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I. ZACHKO, A. IVANUSA, D. KOBYLKIN

HYBRID MANAGEMENT OF PROGRAMS OF TERRITORIAL SYSTEMS DEVELOPMENT PROJECTS BY MEANS OF CONVERGENCE MECHANISMS

Introduction. Implementation of program projects of social and economic development of the territories of Ukraine is inefficient, with overspending of the budget and completion not at the set time. This is due to the use of reactive project management methodologies that do not take into account the complexity of project implementation, the turbulence of the project environment. The lack of hybrid mechanisms for managing project programs of socio-economic development of territories based on the convergence of different methods of project management is an unresolved problem. The implementation of socio-economic development project programs is carried out using the mechanisms of financial regulation of territories on the basis of the "recipient-donor" model. Therefore, the development of mechanisms for hybrid management of project programs of socio-economic development of territorial systems based on the convergence of key methods of project management is an urgent scientific task. **Purpose.** The purpose of the work is to develop mechanisms for hybrid management of program projects of socio-economic development of the regions of Ukraine using the tools of financial regulation, public-private partnership and convergence of these mechanisms. **Methods.** The methods of hybridization and convergence of project management methodologies are used in the article. **Results.** Based on research, it is proved that the implementation of program projects of socio-economic development of territories requires the use of various components of project management through hybridization and convergence. The terminological base of project management has been expanded by introducing new definitions "hybrid project management of socio-economic development projects", "convergence of project management mechanisms". Processes of management of program projects of social and economic development of territories, on the basis of model "recipient-donor" are formalized. **Conclusion.** The analysis of current trends in the implementation of complex programs of socio-economic development projects has shown the ineffectiveness of existing project management methodologies associated with the lack of mechanisms for hybrid project management based on convergence of best practices in project management projects. A convergent model of hybrid management of projects of socio-economic development of territories by means of identification of the main challenges and problems in the life cycle of the regional system is developed, which takes into account indicators of project success in the program based on analysis of project management best practices.

Keywords: hybrid management; convergence; program; projects of socio-economic development; management mechanisms; territorial systems.

Introduction

The implementation of programs for socio-economic development of territories takes place in a complex socio-cultural multi-project environment with elements of turbulence, risks and uncertainty, as well as under the influence of external and internal political factors.

In Ukraine, the implementation of programs of socio-economic development projects of territorial systems is inefficient in terms of compliance with the established budget, time frame, as well as the final expectations of the final stakeholders and project users. First of all, this is due to the use of classical project management methodologies that are not flexible in a complex multi-project environment and do not take into account the turbulence of the project environment.

Most programs of projects of socio-economic development of territorial systems are implemented on the basis of the model "recipient-donor" with a load on local and state budgets. Best practices in project management with international experience are characterized by the convergence of different project management methods that form the methodology of hybrid project management using scientifically sound metrics of combination of key stakeholders in the investment phase of the project: government, regional government, community, international funding, funding, own funds of enterprises of the region, funds of public projects.

The scientific works of many scientists, in particular V.M. Burkov, S.D. Bushuyev, V.D. Gogunsky, I.V Kononenko, H. Tanaka, O.B.Zachka, S.K.Chernova, I.V. Chumachenko and others are devoted to the issue of hybrid management of complex programs of projects of social and economic development of territorial systems. However, in the known literature there are relatively few works in which research would be focused on various aspects of such an important area of program management of socio-economic development projects in conditions of uncertainty as hybrid project management using convergence mechanisms.

In particular, in [1-6] the peculiarities of identification and management of infrastructure projects are considered. The application of hybrid management methodology for infrastructure projects, features of their hybridization and problems of multilevel hybrid management are described. In [7, 10] the mechanisms of convergence of project management methodology and their system model are considered. The main standards and guidelines for project management, programs and project portfolios are described in [8-9]. Principles of formation of portfolios of projects of improvement of systems of safety, their theoretical approaches in management of safety of projects of development of difficult systems are described in works [11-13]. The study of the process of application of office project-oriented management and formalization of factors influencing infrastructure projects is described in studies [14-15]. In [16] the peculiarities of the functioning of hybrid organizations and the processes of their management are described. Features of the functioning of hybrid peace projects are described in [17]. Selective linking in response to competing institutional logics in hybrid organizations is described in [18].

