

Belyakov S.I.

**Belyakov
Sergey Igorevich,**

Candidate of Economic Sciences, Associate Professor, Associate Professor of the Department of Organization of Construction and Real Estate Management; Moscow State University of Civil Engineering (National Research University) (MGSU); 26 Yaroslavskoe shosse, Moscow, 129337, Russian Federation; ID RISC: 587836, Scopus: 39763951700; osun_kaf@mgisu.ru

The algorithm for the formation of a project management office within the organizational structures of investment and construction activities

Investment and construction activity as a specific management object has a fairly high level of methodological elaboration in accordance with modern paradigms of project management. At the same time, essential features of this type of production activity, primarily in the field of technology, organization and regulation of processes and procedures, largely determine the management methodology of investment and construction projects as a separate area with its own unique characteristics. In particular, this is due to differences in regulatory systems and practices applied in different countries. This situation leads to significant limitations in the application of existing approaches and, as a result, the need for their adaptation and, in some cases, revision. An example of the occurrence of such inconsistencies is the management of intersectoral production structures that include investment and construction activities as one of the elements. In this case, tackling the problem of building an effective organizational management model may involve certain difficulties. Within the framework of this article, the author examines the mechanisms aimed at the formation of a project management office — a key element of the organizational and managerial structure in the context of solving production tasks of investment and construction activities. It is revealed that, with regard to the peculiarities of regulation and the common practice of investment and construction activities in Russia, the list of functions and the content of activities conducted by the project management office most closely correspond to the tasks related to the activities of the technical customer. As a result of the research, the author has developed a fundamental organizational and managerial algorithm to establish a project management office that includes functionality for the implementation of investment and construction projects.

Keywords: project management office, investment and construction activity, organizational and management structure, PMBoK, engineering, algorithm, technical customer

Investment and construction activity as a specific management object has a fairly high level of methodological elaboration in accordance with modern paradigms of project management. At the same time, the essential features of this type of production activity, primarily in the field of technology, organization and regulation of processes and procedures, determine in most cases the consideration of the methodology of management of investment and construction projects as a separate area with its own unique specifics. In particular, this is due to differences in regulatory systems and practices applied in different countries. This situation leads to significant limitations in the application of existing approaches and, as a result, the need for their adaptation and, in some cases, revision.

With regard to the Russian conditions of regulation of investment and construction activities, it can now be concluded that there is a generally well-established and proven workability and a sufficient degree of stability and adaptability to the system of sectoral regulation in the construction sector. At the same time, the processes of reform and optimization are continuing, initiated, as a rule, at the level of the state or national industry associations (NOSTROI, NOPRIZ, etc.). Also in the previous decades, leading researchers and practitioners have formed and substantially implemented the scientific theory of

performance management of investment and construction activities in its broad sense.

Thus, we can talk about the existing industry regulatory and methodological system of regulation and management of investment and construction activities. However, due to the reasons described, in some cases the provisions of this system do not fully correspond to the provisions of generally accepted project management methodologies, which are more universal and used in various industries.

An example of the occurrence of such inconsistencies is the management of intersectoral production structures that include investment and construction activities as one of the elements. In this case, the solution of the problem of building an effective organizational management model may be associated with certain difficulties.

Within the framework of this article, the author examines the mechanisms aimed at the formation of a project management office (PMO) — a key element of the organizational and managerial structure in the context of solving production tasks of investment and construction activities.

First of all, it is necessary to analyze the content of the key functions of PMO, determined in accordance with the universal methodology of project management, and its comparison with the domestic

industry practice of organizing investment and construction activities.

The process of creating a corporate project management system is inextricably linked with the formation of its component attributes, such as PMO. The PMBOK management considers under such a body an organizational structure that solves the tasks of structuring project management processes, sharing resources, tools, methodology and methods. The standard allows for a multiplicity of options for the responsibility of project offices and the types of their structures [1–3].

