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conducting voting. The voters will cast votes by logging into the system which will be then summarized by the system automatically in the form of a table, pie chart and bar chart to know the result of the election.

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## ИССЛЕДОВАНИЕ СИСТЕМЫ ЭЛЕКТРОННОГО ПРАВИТЕЛЬСТВА НА БАЗЕ JAVA ДЛЯ ПРОВЕДЕНИЯ ОНЛАЙН-ГОЛОСОВАНИЯ

Системы электронного правительства предназначены для улучшения уровня взаимодействия правительства с общественностью и улучшения доступа к услугам, которые предоставляет правительство общественности. Предложена система электронного правительства на базе Java, которая позволит правительству проводить онлайн-голосование. Это будет гарантировать, что люди голосуют в удобном для них месте и времени, не беспокоясь о краже своего голоса и конфиденциальной информации.

**Ключевые слова:** система электронного правительства на базе Java, онлайн-голосование, кража конфиденциальной информации.

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## APPLICATION OF THE HOMEOSTASTIC APPROACH TO THE FORMATION OF THE PORTFOLIO OF REGIONAL DEVELOPMENT PROJECTS

Визначені ключові групи зацікавлених сторін портфелів проектів розвитку регіонів. Розглянуті основні цілі розвитку регіону з точки зору ключових груп зацікавлених сторін. Описаний підхід до формування загальної множини цінностей зацікавлених сторін проектів розвитку регіону. Запропонований підхід до формування портфелів проектів розвитку регіону та підхід до вибору інструментів моніторингу процесу реалізації портфелю таких проектів.

**Ключові слова:** управління проектами, управління портфелем проектів, гомеостатичний підхід, проекти розвитку регіонів.

#### 1. Introduction

Evolutionary processes in the world economy have led to the fact that the existing commodity economy

is gradually evolving into a knowledge economy. The economy of regions and entire states varies under the influence of a number of independent factors. The key of these factors can be considered the opening of borders and the development of scientific and technological progress.

The opening of borders or the simplification of procedures for the movement of citizens and goods led to increased competition. Together with the transition to a single currency, this led to an expansion of the integration of economies of different countries. As a result of these events, competition has increased not only between enterprises, but also between whole countries. There was a concept of competitiveness of the region. Under the region here is understood not only a part of the state, but the entire state as a whole.

Goods and services from neighboring regions are increasingly penetrating the local market and increasing the level of competition. At the same time, enterprises have access to new markets and new resources. The task of both enterprises and countries was to obtain cheap resources and access to new markets.

Ensuring the competitiveness of the region in such conditions is possible by creating the conditions for the creation and development of enterprises. Participation in this process should be taken by all the enterprises that are named and created. As a tool, it is proposed to use processes, tools and methods of project management aimed at ensuring the values of stakeholders. The key task is to formulate a portfolio of development projects.

# 2. The object of research and its technological audit

The object of research is the processes and methods of forming a portfolio of regional development projects.

The key group of values that is necessary for development of the region is values aimed at increasing the competitiveness of the region. The main condition for their implementation is the formation of a mechanism for improving the comfortable work of high-tech enterprises.

The complexity of this task is that the result is poorly formalized. It is difficult to objectively describe the expected result of the transformation in the country. A well-known proverb says that «Something that can't be measured can't be managed». For high-tech enterprises, as for their skilled professionals, the conditions for their comfortable work are important. Comfort is provided by a large list of different types of values. The list of values that provides comfort can include both material and intangible values. The degree of their influence on the level of comfort can be described with the help of priorities.

The complexity of the task is exacerbated by the fact that the process of provision of the values of one group of stakeholders can negatively affect the provision of the values of the other group. At the same time, permanent external changes require constant revision of the set of values of stakeholders, their level of satisfaction and priorities. As a result, it is necessary to develop an approach that can provide homeostasis while ensuring the values of the stakeholders in the region.

#### 3. The aim and objectives of research

The aim of research is development of theoretical and methodological provisions and practical recommendations for the formation of a portfolio of projects for development of the region and increasing its competitiveness.

The objectives of the study:

- 1. To describe the approaches to the formation of the list of values that is necessary for development of the region.
- 2. To describe the approaches to the formation of a portfolio of regional development projects and portfolios of stakeholders.
- 3. To identify approaches to monitoring the implementation of the portfolio of regional development projects by stakeholders.

# 4. Research of existing solutions of the problem

To provide leading positions in the market in a highly competitive environment is possible in two ways: either by reducing costs, or by producing high-quality products or services. Reduction in cost is possible with the availability of cheap resources – both material and labor. This strategy is chosen by Chinese enterprises, which are able to minimize the cost of implementing production processes. This makes it possible to produce large quantities of inexpensive goods.

