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DEVELOPMENT OF TOOLS FOR MANAGING INITIATIVE PROJECTS BASED ON A VARIABLE APPROACH

The results of the study of the processes of managing initiative projects in the public administration system, presented in the article, indicate the possibility of successful application of the tools of a variable approach to managing initiative projects in order to increase the efficiency of their formation and use. Three methodologies are proposed to be used as the main tools of a variable approach to managing initiative projects: Agile (an approach to project management aimed at increasing the speed of creating innovative products with minimal risks and errors during project implementation), Scrum (an approach that involves the activities of a project team consisting of highly specialised employees), Kanban (a method that differs from the previous two by the absence of the roles of product owner and moderator). It is proposed to introduce a virtual office, which is represented by interconnected information resources (systems for entering information, processing, exchanging, transmitting and storing it) that reflect the project implementation and allow for coordinated and organised management of all processes of managing geographically distributed members of the initiative project team. To manage an initiative project, the article proposes a scenario matrix for expanding the possibilities of implementing organisational innovations in the Smart City project (currently not used or at the initial stage of use), which allows linking variable approaches to initiative project management, which determines the areas of influence on the project through the implementation of the relevant tool. Based on an analysis of the principles and results of implementing a variable approach to initiative project management in the Smart City public administration system, the article proposes a template for a toolkit for variable management of initiative projects in various fields, using the example of construction. On the basis of this template, it is possible to build management of the formation and implementation of initiative projects in various fields based on the implementation of various activities required to implement innovations and use of variable project management tools.

Key words: *management, tools, initiative project, variable approach, public administration.*

Formulation of the problem. In the current economic environment, characterised by geopolitical instability and changes in consumer preferences, there is an urgent need to form and develop new organisational and managerial mechanisms that promote the intensification of innovation processes in various sectors of the economy. processes in various sectors of the economy. In this regard, the problem of forming and developing a mechanism for managing initiative projects and effective methods of its implementation is seen as one of the key problems of the modern economy, and the mechanism itself is considered to be among the promising technologies that will give a new impetus to the innovative development of various industries.

A study of current market trends has revealed clear contradictions between the newly created opportunities for using innovations at all stages of their life cycle and the insignificant degree of their attractiveness, which makes it important to form and develop a mechanism for managing initiative projects.

Analysis of recent achievements and publications. Among the scientific works, we would like to highlight the works devoted to the study of variable project management at the macro level and at the level of business entities. Variable management at the macro level is considered in the works of: S. Ashmore, R. Runyan, who studied flexibility as a principle opposite to conservative principles; I. Mitchell, L. Adkins, whose works describe dynamic (flexible) control systems as a combination of individual systems. Scientific publications on the study of variable project management at the level of business entities reflect flexible management as approaches and principles to project management in the field of construction, real

estate operation, energy innovations, etc. Particularly noteworthy are the works of P. Daneshgari, M.Y. Johansson, N.V. Shevchenko, M.V. Davydenko, which are devoted to the theoretical analysis of the use of a flexible approach to innovation management, the study of business management models used in the industries, construction and energy; the formation of measures to improve the practice of using dynamic project management approaches in the public sector. The **purpose of the article** is to develop tools for managing initiative projects based on a variable approach, which has not been and is not being given sufficient attention by domestic and foreign researchers.

Presentation of the main material. The basic management mechanism (mechanism of functioning) is understood as a set of rules, procedures, regulations, norms that regulate the decisions made at the stages of functioning of the organisation's management object [9]. The proposed approaches to the formation of a mechanism for managing initiative projects should be created taking into account its essence, which includes:

– methods and forms of operational and tactical management;

– control parameters with elements of self-organisation;

– a system of financial and administrative restrictions;

– legislative and legal norms and motivation system;

– information system.

When creating an organisational and economic management mechanism, methods of visualisation, experiments, testing of economic and mathematical modelling, etc. are used. The achievement of management goals is influenced by the limitations of the resource base, reflecting economic, political, geographical and environmental factors.

Further, it is advisable to pay attention to theoretical issues of management, i.e. to consider [4]:

– factors, principles, methods, mechanisms and forms of their implementation;

– organisational structure of management;

– management subjects.