Depending on the type of PMO, the degree of its authority and responsibility within the entire organizational and managerial structure is determined. According to PMBoK, the following basic types of (PMO) are expected to be allocated¹:

Supportive PMO acts as a repository for the organization's projects. It provides templates, best practices, training and tracks lessons learned, has a very low degree of control in projects. This type of project office is typical for functional organizational management structures, where functional managers manage almost all types of activities, the budget is under their sole control. Project managers, as a rule, perform only the functions of a project coordinator, collect, document and store project activities in the organization's library.

Controlling PMO act as the company's auditor. They check whether organizational tools, processes and standards are applied in projects. They have a moderate degree of control in projects, they are well suited for an organization with a balanced matrix management model. In balanced organizations, project management is distributed between the functional manager and the project manager. They jointly manage project activities and budget. Corrective actions are taken in case of problems in the application or effectiveness of processes, tools and standards.

Directive PMO — manage projects and have a high degree of control over them. They are suitable for an organization with a strong matrix or project type of organizational management structure. The decisive authority in relation to the project belongs to the project manager. Directive PMO fully controls all projects carried out in the organization.

The functionality of a PMO may vary depending on its type, organizational management model and the specifics of the organization's activities. In the most general form, the functions of the project office include the following:

- preparation and justification of the project portfolio;
- standardization of processes and selection of methodologies and techniques for project management;
- project evaluation, reducing the duration of project execution cycles;
- maintaining current information about employees, staffing;
- resource use planning and optimization;
- conflict resolution and risk prevention;
- project progress tracking and dependency management;
- implementation of suitable tools for project management, employee training, mentoring;
- ensuring the reliability of project data and increasing the transparency of information;
- creating a knowledge base (including past projects to avoid possible mistakes);

- optimization of communication within the team;
- administrative support to project managers;
- reporting to management;
- management of archives of all projects of the organization.

With regard to the peculiarities of regulation and the widespread practice of investment and construction activities in Russia, the presented list of functions and the content of the PMO activity most closely corresponds to the tasks related to the activities of the *technical customer* [4, 5].

The technical customer is a legal entity authorized on behalf of the developer to perform the entire range of engineering services in construction, starting with obtaining a town-planning plan for a land plot, bringing technical and economic indicators into compliance, developing design estimates, quality control of construction and ending with the commissioning of the facility.

According to the National Standard of the Russian Federation "Project management in construction. Activities of the project manager (technical customer)" the technical customer performs the following key functions²:

- project initiation;
- determination of the scope of work (content) of the project;
- planning of communications in the project, exchange of information and documentation between project participants;
- project budget planning in construction;
- procurement planning for the project;
- planning and quality management of the project in construction;
- project human resource planning and management;
- project planning and risk management in construction;
- planning and management of terms (schedule) of project implementation in construction;
- planning of work with possible project changes in construction and their management;
- identification of key performance indicators and project results in construction;
- implementation of the construction project;
- monitoring and control over the implementation of the project in construction;
- completion of the project, acceptance of the facility into operation.

Thus, as a result of comparing the content of the key functions of PMO in accordance with the universal methodology of project management of the technical customer within the framework of construction projects in accordance with domestic practice, the following conclusions can be drawn:

- considered functionality in terms of the implementation of management tasks substantially coincides;
- functionality of the technical customer contains specifics related to the peculiarities of organizational and regulatory support of construction;
- considered functionality is determined on the basis of a process approach to the decomposition of production activities.

The *process approach* to management determines the consideration of the activities of any organization as a network of business processes related to its project goals. At the heart of this

1 Which PMO structure is right for your organization. URL: <https://www.greycampus.com/blog/project-management/which-pmo-structure-is-right-for-your-organization>

