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DEVELOPING MODELS OF CROSS-SECTORAL COOPERATION BETWEEN PARTICIPANTS IN PUBLIC-PRIVATE PARTNERSHIP PROJECTS

The article proves that through the implementation of public-private partnership projects in the processes of forming the infrastructure of life support services for the population of the region, it is possible to most effectively implement the tasks facing the authorities to meet the demand of the population for affordable and quality services, to provide the population with quality and affordable services while reducing the budgetary burden. To achieve the above results, the following conditions must be met: the authorities should clearly define the project objectives, and these objectives should be correlated with the strategic directions of socio-economic development; a system of comprehensive state support for PPP projects (financial, institutional, methodological, personnel, legal, etc.) should be established; procedures for the development and implementation of PPP projects should be as clear and transparent as possible; real political, financial and legal support from the government; projects should have a clear and effective structure and risk allocation.

In addition, it is necessary to create a system of interactions between the parties to the partnership, with a clear definition of rights, obligations and guarantees. A methodological framework for developing models of intersectoral interaction of participants in public-private partnerships based on special functions performed by a private partner has been formed. The analysis carried out by the author allowed to develop 186 possible partnership models (6 basic, 180 – total models of the first, second and third stages). The basic model of public-private partnership is a mandatory set of project elements that reflects the sequence of participation of the business partner in the project, as well as the scope of special functions transferred to it under the agreement with the public administration entity. The total model of public-private partnership is a sequence built on the basis of one of the basic models that reflects not only the scope of possible mandatory special functions within a specific agreement with a public administration entity, but also additional functions within the above processes for both parties to intersectoral interaction.

Key words: *project, public-private partnership, implementation, cross-sectoral interaction, model.*

Formulation of the problem. Like other governments, the Ukrainian government faces a wide range of complex challenges in various areas caused by rapidly changing trends and technologies, and the resulting growing cost burden. The desire to expand the range of services and improve their quality is limited by budgetary constraints and a lack of other necessary resources. This situation points to the importance of finding ways to attract additional investment in various areas of life, whose infrastructure does not meet the capabilities of technology, and whose employees lack the necessary skills to manage and use modern technologies to provide the necessary services.

One of these ways is to use various innovative models of public-private partnerships (PPPs) and contracting with the private sector. Although there is no definitive answer to the effective combination of public and private financing, PPPs have become a promising tool for providing governments with alternative tool for providing governments with alternative methods of financing, infrastructure development and service delivery. Currently, PPPs are used in many sectors and are

generally in many sectors and is generally aimed at attracting private sector capital and expertise to improve public service delivery. By making capital investment more attractive to the private sector, well-structured PPPs help to mobilize private investment.

Analysis of recent achievements and publications. The issue of the essence and effectiveness of mechanisms of interaction between the public and private sectors to ensure sustainable development of territories has been studied by such domestic and foreign scholars as O. Berdanova, L. Bezzubko, N. Dutko, O. Vasylieva, S. Castro, S. Carpintero, Y. Lebedynskyi, H. Rudolf, N. Sych, S. Khadzhiradieva. The problems and principles of legal support of public-private partnership in Ukraine were covered in their scientific works by M. Bil, O. Vinnik, V. Marushchak, G. Tretyak, O. Yurchenko, R. Khusainov, E. Chornyi, A. Shturba.

The article is **aimed** at studying the existing models of public-private partnership in the field of logistics and formulating proposals for their application for the restoration of the logistics infrastructure of territories in the post-war period.

Presentation of the main material. Analyzing international and domestic experience, we can distinguish the following models for the formation and development of regional infrastructure for public services [5]:

public model – all investments in the design, implementation and operation of the commissioned facility are made from the state (municipal) budget. The service provider is a state (municipal) organization.

In countries such as the United Arab Emirates, Libya and Kuwait, citizens do not pay for utility services. This is facilitated by the availability of natural resources in sufficient quantities to provide citizens with the necessary goods, i.e. part of the mixed goods is transformed into the category of «pure public goods». It should be noted that in the United Arab Emirates, only indigenous people are exempt from payments. Another example is Turkmenistan, where residents receive utility services free of charge because they cannot afford to pay for them [9].

private model – all investments in the design, implementation and operation of the commissioned facility are made by a private investor. Tariff regulation – at the discretion of the relevant authorities (this model is practically not used in its pure form). The service provider is a private organization.