A competitive advantage of Ukrainian enterprises in these conditions can be the production of high-quality innovative services and products aimed at local consumers.

High living standards, adopted by most residents in the country, do not allow talking about cheap labor resources. In this regard, the second path of development is the most acceptable for Ukraine. The current level of development of science and technology makes it possible to reduce costs and ensure high quality products through the introduction of robotic production lines. The development of production through the introduction of such lines enables enterprises to adapt to increased levels of competition. In turn, their introduction has caused a change in the situation on the labor market. Instead of a large number of specialists working in the specialties, enterprises are interested in hiring a small number of specialists in engineering specialties. For enterprises, labor-intensive is not so much the production of products, as the creation of new samples and development of production technology.

The project approach can be successfully applied not only for development of private enterprises, but also for the implementation of social and state projects and programs [1, 2]. The regional development projects have a high level of uniqueness, as they are aimed at creating new both tangible and intangible products. Some world standards for project management [3] were developed primarily for the management of innovative projects with a high degree of uniqueness.

The maximum effect from the implementation of regional development projects can be obtained on condition that the portfolio of projects is properly constructed. International standards [4, 5] describe the world experience not only of project management, but also the management of programs and project portfolios. In a number of European countries, project management standards [6, 7] are adopted at the state level. All projects implemented by the state bodies of these countries are managed using the adopted standards.

The independent development of social institutions aimed at improving the quality of life in the region [8] leads to the complication of the management system. At

the same time, an increase in the requirements for quality control of management leads to an increase in the complexity of the management system based on the model of feedback control systems [9]. Approaches are needed that would make it easier to manage the development of the region. And also to ensure the possibility of influencing and making changes in the regional development projects from the side of social groups.

The increased level of competition has forced many foreign enterprises to ensure the constant release of new products. This made it possible to occupy and retain the leading positions in the market. In some countries and individual regions, high-tech enterprises are created and developed. They are the most competitive and the world leaders in most areas of the world economy.

Based on classical approaches to increasing the competitiveness of the region [10], government agencies should provide support to key enterprises in the region. This approach, often, negatively affects the development of not only the region, but also the enterprise itself, because the enterprise, protected from the influence of competition, loses its incentive to develop. Having built its economic model taking into account state support, the enterprise is not able to compete normally in conditions of free market relations.

Based on the aforesaid, it can be assumed that at the moment for the countries with developed economies the most popular resources are highly qualified specialists. These professionals should be able to create and develop innovative products and technologies. To ensure a high level of competitiveness of the country, it is necessary to create:

- the best conditions for creation and development of high-tech enterprises;
- 2) more comfortable living conditions of highly qualified specialists than in other countries.

#### 5. Materials of research

The application of the value approach to solving the problem is a relatively new task. Prior to this, approaches based on sets of indicators for assessing the region are widely used. A large number of methods and approaches to assessing the development of the region and its competitiveness are developed. Most of these methods and approaches are developed to solve specific problems and they are difficult to consider universal.

In Balanced Score Cards for non-profit organizations [11], the indicators are divided into groups: customers, processes, development and finance. The key group is the group of «customers» indicators. To develop the indicators of this group, it is necessary to improve marketing processes using the budgets of the organization or region.

Balanced Score Cards for a private enterprise are based on the same groups of indicators [12]. Unlike government bodies, private enterprises regard the financial group of indicators as a key.

Both systems have different goals of existence and at the same time complement each other. The development of the region is impossible without the development of high-tech enterprises. And the development of high-tech enterprises, in turn, is impossible without the creation of a developed infrastructure and the attraction of highly professional labor resources. By analogy, it can be argued that exchange of values takes place between public and private organizations. The lack of critical values can lead both to the closure of enterprises, and to the transition of the region into a depressive category.

External and internal changes can lead to a loss of balance and an increase in tensions in the region. To ensure equilibrium in an ever-changing system, it is suggested to use a homeostatic approach [9]. It allows to provide a homeostasis under the conditions of continuous changes. Homeostasis is a state of the system in which the dynamic stability of the operation of its vital functions remains at the expense of special control mechanisms [13, 14]. Let's consider the regional development management system as a homeostatic system.