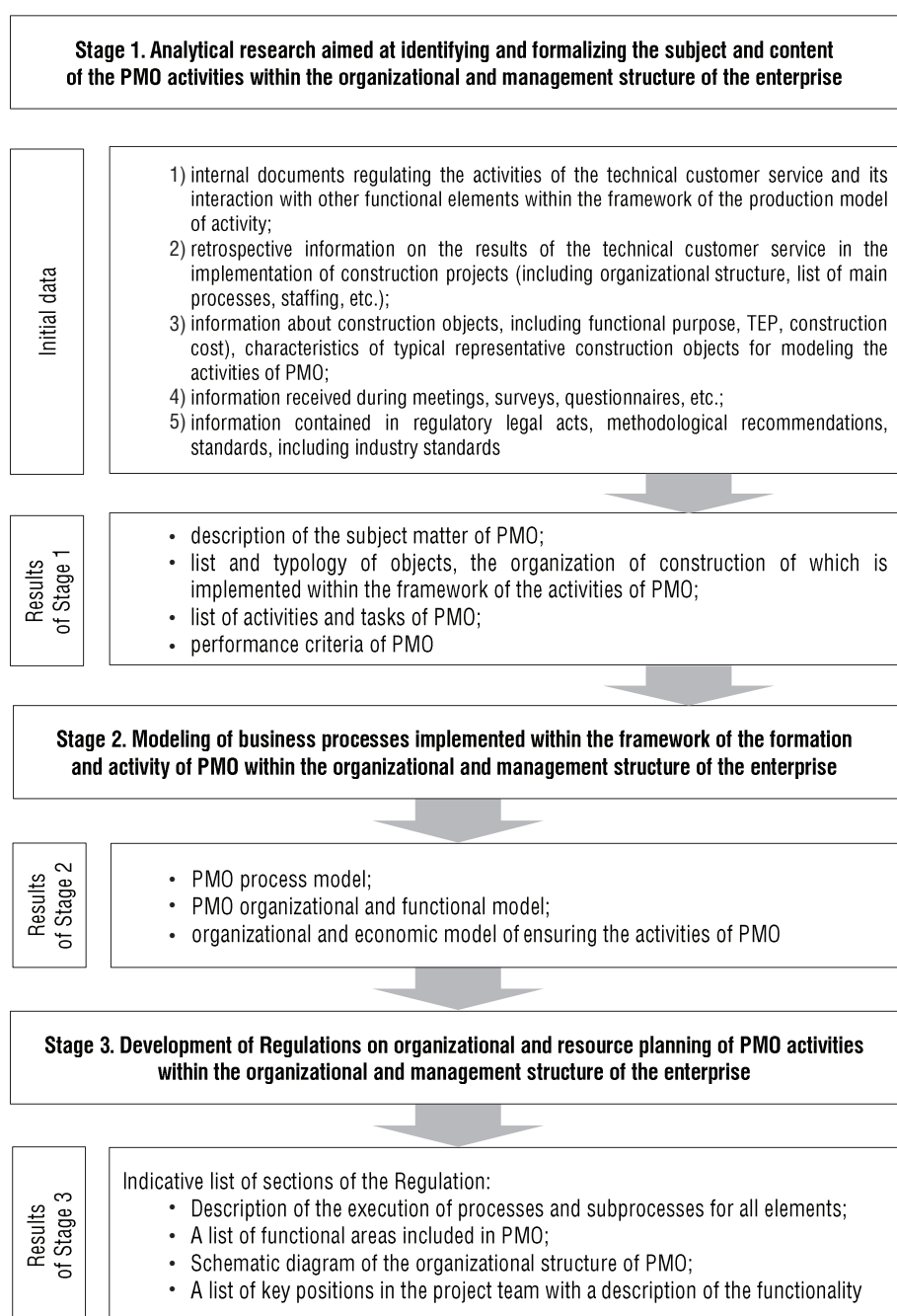
2 GOST R 57363-2016. National Standard of the Russian Federation "Project Management in Construction. Activity of the project manager (technical customer)".

► approach is a view of the organization's activities as the implementation of the totality of its business processes. By managing processes, the company prevents errors that may occur and monitors the effectiveness of activities through the use of key process indicators. In addition, this approach is focused not only on the organizational structure of the enterprise, but on business processes, the ultimate goals of which are to create products or services that are of value to all types of consumers, and is also the basis for building a quality management system at the enterprise [6–9].