The principles of management include the principles of decentralisation, partnership, mobility and adaptability, competence, integration, openness, accessibility and completeness of information.

It should be emphasised that the essence of the development of management impacts is determined by identifying deviations of existing parameters from their normative values. The methods used for this purpose are shaped by the system of market relations. In management practice, direct and indirect methods are used [13].

The conducted studies reflect the effectiveness of the programme-targeted approach to managing the socio-economic activity of territories. Over the past years, there has been a need for targeted enterprise development programmes.

In order to create an effective management mechanism, researchers propose a set of main management tasks and determine the priority of their implementation [7]:

1. Formulation of industry development goals.

2. Analysing the environment, identifying the strengths and weaknesses of organisations.

3. Analysis of the available resource base.

4. Formation of strategy and conceptualisation.

5. Planning and implementation of strategic activities.

6. Analysis of the achieved results, adjustment of goals and ways to achieve them.

In modern research, the term ‘innovation management’ is understood as a management activity based on the development, organisation, planning, motivation and control of management decisions that can ensure the achievement of the desired results, characterised by a significant improvement in the quality characteristics and results of activities (technological, organisational and managerial, product, production, social, etc.

Thus, the innovative management mechanism includes two subsystems: managed and controlling. The object of management is economic relations, the innovation process and implemented innovations [6]. The subject of management are public authorities and business entities that stimulate and implement innovations.

Today, the development of innovative activity provides the entities engaged in it with additional competitive advantages, allowing them to act in the trend of variations in the economic situation in the market. On this basis, improving the tools for managing initiative projects in the public administration system determines the quality of the results of innovation planning and the successful implementation of projects.

The set of measures includes:

– defining the goals and objectives of research;

– conducting research and development activities with due regard for plan adjustments;

– development of organisational innovation projects and R&D activities;

– analysing and evaluating the effectiveness of alternative innovation projects and selecting the best one;

– analysing the risks of implementing innovative projects;

– formulation and implementation of a marketing strategy;

– commercialisation of the results obtained.

Implementing an initiative project in the field of, for example, housing construction involves capital expenditures, large volumes of resources used during construction, a significant cost of making changes to the constructed physical objects, as well as a high labour intensity of the pre-design and design stages. That is why initiative projects are traditionally managed on the basis of a cascade model, which stipulates that each subsequent phase of the project begins after the previous one is completed.

We propose to use a variable approach to the management of initiative projects in the public administration system based on a dynamic (flexible) approach by stages of the project life cycle.

Thus, in the study, a variable (dynamic, flexible) approach to project management is understood as an iterative (step-by-step) approach that focuses on the stages of the project life cycle, taking into account requests. A variable approach to managing initiative projects in the public administration system involves the active influence, adaptability, and flexibility of the management system, designed to influence the managed system to achieve a state that optimally meets new requirements [7].

The scientific literature presents the point of view that a variable approach to managing initiative projects in the public administration system is implemented under the following conditions [12]:

Given that the innovative product is not yet on the market, end users cannot evaluate the result of the initiative project in terms of functionality;

the priorities of consumers, users, and the priorities of the project management company are constantly changing;

An ecosystem has been formed, with participants cooperating and being within geographical reach of each other.

The variable approach to the management of initiative projects in the public administration system provides the opportunity to change management decisions directly during the project implementation, regardless of whether previously adopted decisions are implemented or not.

Due to a certain regulatory toolkit that contributes to the formation and development of innovations, European states intend to promote the development and testing of new innovative technologies, ensure environmental protection and increase the competitiveness of innovation entities.

The variable approach is a set of principles and target settings that the initiative project team can use when making certain management decisions, in turn, dynamic, flexible, adaptive management allows you to significantly increase the possibilities of its application in innovation activities, which is confirmed by the increase in the number of scientific publications devoted to the study of the prospects for using this tool for managing initiative projects in various areas.

We propose the basic principles for using the tools of the variational approach for managing initiative projects (Table 1).

As the main tools of the variant approach to the management of initiative projects, it is proposed to use three methodologies:

1. Agile – an approach to project management aimed at increasing the speed of creating innovative products with minimal risks and errors during the project implementation. These conditions are achieved by providing flexibility to the implementation processes and interactive interaction of team members with the customer. Initially, this methodology was used in the field of software development, and later it began to be used in other business sectors – at oil and gas industry enterprises, in the banking sector, in government institutions.