The main and general disadvantage of existing

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research is the lack of implementation of a convergent approach with hybridization of key mechanisms of project management. The study of innovative methods of project management of territorial systems development projects, in particular, hybridization and convergence of best practices of project management requires a scientifically sound system of metrics for the success of such projects. There is a need to use analytical and experimental research to develop effective mechanisms for hybrid management of project programs of socio-economic development of territories based on the convergence of best practices of project management.

Research methods are to apply the mechanisms of convergence of best practices in program management of complex projects, which will form a new paradigm of hybrid program management of projects of socio-economic development of territories.

Research results

Based on theoretical research, it is proved that the implementation of programs of socio-economic development projects, which occurs under the influence of environmental turbulence and the dynamics of changes in multiproject environment, taking into account the different nature of factors, requires different components of project management through hybridization and convergence.

The terminology base of project management has been expanded by introducing new definitions of “hybrid project management of socio-economic development projects”, “convergence of project management mechanisms”, which complement existing methodologies in terms of regional development program management and take into account best project management practices..

Definition 1. Hybrid project management of socio-economic development projects is a combination of project management mechanisms with the integration of the values of key stakeholders of the program to the holistic mission of the territorial system, provided by the convergence of best practices of project management.

Definition 2. "Convergence of project management mechanisms" - the formation of a set of methods and models of project management for the development of complex systems based on the integration of project management methodologies and best practices of project management in the focus of regional project programs.

The existing processes of management of programs of projects of social and economic development of territories which are realized on the basis of model "recipient-donor" with identification of key stakeholders of an investment phase of the project are formalized: state bodies, regional authorities, community, and international financing funds, grant organizations, sponsorship funds enterprises of the region, funds of public projects.

Literary and information analysis showed that most regional programs for the development of socio-economic systems are implemented in the model "recipient-donor" with a specific burden on local and state budgets (table 1).

Table 1. *The "Recipient - Donor" model in the implementation of programs of projects for the socio-economic development of territorial systems*

Recipient (regional territorial system)	**Donor (investment fund of the socio-economic development project program)**				
	Local budget	**State budget**	**Public-private partnership projects**	**International funds**	**Cross-border programs**
Territorial system 1	K_{11}	K_{12}	K_{13}	K_{14}	K_{15}
…	K_{ij}	K_{ij}	K_{ij}	K_{ij}	K_{ij}
Territorial system n	K_{n1}	K_{n2}	K_{n3}	K_{n4}	K_{n5}

where K_{ij} is an attraction coverage ratio for the *i*-th territory of the *j*-th program project financing fund.

In the existing realities for successful application of the best practices of project management it is necessary to develop mechanisms of hybrid management of programs of projects of social and economic development of territories taking into account metrics of co-financing according to realities of the multiproject environment.

For the most profitable and cost-effective implementation of projects of socio-economic development of territories with a high rate of return, it is necessary to diversify financial resources and stakeholder entities in order to strengthen convergence, including and private business and its interests. This approach diversifies not only the sources of funding, but also the risks that will be shared between different stakeholders and their interest to act more synergistically to address them, the possibility of more flexible solutions to funding irregularities, optimization of resource consumption, non-compliance with agreed deadlines, etc. Such a mechanism is effective and feasible in the application of Ukrainian legislation and correlates with the paradigm of public-private partnership for Sustainable Development 2030 (People First PPPs), which allows to initiate such projects by both public authorities and private business.