In the context of the implementation of the process approach, in order to form and plan the activities of the PMO, it is advisable to

use the tools of engineering and, in particular, organizational and managerial engineering in the field of investment and construction activities.

Engineering of management processes in construction organizations is an independent professional activity carried out by consulting engineers in construction, including engineering companies or professional consulting engineers, under contracts with customers; including a complex of engineering consulting services. The main and ultimate goal of these services is to achieve the best (most optimal) results from the investment of capital or other costs associated with the implementation of investment and construction



The basic algorithm of organizational and managerial engineering in order to form PMO, including functionality for the implementation of investment and construction projects

projects throughout the life cycle — from the investment plan to commissioning; on the basis of development, in order to improve and control the implementation of technological, organizational, managerial and financial and economic models for the implementation of investment and construction projects in accordance with the set goals. Problem statement. To consider the types of engineering services, areas of application of engineering, as well as features of the management of engineering activities of construction enterprises and organizations³ [10, 11].

The main advantage of engineering (including construction engineering) is the reduction of project implementation time, which is the most important indicator of any construction organization. First of all, this is facilitated by the rapid acquisition of knowledge and experience in the field of engineering, technology, production and sales management, and the reduction of production costs per unit of production and increased efficiency of capital investments. It is also possible to highlight such advantages of engineering as:

- increase of investment efficiency as a result of the appearance of real levers of influence on the project budget;
- reduction of investment and other risks;
- increasing competitiveness both in the domestic and foreign markets, as a result of the recognition by the business world of the efficiency of the use of engineering.

Today, engineering in the world is undergoing a radical transformation: the process of organizing design is changing, it is becoming "distributed", "parallel", more and more flexible. Access to hardware and software is necessary not only for large, but also for medium-sized and small companies. In the world, "cloud technologies" are increasingly being used for this, which contribute to cheaper and faster design, and allow new personnel to be involved in it.

Organizational and managerial engineering is aimed at designing and creating a management subsystem, including subsystems for managing the functioning and managing the development of a business system [12].

Organizational and managerial engineering can also be implemented in isolation from the immediate investment and construction issues in the implementation of various types of organizational transformation projects. Organizational and managerial engineering is effectively applied:

- in the initial design of organizational and managerial structures;
- in order to increase the efficiency of the enterprise: during restructuring, reengineering, reorganization, organizational transformations, and so on.
- In general, organizational and managerial engineering can be presented in the form of the following areas:
- strategic engineering — development and implementation of solutions concerning the most general principles of the functioning of the enterprise, its development and interaction with the external environment; this direction concerns the subsystem of business system development management;
- engineering of the organizational structure of management — development and implementation of decisions concerning the system of subordination, composition and interrelation of structural units, distribution of responsibility between structural units;
- engineering of management processes — development and implementation of solutions related to information and

technological relations between structural units of a business system.

When conducting organizational and managerial engineering, project management acquires a pronounced multi-stage character. At the first stage, a model of the future management system is being developed, and at the second stage, its implementation within a specific subject area.

As a result of the research, the author has developed a fundamental algorithm for organizational and managerial engineering in order to form PMO that includes functionality for the implementation of investment and construction projects (Figure).

The presented algorithm can be implemented within the framework of the formation and development of organizational and managerial structures of both specialized construction enterprises and intersectoral companies implementing investment and construction projects, and will contribute to optimizing management and improving performance.