Foreign experience in the formation and development of infrastructure for public services shows that in many Western countries, private companies operate in this area. The US authorities, for example, decided to remove themselves from the management of housing and communal systems, delegating these powers to private companies and at the same time shifting to them the obligation to bear responsibility to citizens for failure to fulfil contractual obligations. At the same time, everyone is equal before American law – both consumers (population) and producers (private business) of services. Some experts believe that this foreign experience is worth looking at. There are many private organizations operating in the US today [3]. Thanks to healthy competition, services in the country are provided at a high level, and the cost of services from firms in this area is quite acceptable. If residents are not satisfied with the quality or availability of services, they can change the organization providing these services in the shortest possible time. However, this model lacks a social component, making services inaccessible to a significant proportion of disadvantaged citizens.

State guarantee model – as in model II, all investments in the design, implementation and operation of the commissioned facility are made at the expense of the private investor, but the authorities at the appropriate level may act as guarantors for loans (credits) obtained by the investor (owner) in the financial market. Also, the authorities of the relevant level may regulate the prices for the sale of relevant goods or services – products of the investee. Service provider – a private organization.

Partnership models – all investments in the design, implementation and operation of the commissioned facility are made jointly, both at the expense of the budget of the relevant level and at the expense of the private owner in various forms of public (municipal-private) partnerships provided for by regulatory documents, state and local governments. A service provider is an organization of any legal form [8].

These models include, in particular:

1. leasing (rental) model;
2. joint venture model;
3. concession model, which provides for the transfer of a state (municipal) property to a private person for a certain period of time;
4. institutional investment model (based on the issue of infrastructure bonds).

Obviously, none of the proposed models can be applied in its pure form, due to certain circumstances:

strategies and programs that focus only on the use of budget funds do not allow the authorities to implement large-scale, strategic projects that underpin the country's high competitiveness;

a number of objects of the considered type of infrastructure, along with high social significance, have extremely low investment attractiveness, which makes it impossible for business structures to be interested in their construction, modernization and development;

a large number of risks in the implementation of partnership projects, both for private and public participants;

possible risks for consumers (increase in the cost of services, low level of their quality and accessibility, etc.)

The integration of all the above models will help to take into account the specifics of the regional infrastructure of public services and, accordingly, reduce possible risks for all parties, as well as to offset such negative factors as high administrative overregulation, corruption, lack of guarantees of return on investment, etc.

In international practice, public-private partnership models are widely used, reflecting the scope of powers transferred to the private partner and the sequence of stages of this partnership, such as VOT, SOT, VOT, VMT, DBOT, DBFO. Foreign experience in implementing public-private partnership models in the context of development of the defence industry by public administration entities is analyzed in the works of Bakumenko V. D., Beznosenko D. O. [12]

These models are also considered in many works of domestic scholars as models of partnership between public authorities and business structures, but many of them cannot be implemented within the new legal framework, which makes it relevant to develop models that meet modern institutional conditions.

The methodological apparatus for developing models of intersectoral interaction of participants in public-private partnerships includes: definition of key concepts, substantiation of the approach to model formation, development of interaction models.

Our analysis of the relevant regulatory sources allowed us to identify 186 possible models of partnership between public administration entities and business structures. In order to systematize them, it is proposed to distinguish between basic and additional models, the latter of which are inherently cumulative. The following definitions may be offered to clarify the introduced concepts.

The basic model of public-private partnership is proposed to be understood as a mandatory set of project elements reflecting the sequence of participation of a business partner in a project, focused on the project product, i.e. the scope of special functions transferred to it, within the framework of an agreement with a public administration entity.

The total model of public-private partnership is a sequence built on the basis of one of the basic models, which reflects not only the scope of possible mandatory special functions within a specific agreement with a public administration entity, but also additional powers of both parties to intersectoral cooperation.

The basic models include:

1. CCOE (creation – co-financing – operation – encumbered property);
2. CFOE (creation – financing – operation – encumbered property);
3. CCME (creation – co-financing – maintenance – encumbered property);
4. CFME (construction – financing – maintenance – encumbered property);
5. CCOEP (construction – co-financing – operation and maintenance – encumbered property);
6. CFOEP (creation – financing – operation and maintenance – encumbered property).

That is, within the CCOE model, the public administration entity provides co-financing of the project implementation and maintenance of the project object after its completion, within the CFOE model – only maintenance of the project object after its completion, within the CCME model – co-financing and operation of the project object after its completion, within the CFME model – only operation, within the CCOEP model – co-financing, and within the CFOEP model – the management function of «control» of compliance with the agreement by the business structure.