2) Scrum – an approach that involves the activities of a project team, which includes highly specialized employees (analysts, programmers, testers, etc.), who, together with the product owner and scrum manager (moderator), collect information and formulate business requirements for the project, form connections between customers and performers during general project monitoring.

3. Kanban is a method that differs from the previous two in the absence of the roles of the product owner and moderator. Instead of universal sprints in project implementation, task execution stages are used. The entire project implementation process is conventionally divided into stages: planning, development, testing, completion. The implementation of each stage is displayed on a special Kanban screen.

Currently, the practical use of a variable approach to managing initiative projects is

Table 1

Basic principles for using the tools of the variational approach for managing initiative projects

Principles	Summary
Flexibility of project implementation	Systematic analysis of possible ways to improve the efficiency of project implementation and, accordingly, correct the activities of the project team
Adaptability of project implementation	Project development is carried out in competitive conditions that are constantly changing, sometimes even at the completion of the next project cycle, the market itself may change due to the release of a similar product. Then the project is refined using the experience of a competitor's market product
Dynamism	This means iterative, step-by-step implementation of the project, focusing on the stages of its life cycle implementation, taking into account consumer requests
Principle of project team motivation	Creating conditions that do not hinder the realization of the team's potential in the project: interest of team members in project implementation, communication tools, interaction conditions, materials, equipment, etc.
Customer satisfaction	Work on the project is carried out in such a way that after the completion of each stage of the project life cycle (sprint), the client is provided with the next working version of the product
Constant consideration of changing requirements	Within the framework of the variant approach, all changes in project requirements, even at the end of its development, are acceptable and welcome
Simplicity and minimization of activities	Priority belongs to that work that is performed quickly with minimal costs
Variability of the working software product	The shorter the product delivery cycle, the more accurately the final product will meet the consumer's expectations
Customer participation in the work on project implementation	The customer is the only bearer of the requirements "as it should be" and his conclusion about the compliance of the product with consumer expectations is the key criterion
Principle of "face-to-face" communication	Personal interaction has a number of advantages, absent in other types of communication: speed of solving issues, personal relationships, non-verbal signals (gestures, emotions), motivation (praise, report, put "in place")
Maintaining the set development pace	Necessary in the case when the deadline for developing the final version of the product is not defined, in addition, the final version of the product may not be created
Striving for technical excellence and quality of sprint planning	This principle is intended to balance potential negative effects on the quality of project development
Principle of team self-organization	The best solutions appear in self-organizing teams, with high internal discipline, a clear distribution of roles and a significant level of professionalism of the participants

Source: compiled by the author

spot-on, but it causes growing needs. One of the first attempts to use a variable tool for managing initiative projects is the project to create an office for the regional sales directorate. The office represents maximum "benevolence and space for inspiration" for effective communications and ways of new business solutions that combine modern technologies for interacting with customers and caring for employees. This office solves problems that arise using the Agile methodology: systematic analysis of increasing efficiency and adapting the style of work in a team; lack of comfortable communication conditions in project teams; non-standard solutions during project implementation and the rigidity of implementation conditions [42].

The main provisions of the variant approach to managing initiative projects are presented in Fig. 1.

The provisions take into account the main principles:

– focus on the final result, which consists in the full implementation of the customer's requirements;

– constant consideration of changes in project requirements, decomposition of work and their prioritization;

– participation of the customer in the implementation of the project to identify and promptly eliminate obstacles to implementation;

– motivation of the project team;

– close cooperation with suppliers of raw materials and equipment for the project;

– striving for technological perfection;

– use of modern communications and IT technologies.

Further, for project management, we propose a scenario matrix for expanding the possibilities of implementing organizational innovations in the Smart City project (currently not used or at the initial stage of use), which allows linking variable approaches to managing initiative projects, which determines the areas of influence on the project through the implementation of the appropriate tool (Table 2).