REFERENCES

1. *A guide to the project management body of knowledge (PMBOK guide). Sixth Edition. Newtown Square, PA, Project Management Institute, 2017; 762. (rus.).*
2. Ruchkin A.V., Trofimova O.M. *Project management: Main definitions and approaches. Management Issues. 2017; 3(46):121-128. (rus.).*
3. Prima Ya.G. *Project Management Development Trends in Russia. Economic and Social Research. 2018; 2(18):49-57 DOI: 10.24151/2409-1073-2018-2-49-57 (rus.).*
4. Chegotova E.V. *The role of the technical customer in the organization of investment and construction activities. Magazine of Civil Engineering. 2012; 3(29). URL: <https://cyberleninka.ru/article/n/rol-tehnicheskogo-zakazchika-v-organizatsii-investitsionno-stroitelnoy-deyatelnosti> (rus.).*
5. Tuyakova Z.S., Popova E.S. *The system of conceptual apparatus in the Russian and international practice of accounting for construction works. International accounting. 2011; 7:32-40. URL: <https://cyberleninka.ru/article/n/sistema-ponyatiynogo-apparata-v-rossiyskoy-i-mezhdunarodnoy-praktike-ucheta-stroitelnyh-rabot> (rus.).*
6. Kardapol'tsev K.V., Usoltsev S.V. *Features of the process approach to organization management. ECONOMICS. 2016; 5(14):21-25. URL: <https://cyberleninka.ru/article/n/osobennosti-protsechnogo-podhoda-k-upravleniyu-organizatsiy> (rus.).*
7. Murashkina T.I. *The essence of the process approach. Proceedings of the International Symposium "Reliability and Quality". 2006; 2:264-270. URL: <https://cyberleninka.ru/article/n/suschnost-protsechnogo-podhoda> (rus.).*
8. Sedykh E.P. *Project management: process approach. Vestnik of Samara State Technical University Psychological and Pedagogical Sciences. 2019; 4(44):181-192. DOI: 10.17673/vsgtu-pps.2019.4.12 (rus.).*
9. Sycheva I.N., Permyakova E.S. *Process approach in management now. Economics and Business: theory and practice. 2016; 1:124-127. URL: <http://economyandbusiness.ru/protsechnyj-podhod-v-upravlenii-predpriyatiem> (rus.).*
10. Kravchenko A.I., Kadyrova O.N., Shipareva D.I., Kadyrov R.R. *Engineering management processes in construction companies. Young researcher of the Don. 2018; 1(10):126-132. URL: https://mid-journal.ru/upload/iblock/6d4/23_Kravchenko_126_132.pdf (rus.).*
11. Pavlov A.S. *Engineering in construction. Vestnik MGSU. 2011; 8:442-450. URL: <https://cyberleninka.ru/article/n/inzhiniring-v-stroitelstve-1> (rus.).*
12. *Information systems and management technologies : Textbook. G.A. Titorenko (ed.). 3rd ed. Moscow, UNITY, 2011; 591. (rus.).*

3. GOST R 58179-2018. National Standard of the Russian Federation "Engineering in construction. Terms and definitions".

Алгоритм формирования проектного офиса в рамках организационно-управленческих структур инвестиционно-строительной деятельности

Инвестиционно-строительная деятельность как специфический объект управления имеет достаточно высокий уровень методологической проработки в соответствии с современными парадигмами проектного управления. Вместе с тем, существенные особенности этого вида производственной деятельности, прежде всего в сфере технологии, организации и регулирования процессов и процедур, обуславливают в большинстве случаев рассмотрение методологии управления инвестиционно-строительными проектами как отдельной области со своей уникальной спецификой. В частности, это связано с отличиями в системах регулирования и практиках, применяемых в различных странах. Такая ситуация приводит к возникновению существенных ограничений в применении существующих подходов и, как следствие, необходимости их адаптации и в ряде случаев пересмотра. Примером возникновения подобных несоответствий является управление межотраслевыми производственными структурами, включающими в качестве одного из элементов инвестиционно-строительную деятельность. В данном случае решение задачи построения эффективной организационной модели управления может быть связано с определенными сложностями. В рамках данной статьи автором рассматриваются механизмы, направленные на формирование проектного офиса — ключевого элемента организационно-управленческой структуры в контексте решения производственных задач инвестиционно-строительной деятельности. Выявлено, что применительно к особенностям регулирования и распространенной практике инвестиционно-строительной деятельности в России перечень функций и содержание деятельности проектного офиса в наибольшей степени соответствуют задачам, относящимся к деятельности технического заказчика. В результате проведенного исследования автором разработан принципиальный алгоритм проведения организационно-управленческого инжиниринга с целью формирования проектного офиса, включающего функционал по реализации инвестиционно-строительных проектов.