It should be noted that the basic models are self-sufficient, reflecting the variability of possible special functions of business structures of partnership projects. At the same time, 11 additional elements can be identified, the combination of which forms 11 total models of the first stage, 10 total models of the second stage and 9 total models of the third stage.

The approach to the formation of aggregate models of public-private partnership is shown in Fig. 1.

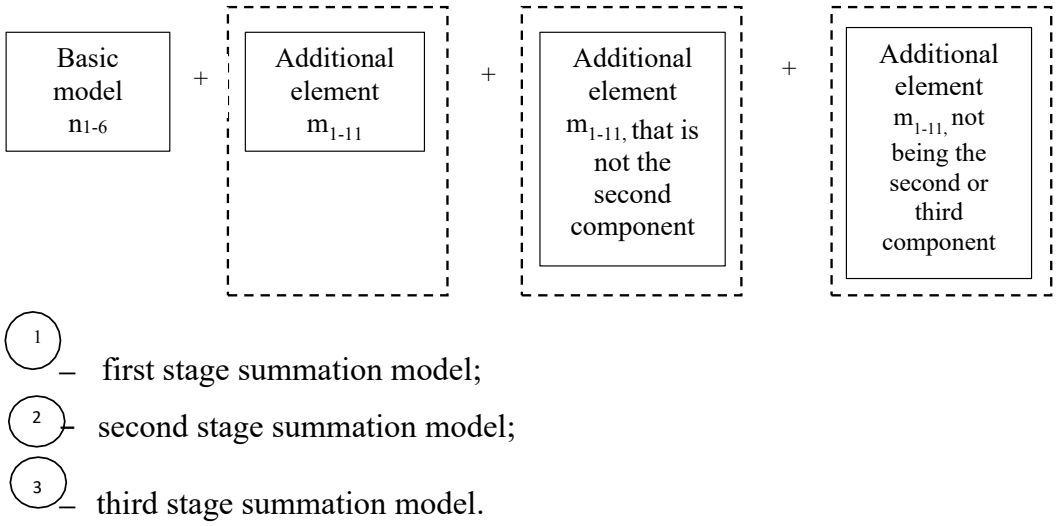

Fig. 1. The author's approach to the formation of total models of public-private partnerships

Source: compiled by the author

Table 1

Total models of public-private partnerships at the municipal level within the framework of the basic model of the SPPP [compiled by the author]

First stage summation models − CCOE+	Second stage summation models − CCOE ++	Third stage summation model − CCOE +++
1. Design – creation – co-financing – operation – property with encumbrances 2. Establishment – co-financing – operation – co-financing of operation – encumbered property 3. Creation – co-financing – operation – financing of operation – encumbered property 4. Establishment – co-financing – operation – co-financing of maintenance – encumbered property 5. Establishment – co-financing – operation – maintenance financing – encumbered property 6. Establishment – co-financing – operation – co-financing of operation and maintenance – encumbered property 7. Establishment – co-financing – operation – operation and maintenance financing – encumbered property 8. Establishment – co-financing – operation – financing of operation by a municipality – property with encumbrances 9. Creation – co-financing – operation – financing of maintenance by a municipality – property with encumbrances 10. Establishment – co-financing – operation – financing of operation and maintenance by municipalities municipalities – property with encumbrances 11. Establishment – co-financing – operation – property with encumbrances – property of the municipality	1. Design – creation – co-financing – operation – co-financing of operation – property with encumbrances 2. Design – construction – co-financing – operation – operation financing – encumbered property 3. Design – construction – co-financing – operation – co-financing of maintenance – encumbered property 4. Design – establishment – co-financing – operation – maintenance financing – encumbered property 5. Design – establishment – co-financing – operation – co-financing of operation and maintenance – encumbered property 6. Design – establishment – co-financing – operation – operation and maintenance financing – encumbered property 7. Design – creation – co-financing – operation – financing of operation by the municipality – property with encumbrances 8. Design – creation – co-financing – operation – maintenance financing by a municipality – property with encumbrances 9. Design – creation – co-financing – operation – financing of operation and maintenance by a municipality – property with encumbrances 10. Design – creation – co-financing – operation – encumbered property – property of a municipality – property of a municipality	1. Design – creation – co-financing – operation – co-financing of operation – property with encumbrances – property of a municipality 2. Design – creation – co-financing – operation – operation financing – encumbered property – municipal property 3. Design – creation – co-financing – operation – maintenance financing – encumbered property – municipal ownership 4. Design – creation – co-financing – operation – co-financing of maintenance – encumbered property – municipal ownership 5. Design – creation – co-financing – operation – financing of operation and maintenance – encumbered property – property of the municipality 6. Design – creation – co-financing – operation – co-financing of operation and maintenance – encumbered property – municipal property 7. Design – creation – co-financing – operation – co-financing of operation by the municipality – encumbered property – property of the municipality 8. Design – creation – co-financing – operation – co-financing of maintenance by the municipality – property with encumbrances – property of the municipality