The number of "+" signs in the matrix reflects the degree of demand for project management

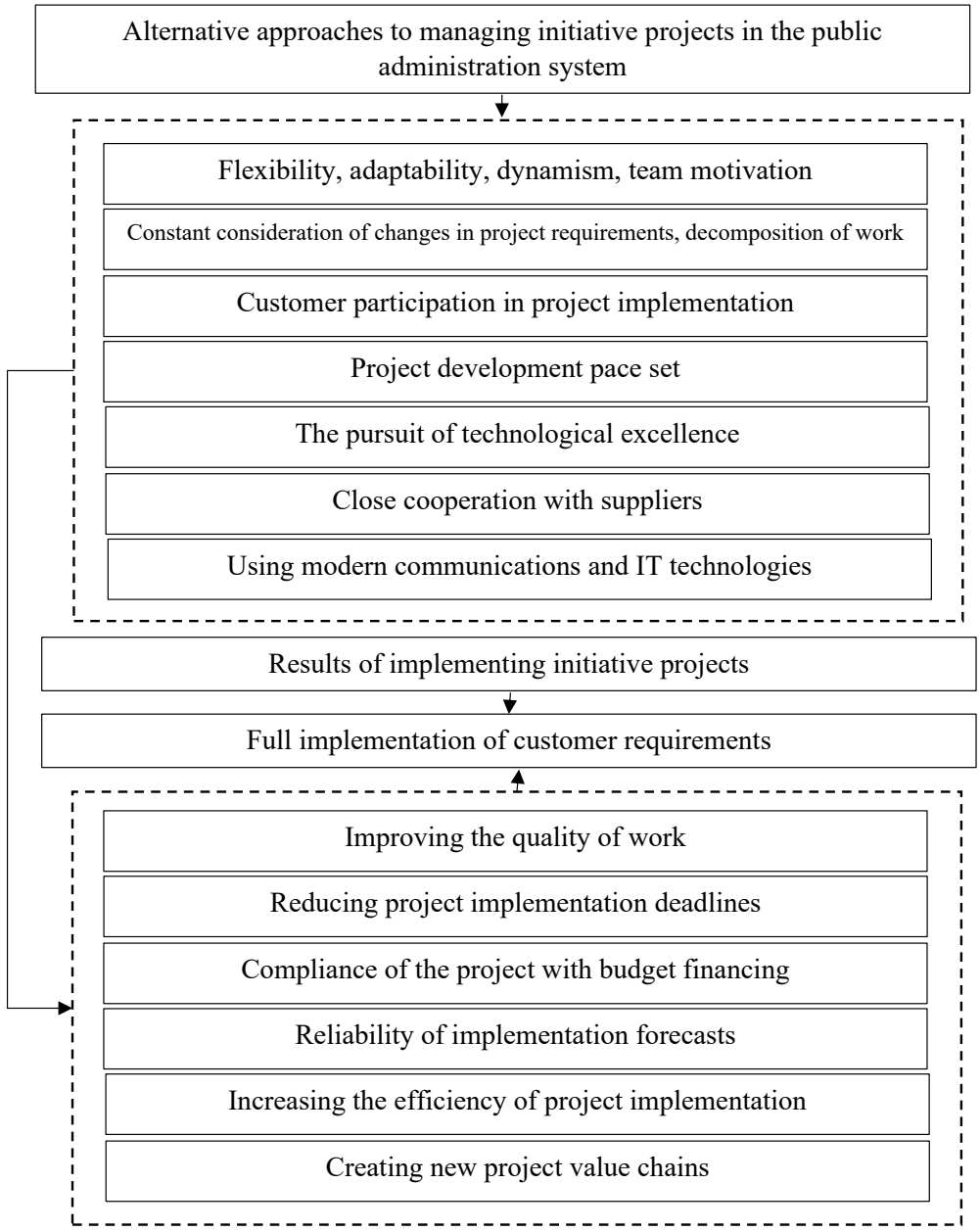

Fig. 1. Main provisions of the variable approach to managing initiative projects in the public administration system

tools. The construction of the matrix was based on the following management principles: focus on results; reduction of project implementation time; implementation of the project budget; improvement of project quality; customer satisfaction; motivation of the project team; priority decomposition of work; cooperation with suppliers, etc. The main criterion during the development and implementation of organizational innovation projects in the construction of suburban real estate objects in the work is proposed to use artificial intelligence technologies that reduce the impact of the human factor, time and financial costs. In this regard, in our opinion, the author, it is possible to organize a virtual office – a "digital twin" of the project, as a component of the variable structure of organizational innovation project management, formed on the basis of artificial intelligence, which technologically combines the life stages of design and construction implementation. The basis of a virtual office – the "digital twin" of an innovative project – are databases and digital information processing technologies. In our case, the virtual office is represented by interconnected information resources (systems for entering information, processing it, exchanging, transmitting and storing it), which reflect the implementation of the project and allow for a coordinated and organized