To date, there are a number of obstacles to the actual implementation and enforcement of such convergence methodologies through:

- Low awareness of potential opportunities.
- Lack of pilot projects.
- Lack of experience in implementing similar projects in Ukraine in general in their full cycle.
- Lack of qualified specialists and potential investors to finance and attract such projects.
- Involvement of international technical assistance for project management and structuring.

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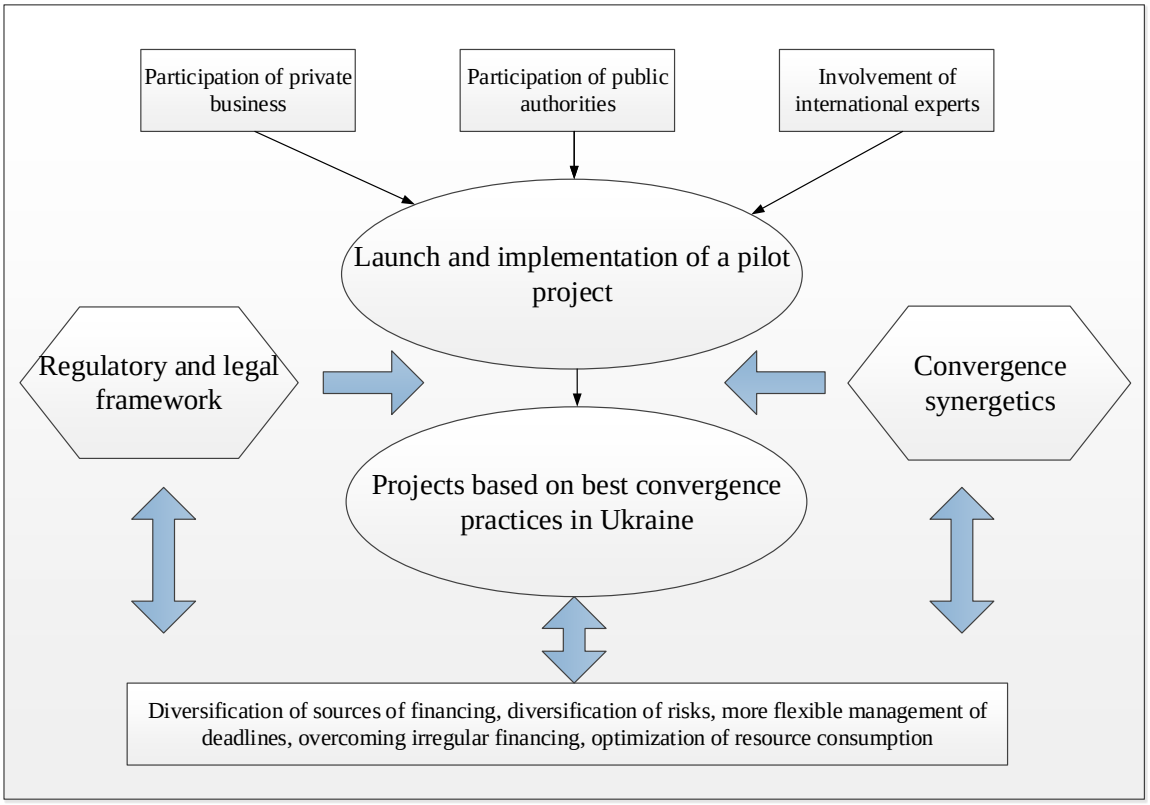

Fig. 1. Model-scheme of factors influencing obstacles to the implementation of convergent methodologies in the management of territorial systems development projects

The model scheme is based on the launch and implementation of pilot projects for the development of territorial systems by means of convergence mechanisms, which is formed from the components of attracting private business, public authorities and the help of international experts. Let's represent the expression as a tuple (1).

$$Lz = \langle Ib; Ia; Ie \rangle, \quad (1)$$

where Lz – launch and implementation of a pilot project; Ib – private business participation; Ia – participation of the public authorities; Ie – participation of international experts.

