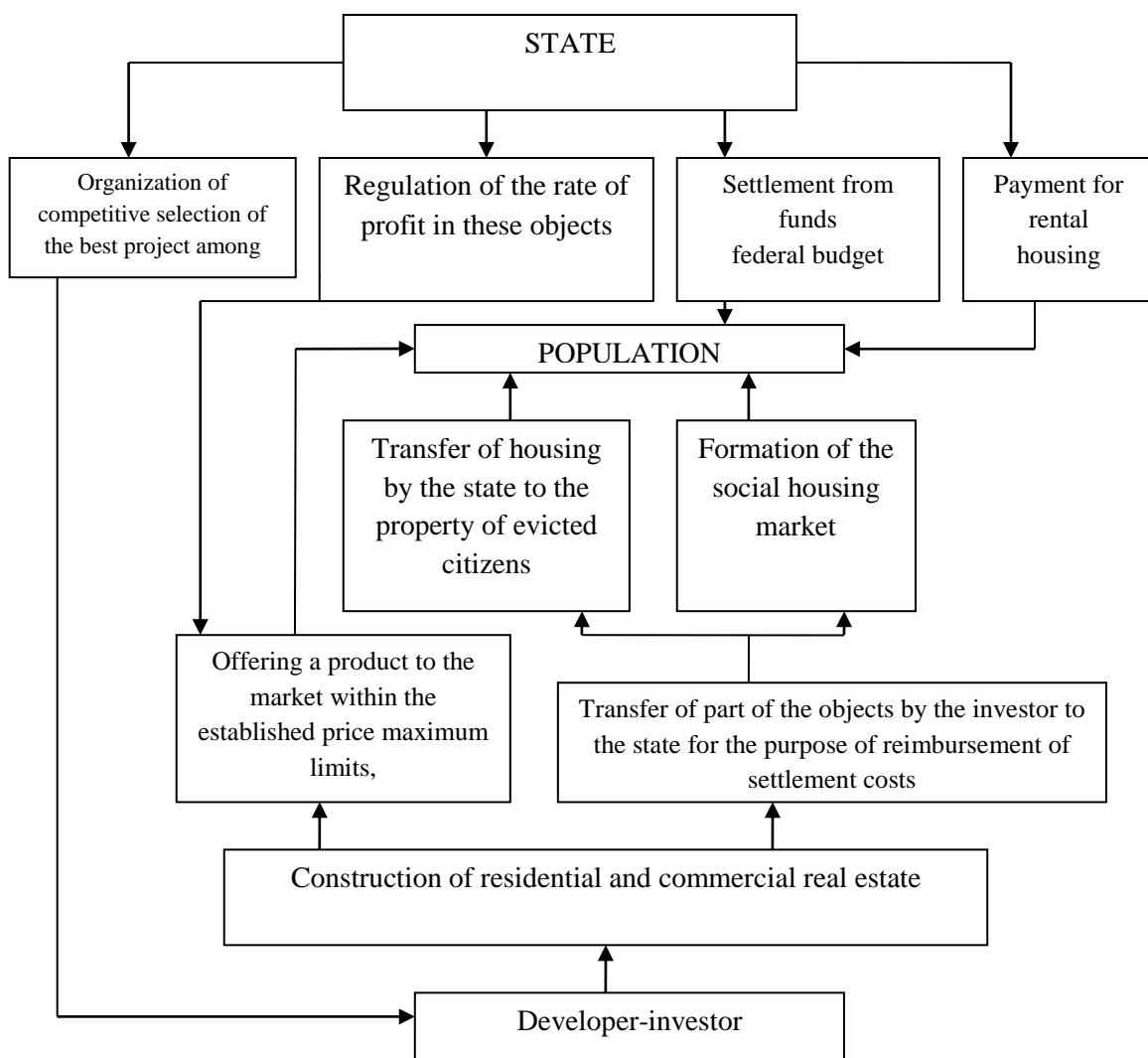


Figure 2 Logistics system of public -private partnership in the segment of renovation housing [Developed by the authors]

Thus, in General, the conceptually designed justified logistics system of public -private partnership in the segment of housing renovation will ensure more effective development of affordable housing construction, solving the problem of emergency funds, forming the prerequisites and conditions for the overall normalization of the Russian real estate market, solving the social problem of affordable housing.

4. CONCLUSION

In modern conditions, the relevance of implementing logistics tools in the practice of any business entity is almost beyond doubt. The demand for logistics approaches is also confirmed by the interest in logistics problems, which is shown not only by scientists, but also by economic entities, since the use of modern logistics approaches gives economic entities the opportunity to

manage resource flows, while at the same time meeting the demand for products and bringing it to consumers in a timely manner and with minimal costs.

The need for logistics on the part of the construction industry is explained by the increasing need to optimize production, reduce construction time, increase the life cycle of real estate objects; the need to reorient them from a narrowly functional production to meet individual customer requests; the unification of construction technologies, as well as the conditions of severe turbulence of the economy in which they work. However, the subjects of the construction business have quite high potential opportunities, which, due to the above reasons, they can not implement in practice. The conceptually based model of the logistics system of public-private partnership in the segment of housing renovation, proposed by the authors, will objectively increase the economic efficiency of construction business entities, as well as solve the social problem .

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