Table 2

Scenario matrix for expanding the possibilities of implementing organizational innovations in the Smart City initiative project

Innovation	Instruments					
	Flexible management	Adaptability	Dynamism and maintaining the pace of project development	Team motivation	Striving for technical excellence	Constant consideration of changes in project requirements, decomposition of work and focus on results
Smart homes, outsourcing	+++	+++	+++	+	++	++
Green construction	+	++	++	++	+	+
Connected construction site (AR, VR, AI technologies, artificial intelligence, robotics, Internet of Things)	++	+++	++	++	++	++
Outdoor construction (new forms of construction work organization)	++	++	++	+	+	+
Individual security management system	++	++	++	++	+	+
Innovative infrastructure for a healthy lifestyle	+	+	+	+	++	++

Source: compiled by the author

implementation of all management processes by territorially distributed participants of the initiative project team.

Conclusions. The structure of the virtual office of the project reflects the creation of a real scheme for the implementation of the project with the digitization of the main technologies for its implementation. At the input, requirements for project constraints and the necessary parameters for controlling its implementation are formed. The main constraints are resource, including production, technological, logistical, operational, etc. The information systematization and cascading block combines information data used in the project, and also records the distribution by levels of information users and consumers. Then, experimental tests of the virtual project are carried out for its compliance with the parameters of the functioning of organizational innovations. The advantage of the virtual office is that it provides developers with the opportunity to optimize and adjust the project, which is accompanied by the replenishment of information databases, and allows you to identify and eliminate errors before the stage of its operation. The construction of variable systems for managing initiative projects in the construction sector is based on the use of information technologies that make it possible to obtain the necessary information for the implementation of management decisions.

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Вознєсєнскій В. В. Розробка інструментів управління ініціативними проектами на основі варіативного підходу

Результати дослідження процесів управління ініціативними проєктами в системі публічного управління, викладені в статті, свідчать про можливість успішного застосування інструментарію варіативного підходу до управління ініціативними проєктами із метою підвищення ефективності їх формування та використання. Як основний інструментарій варіативного підходу до управління ініціативними проєктами пропонується використовувати три методології: Agile (підхід до управління проектами, що має на меті підвищення швидкості створення інноваційних продуктів із мінімальними ризиками та помилками під час реалізації проекту), Scrum (підхід, що передбачає діяльність команди проєкту, до складу якої входять вузькоспеціалізовані працівники), Kanban (метод, який відрізняється від двох попередніх відсутністю ролей власника продукту та модератора). Запропоновано впровадження віртуального офісу, який представлений пов'язаними між собою інформаційними ресурсами (системами введення інформації, її обробки, обміну, передавання та зберігання), що відображають реалізацію проєкту і дають змогу скоординовано й організовано здійснювати всі процеси управління територіально розподіленими учасниками команди ініціативного проєкту. Для управління ініціативним проєктом в статті пропонується сценарна матриця для розширення можливостей впровадження організаційних інновацій у проєкті «Smart City» (наразі не використовуються або перебувають на початковій стадії використання), що дає змогу пов'язати варіативні підходи до управління ініціативними проєктами, що визначає сфери впливу на проєкт за рахунок реалізації відповідного інструменту. На основі аналізу принципів і результатів реалізації варіативного підходу до управління ініціативним проєктом в системі публічного управління «Smart City» в статті пропонується шаблон інструментарію варіативного управління ініціативними проєктами в різних сферах на прикладі будівництва. На підставі цього шаблону можна побудувати управління формуванням і впровадженням ініціативними проєктами в різних сферах на основі здійснення різних заходів, які потрібні для реалізації нововведень і використання інструментів варіативного управління проектами.

Ключові слова: *управління, інструменти, ініціативний проєкт, варіативний підхід, публічне управління.*