Ключевые слова: проектный офис, инвестиционно-строительная деятельность, организационно-управленческая структура, РМВОК, инжиниринг, алгоритм, технический заказчик

СПИСОК ИСТОЧНИКОВ

1. Руководство к своду знаний по управлению проектом (Руководство РМВОК). 6-е изд. Newtown Square, PA : Project Management Institute, 2017. 762 p.
2. Ручкин А.В., Трофимова О.М. Управление проектами: Основные определения и подходы // Вопросы управления. 2017. № 3 (46). С. 121–128.

3. Прима Я.Г. Тенденции развития проектного управления в России // Экономические и Социально-гуманитарные исследования. 2018. № 2 (18). С. 49–57. DOI: 10.24151/2409-1073-2018-2-49-57
4. Чеготова Е.В. Роль технического заказчика в организации инвестиционно-строительной деятельности // Magazine of Civil Engineering. 2012. № 3 (29). URL: <https://cyberleninka.ru/article/n/rol-tehnicheskogo-zakazchika-v-organizatsii-investitsionno-stroitelnoy-deyatelnosti>
5. Туякова З.С., Попова Е.С. Система понятийного аппарата в Российской и международной практике учета строительных работ // Международный бухгалтерский учет. 2011. № 7. С. 32–40. URL: <https://cyberleninka.ru/article/n/sistema-ponyatiynogo-apparata-v-rossiyskoy-i-mezhdunarodnoy-praktike-ucheta-stroitelnyh-rabot>
6. Кардапольцев К.В., Усольцев С.В. Особенности процессного подхода к управлению организацией // ECONOMICS. 2016. 5 (14). С. 21–25. URL: <https://cyberleninka.ru/article/n/osobennosti-protsessnogo-podhoda-k-upravleniyu-organizatsiy>
7. Мурашкина Т.И. Сущность процессного подхода // Труды Международного симпозиума «Надежность и качество». 2006. Т. 2. С. 264–270. URL: <https://cyberleninka.ru/article/n/suschnost-protsessnogo-podhoda>
8. Седых Е.П. Управление проектами: процессный подход // Вестник Самарского государственного технического университета. Серия: Психолого-педагогические науки. 2019. № 4 (44). С. 181–192. DOI: 10.17673/vsgtu-pps.2019.4.12
9. Сычева И.Н., Пермякова Е.С. Процессный подход в управлении предприятием // Экономика и бизнес: теория и практика. 2016. № 1. С. 124–127. URL: <http://economyandbusiness.ru/protsessnyj-podhod-v-upravlenii-predpriyatim>
10. Кравченко А.И., Кадырова О.Н., Шипарева Д.И., Кадыров Р.Р. Инжиниринг процессов управления в строительных организациях // Молодой исследователь Дона. 2018. № 1 (10). С. 126–132. URL: https://mid-journal.ru/upload/iblock/6d4/23_Kravchenko_126_132.pdf
11. Павлов А.С. Инжиниринг в строительстве // Вестник МГСУ. 2011. № 8. С. 442–450. URL: <https://cyberleninka.ru/article/n/inzhiniring-v-stroitelstve-1>
12. Информационные системы и технологии управления : учебник / под ред. Г.А. Титоренко. 3-е изд. М. : ЮНИТИ, 2011. 591 с.

Об авторе: **Беляков Сергей Игоревич** — кандидат экономических наук, доцент, доцент кафедры организации строительства и управления недвижимостью; **Национальный исследовательский Московский государственный строительный университет (НИУ МГСУ)**; 129337, г. Москва, Ярославское шоссе, д. 26; РИНЦ ID: 587836, Scopus: 39763951700; osun_kaf@mgso.ru.

For citation: Belyakov S.I. The algorithm for the formation of a project management office within the organizational structures of investment and construction activities. *Real estate: economics, management*. 2022; 1:32-36.

Для цитирования: Беляков С.И. The algorithm for the formation of a project management office within the organizational structures of investment and construction activities // Недвижимость: экономика, управление. 2022. № 1. С. 32–36.