Let's consider the process of forming the total public-private partnership models on the example of the municipal level within the framework of the basic SEA model. Note that the additional elements include the following components: design, co-financing of operation, financing of operation, co-financing of maintenance, financing of maintenance, co-financing of operation and maintenance, financing of operation and maintenance, financing of operation and maintenance, financing of operation by the municipality, financing of maintenance by the municipality, financing of operation and maintenance by the municipality, ownership As a result, we get 30 total models presented in Table 1.

The developed models can be adapted to process additional elements of the studied process in case of changes in the powers of public administration entities.

Let us note the specifics of public-private partnership projects from the perspective of project management, which is reflected in the proposed models. The key feature is that they are considered to be completed not when the project product is received under resource constraints, but when its intended use is realized within the period specified in the agreement with the public administration entity (Fig. 2)

Let us correlate partnership models based on the allocation of special functions within the framework of public-private interaction with the management functions allocated in the classical school of management (school of administrative management), the development of scientific provisions of which is associated with the names of A. Fayol, L. Urwick, J.D. Mooney, A.K. Reilly, A.P. Sloan, and determine the dominants for each model.

The matrix of dominant management functions of a public administration entity within the framework of the basic models developed by the author, based on special functions performed by a private partner, is presented in Fig. 3.

Development of a matrix for all the proposed total models is impractical, since the dominants will correspond to the basic models.

The key dominant is understood as a management function that should be paramount for a public administration entity when participating in a project under a particular model. The core dominant ensures that the private partner performs special functions. The necessary function is an integral element of project management by the public partner, but is less important in relation to the implementation of special functions by the private partner.