When implementing a pilot project for the development of territorial systems, the influence of factors of convergence synergetic and the requirements of the regulatory framework put forward for its regulation, projects are selected based on the best convergence practices in Ukraine, which is written by the expression (2).

$$\left.\begin{matrix}\{Sk\}\\ \{Jk\}\\ \{Lz\}\end{matrix}\right\} = Pk, \quad (2)$$

where Pk – projects based on best convergence practices in Ukraine; Sk – convergence synergetic; Jk – regulatory and legal framework.

However, it should be borne in mind that at this stage, the implementation of convergence projects is not possible without taking into account the ongoing process of diversification. It is accompanied by the financial component of the project; overcoming the irregularity of funding; emerging risks; flexible deadline management; optimization of resource consumption, which is described by the expression (3).

$$\left.\begin{matrix}\{Sk\}\\ \{Pk\}\\ \{Jk\}\end{matrix}\right\} \Leftrightarrow Dk, \text{ at this } Dk \in (k_i; k_{in}; k_{in+1}), \quad (3)$$

where Dk – the process of diversification of funding sources; overcoming its irregularity, the risks that arise; flexible deadline management; optimization of resource consumption.

Project management of territorial systems development is a complex organizational and technical process. The process is complicated by the constant change in the impact of the project environment, the need to adapt different atypical (hybrid) approaches, project management methodologies, programs and project portfolios and the need to take into account in the planning process of this type of project convergence factors. On the basis of the system analysis the model of hybrid management of the program of projects of development of territories is constructed (fig. 2).

The model is based on the parameters of the convergence coefficient. In the context of hybrid management, the convergence factor is a tool that provides processes for managing programs and projects for the development of territorial systems and their interaction with stakeholders.

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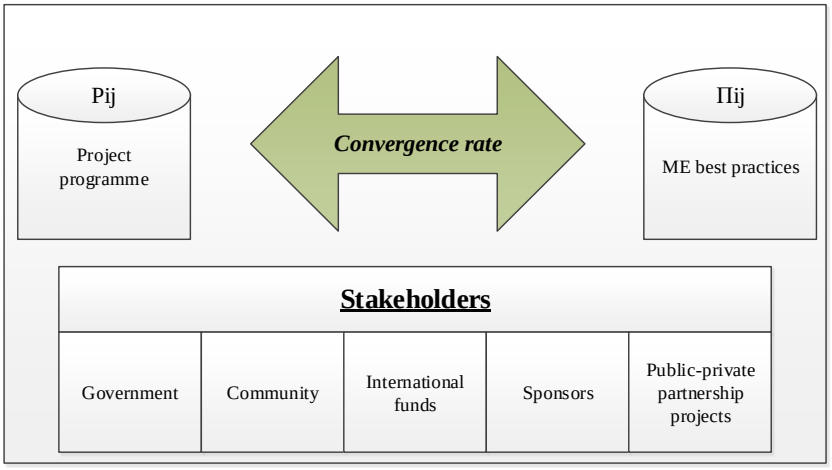

Fig 2. Model of the structure of objects and subjects of hybrid management of the program of territorial development projects

The main stakeholders of the territorial development project implementation program will be the following components: government, community, international funds, and sponsorship and public-private partnership projects. Thus, formally stakeholders of the hybrid management program of territorial development projects can be written as an expression (4).

$$Sh = \langle Gv; Lo; If; Sr; Ph \rangle, \quad (4)$$

where *Sh* – stakeholders of the territorial development project program; *Gv* – authorities; *Lo* – local communities; *If* – involved international funds; *Sr* – sponsors; Ph – public-private partnership projects.

Whereas the parameters of the convergence factor directly depend on the application, in the process of planning and implementation of best practices in project and program management; standard structured projects and programs and their interaction with stakeholders so the process dependence of elements of hybrid management of the program of projects of development of territories is formed. We describe the formed dependence of the expression (5).

$$Kij\{Sh\} \Leftrightarrow \langle Pi | \Pi i \rangle, \quad (5)$$

where *Pij* – programs, territorial development project; *Пij* – best practices in project management, programs and project portfolios.