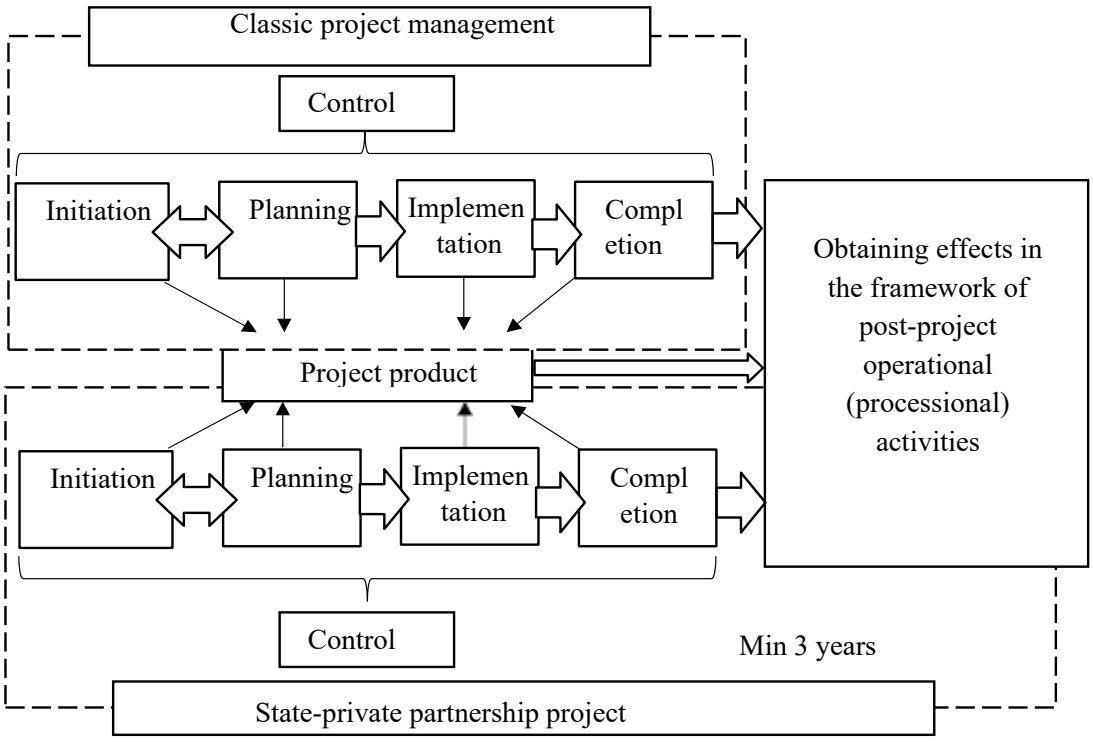

Fig. 2. Specifics of implementing the project approach within the framework of public-private partnership: post-project context

Source: compiled by the author

	CCOE	CFOE	CCME	CFME	CCOEP	CFOEP
Planning						
Organization						
Management						
Coordination						
Control						
Motivation						

Fig. 3. Matrix of dominant management functions of a public administration entity within the framework of basic models of public-private partnership projects

Source: compiled by the author

The Planning function in the context of public-private partnership projects involves planning financial, time and material resources for interaction in order to achieve the project goals. The organization function is the creation of structures of authorized bodies in the public administration system, streamlining the sequence of actions and assigning responsibility to persons exercising certain powers within the projects. «Management» is the function of determining how to achieve the goals within the project stages. Coordination function – ensuring the interaction of all project participants and the implementation of actions aimed at achieving its goals. Control function – accounting and analysis of compliance with the provisions of the partnership agreement. «Motivation» – creating conditions for the implementation of partnership agreements.

Conclusions. The problems discussed in this article have a significant impact on the implementation of PPP projects, up to their unsuccessful completion or early termination. It is also worth noting that PPP mechanisms are mostly used in the formation of infrastructure facilities and much less often in the provision of services (service partnership). If PPP mechanisms are properly applied in the processes of providing life-support services and building infrastructure, it is possible to not only minimize the budgetary burden but also meet the needs of the population for affordable and high-quality services, in particular through the development of the innovative component of the process.

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Кудріна О. Ю., Колоколов С. В. Розробка моделей міжсекторної взаємодії учасників проектів державно-приватного партнерства

В статті доведено, що за допомогою реалізації проектів державно-приватного партнерства в процесах формування інфраструктури послуг життєзабезпечення населення регіону можлива найефективніша реалізація завдань, які стоять перед органами влади, із задоволення попиту населення на доступні та якісні послуги, із забезпечення населення якісними та доступними послугами з одночасним зниженням бюджетного навантаження. Визначено, що для досягнення вищеназваних результатів необхідно дотримуватися таких умов: органами влади мають бути чітко визначені цілі проекту, причому ці цілі мають корелюватися зі стратегічними напрямами соціально-економічного розвитку; має бути сформована система комплексної державної підтримки проектів ДПП (фінансова, інституційна, методична, кадрова, юридична тощо); процедури в рамках розроблення та реалізації проектів ДПП мають вирізнятися максимальною ясністю і прозорістю; реальна політична, фінансова та юридична підтримка уряду; проекти повинні мати чітку й ефективну структуру та розподіл ризиків. Крім того, необхідне створення системи взаємодій між суб'єктами партнерства, з ясним визначенням прав, обов'язків і гарантій.

Сформовано методологічний апарат розробки моделей міжсекторної взаємодії учасників державно-приватного партнерства, заснованих на спеціальних функціях, виконуваних приватним партнером. Проведений автором аналіз дозволив розробити 186 можливих моделей партнерства (6 базових, 180 – сумарних моделей першого, другого та третього ступенів). Базова модель державно-приватного партнерства – це обов'язковий набір елементів проекту, що відбиває послідовність участі бізнес-партнера в проекті, а також обсяг спеціальних функцій, що передаються йому в рамках угоди з суб'єктом публічного управління. Сумарна модель державно-приватного партнерства – це побудована на основі однієї з базових моделей послідовність, що відображає не тільки обсяг можливих обов'язкових спеціальних функцій у межах конкретної угоди з суб'єктом публічного управління, але і додаткових функцій у рамках наведених процесів для обох сторін міжсекторної взаємодії.

Ключові слова: *проект, державно-приватне партнерство, реалізація, міжсекторна взаємодія, модель.*