The influence of the parameters of the convergence coefficient on the program of territorial development projects is carried out throughout the life cycle. However, the greatest impact with the maximum possible positive or negative consequences is carried out at the planning stage. The solution to this impact lies in the context of identifying the main challenges and problems faced by the project in the life cycle of the regional system. Taking into account these features and the impact of convergence coefficient parameters on the project, a convergent model of hybrid project management of socio-economic development of territories by means of identifying the main challenges and problems in the life cycle of the regional system (see fig. 3).

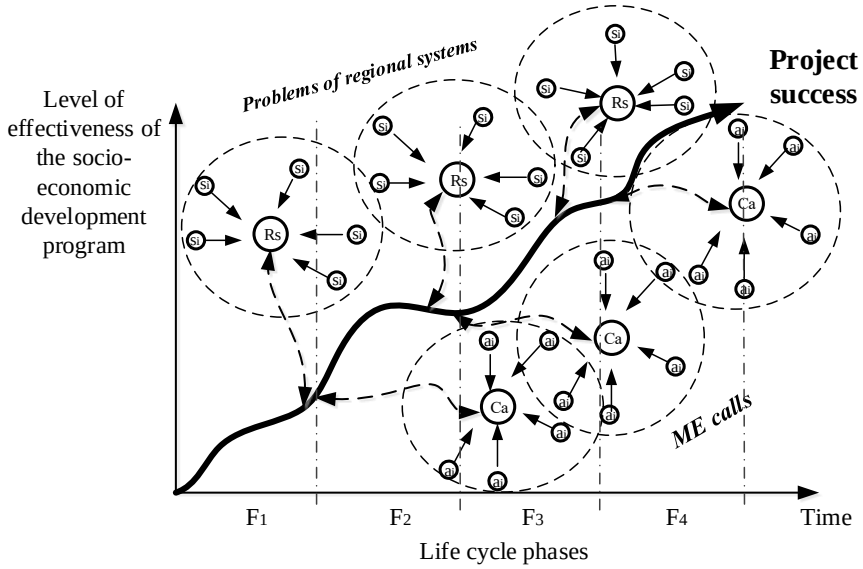

Fig. 3. Converged model of hybrid management of projects of socio-economic development of territories by means of identifying the main challenges and problems in the life cycle of the regional system,
where F_1 – initiation phase; F_2 – planning phase; F_3 – implementation phase; F_4 – launching phase.

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The model is based on the possible development of the project during the life challenge on the way to success. The model is built in the system of ordinates of the project life cycle time and the level of efficiency of the program of socio-economic development of the territorial development project. The hybrid impact of the project environment forms the problems of system functioning in the context of the regional component of project implementation and the impact of challenges of adaptation of the project and program management system. The regional component of implementation includes: features of the territory, turbulent environment, thermo-historical component, socio-economic component, etc. We describe the regional component of the expression (6).

$$Rs \Rightarrow [Sp], \text{ at this } Rs \in (s_i; s_{in}; s_{in+1}), \quad (6)$$

where *Rs* – problems of regional systems; *Sp* – success of the project of socio-economic development of territories by identifying the main challenges and problems in the life cycle of the regional system.

Taking into account the challenges that arise in the life cycle of the implementation of programs of development projects in the conditions of hybrid management, we write the dependence (7),

$$Ca \Rightarrow [Sp], \text{ at this } Ca \in (a_i; a_{in}; a_{in+1}), \quad (7)$$

where *Ca* – the process of influencing the challenges of applying the provisions of the methodology of project and program management and their transformation into a process of hybrid project management of socio-economic development. It should be taken into account that the intensity of the impact of factors Rs or Ca success curve of the project will change throughout the life cycle and will form the appropriate level of effectiveness of the program of socio-economic development. Quantitative indicators of Si and Ca values will depend on both the regional features of the project implementation and the parameters of the convergence factor, and at different stages they will interact within 1 block of the process, or 2 or more at the same time.

Conclusions

The informational and literary analysis of current trends in the implementation of complex programs of socio-economic development projects in Ukraine showed the ineffectiveness of existing project management methodologies associated with the lack of mechanisms for hybrid project management based on convergence.

A convergent model of hybrid management of projects of socio-economic development of territories by means of identification of the main challenges and problems in the life cycle of the regional system is developed, and takes into account indicators of success of projects in the program based on analysis of best practices of project management.

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Зачко Ірина Григорівна – Львівський державний університет безпеки життєдіяльності, здобувач, Львів, Україна; email: irynazachko@gmail.com; ORCID: https://orcid.org/0000-0001-8846-8828.

Зачко Ирина Григорьевна – Львовский государственный университет безопасности жизнедеятельности, соискатель, Львов, Украина.

Zachko Iryna – Lviv State University of Life Safety, Researcher, Lviv, Ukraine.

Івануса Андрій Іванович – кандидат технічних наук, доцент, Львівський державний університет безпеки життєдіяльності, доцент кафедри права та менеджменту у сфері цивільного захисту, Львів, Україна; email: ivaaanusa@gmail.com; ORCID: https://orcid.org/0000-0001-9141-8039.

Ивануса Андрей Иванович – кандидат технических наук, доцент, Львовский государственный университет безопасности жизнедеятельности, доцент кафедры права и менеджмента в сфере гражданской защиты, Львов, Украина.

Ivanusa Andriy – PhD (Engineering Sciences), Associate Professor, Lviv State University of Life Safety, Associate Professor of the Department of Law and Management in the Field of Civil Protection, Lviv, Ukraine.

Кобилкін Дмитро Сергійович – кандидат технічних наук, Львівський державний університет безпеки життєдіяльності, доцент кафедри права та менеджменту у сфері цивільного захисту, Львів, Україна; email: dmytrokobylkin@gmail.com; ORCID: https://orcid.org/0000-0002-2848-3572.

Кобылкин Дмитрий Сергеевич – кандидат технических наук, доцент, Львовский государственный университет безопасности жизнедеятельности, доцент кафедры права и менеджмента в сфере гражданской защиты, Львов, Украина.

Kobylkin Dmytro – PhD (Engineering Sciences), Associate Professor, Lviv State University of Life Safety, Associate Professor of the Department of Law and Management in the Field of Civil Protection, Lviv, Ukraine.

ГІБРИДНЕ УПРАВЛІННЯ ПРОГРАМАМИ ПРОЄКТІВ РОЗВИТКУ ТЕРИТОРІАЛЬНИХ СИСТЕМ ЗАСОБАМИ МЕХАНІЗМІВ КОНВЕРГЕНЦІЇ

Постановка проблеми. Реалізація програм проєктів соціально-економічного розвитку територій України відбувається неефективно, з перевитратами бюджету та завершенням не у встановлений час. Це пов’язано з використанням реактивних методологій управління проєктами, що не враховують складність реалізації проєктів, турбулентність проєктного оточення. Відсутність гібридних механізмів управління програмами проєктів соціально-економічного розвитку територій на основі конвергенції різних методів управління проєктами є невирішеною проблемою. Реалізація програм проєктів соціально-економічного розвитку відбувається з використанням механізмів фінансового регулювання територій на основі моделі «реципієнт-донор». Тому розроблення механізмів гібридного управління програмами проєктів соціально-економічного розвитку територіальних систем на основі конвергенції ключових методів проєктного менеджменту є актуальною науковою задачею. **Мета.** Мета роботи полягає у розробці механізмів гібридного управління програмами проєктів соціально-економічного розвитку регіонів України з використанням інструментів фінансового регулювання, публічно-приватного партнерства та конвергенції цих механізмів. **Методи.** У роботі використано методи гібридизаці та конвергенції методологій управління проєктами. **Результати.** На підставі досліджень доведено, що реалізація програм проєктів соціально-

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економічного розвитку територій, потребує застосування різних компонент проєктного менеджменту, шляхом гібридизації та конвергенції. Розширено термінологічну базу управління проєктами шляхом введення нових означень «гібридне управління програмою проєктів соціально-економічного розвитку територій», «конвергенція механізмів управління проєктами». Формалізовано процеси управління програмами проєктів соціально-економічного розвитку територій, на основі моделі «реципієнт-донор». **Висновки.** Проведений аналіз сучасних тенденцій реалізації складних програм проєктів соціально-економічного розвитку засвідчив неефективність діючих методологій проєктного менеджменту, повязаних з відсутністю механізмів гібридного управління проєктами на основі конвергенції кращик практик управління програми проєктів територіального розвитку. Розроблено конвергентну модель гібридного управління проєктами соціально-економічного розвитку територій засобами ідентифікації основних викликів та проблем в життєвому циклі регіональної системи, що враховує індикатори успіху проєктів в програмі на основі аналізу кращих практик проєктного менеджменту.

Ключові слова: гібридне управління; конвергенція; програма; проєкти соціально-економічного розвитку; механізми управління; територіальні системи.

ГИБРИДНОЕ УПРАВЛЕНИЕ ПРОГРАММАМИ ПРОЕКТОВ РАЗВИТИЯ ТЕРРИТОРИАЛЬНЫХ СИСТЕМ СРЕДСТВАМИ МЕХАНИЗМОВ КОНВЕРГЕНЦИИ

Постановка проблемы. Реализация программ проектов социально-экономического развития территорий Украины происходит неэффективно, с перерасходами бюджета и завершением не во установленное время. Это связано с использованием реактивных методологий управления проэктам, не учитывают сложность реализации проектов, турбулентность проектно окружения. Отсутствие гибридных механизмов управления программами проектов социально-экономического развития территорий на основе конвергенции различных методов управления проэктам является нерешенной проблемой. Реализация программ проектов социально-экономического развития происходит с использованием механизмов финансового регулирования территорий на основе модели «реципиент-донор». Поэтому разработка механизмов гибридного управления программами проектов социально-экономического развития территориальных систем на основе конвергенции ключевых методов проектно менеджмента является актуальной научной задачей. **Цель.** Цель работы заключается в разработке механизмов гибридного управления программами проектов социально-экономического развития регионов Украины с использованием инструментов финансового регулирования, государственно-частного партнерства и конвергенции этих механизмов. **Методы.** В работе использованы методы гибридизаци и конвергенции методологий управления проэктам. **Результаты.** На основании исследований доказано, что реализация программ проектов социально-экономического развития территорий, требует применения различных компонент проектно менеджмента, путем гибридизации и конвергенции. Расширен терминологическую базу управления проэктам путем введения новых определений «гибридное управление программой проектов социально-экономического развития территорий», «конвергенция механизмов управления проэктам». Формализована процессы управления программами проектов социально-экономического развития территорий на основе модели «реципиент-донор». **Выводы.** Проведенный анализ современных тенденций реализации сложных программ проектов социально-экономического развития показал неэффективность действующих методологий проектно менеджмента, связанных с отсутствием механизмов гибридного управления проэктам на основе конвергенции кращик практик управления программы проектов территориального развития. Разработан конвергентную модель гибридного управления проэктам социально-экономического развития территорий средствами идентификации основных вызовов и проблем в жизненном цикле региональной системы, учитывающей индикаторы успеха проектов в программе на основе анализа лучших практик проектных менеджмента.

Ключевые слова: гибридное управление; конвергенция; программа; проекты социально-экономического развития; механизмы управления; территориальные системы.

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