5.1. Approach to the formation of the list of values necessary for development of the region. The choice of the homeostatic approach is based on the fact that it considers the management system in the form of a set of competing and interacting subsystems (homeostasis). The role of homeostasis is played by stakeholder groups. Each homeostat has its own set of goals and strategies. The decision on the whole system assumes the control homeostasis. Portfolio and project managers play the role of control homeostasis for the portfolio of regional development projects. The portfolio manager sets the project priorities based on the analysis of the values of the stakeholder group. Project managers use the same principle of prioritization for project tasks. As a result, most projects prioritize the task of obtaining the necessary resources to implement them as quickly as possible. The effectiveness of the implementation of regional development projects depends on the results of the analysis of the values of different stakeholder groups. The loss of homeostasis leads to conflicts between different stakeholder groups. Maintaining of homeostasis is important for all stakeholders.

The following key stakeholder groups will be the homeostats in this system:

- 1. State bodies.
- 2. Private enterprises.
- 3. Qualified specialists.

Each of the described key stakeholder groups has its own goals and objectives, as well as its own mechanism for their implementation. Concentrating on achieving the goals of only one of the stakeholders leads to an imbalance.

Each group of stakeholders has its own set of values that ensure a high level of comfort. Each of the key stakeholder groups can be divided into subgroups depending on the list of consumed and produced values. For example, in the «Private enterprises» group it is possible to single out a subgroup «high-tech enterprises». For the purpose of developing these enterprises, it is necessary to establish the values they consume as the highest priority.

For the «State bodies» group, the list of values is relatively static. The key ones are the reduction of the time and cost of the implementation of public services and management processes. At the same time, it is necessary to prevent a decline in the quality of provided services.

A lot of values for other groups can vary depending on the influence of the external environment. The level of satisfaction of values and their priorities for each interested party also changes.

To form a set of values and monitor changes, it is necessary to create the appropriate tools. These can be expert groups or information resources. Expert groups, whose members are selected from among the representatives of stakeholder groups, can formulate and evaluate a variety of values. The disadvantages of this method include the lack of transparency and subjectivity of the experts themselves. The most objective method can be the method of using information systems. Each member of the stakeholder group can evaluate and select values using an open information resource. The disadvantage of this method is the low activity of a number of representatives of stakeholder groups.

After forming a multitude of values within a group of stakeholders, it is necessary to conduct a general assessment and highlight the most significant values. The most significant are the values that are noted by different stakeholder groups.

Fig. 1 shows the intersection of sets of values of different stakeholder groups.

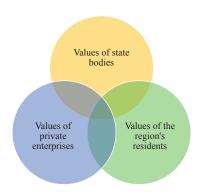


Fig. 1. The intersection of the set of values of different stakeholder groups in the region

In the area of intersection of the sets of values of the three stakeholder groups, there are important values for the relevant groups. Values with low priority within the set of values of one group can increase their priority if it is present in several sets at once.

Let's describe the intersection of the set of values of the stakeholders as follows:

$$C = C' \cap C'' \cap C''', \tag{1}$$

where C – set of values determined at the intersection of the set of values of the stakeholders; C' – set of values of state bodies; C'' – set of values of private (including high-tech) enterprises; C''' – set of values of qualified specialists.

After determining the set of the most significant values, it is necessary to rank them by priority. The most priority will be values that have high priority for stakeholders and a low degree of satisfaction. The attitude to the value of all participants of each of the three stakeholder groups is taken into account.

To determine the priority of value, let's use the formula:

$$p_i = \sum_{j}^{n_1} p'_{ij} * (1 - v') + \sum_{k}^{n_2} p'_{ik} * (1 - v'_{ik}) + \sum_{l}^{n_3} p'_{il} * (1 - v'_{il}),$$
 (2)

where  $p_i$  – the priority of the *i*-th value; n1 – the number of values of the stakeholders of the state bodies group;  $p'_{ij}$  – priority of the *i*-th value of the *j*-th stakeholder of

the state bodies group;  $v_{ij}'$  — the degree of satisfaction with the i-th value of the j-th stakeholder of the state bodies group; n2 — the number of values of the stakeholders of a group of the private enterprises group;  $p_{ij}''$  — priority of the i-th value of the j-th stakeholder of the private enterprises group;  $v_{ij}'$  — the degree of satisfaction with the i-th value of the j-th stakeholder of the private enterprises group; n3 — the number of values of the stakeholders of the qualified specialists group;  $p_{ij}'''$  — priority of the i-th value of the j-th stakeholder of the qualified specialists group;  $v_{ij}'''$  — degree of satisfaction with the i-th value of the j-th stakeholder of the qualified specialists group.

A variety of values formed in the analysis of the intersection of values is mandatory. At the same time, the priority of values makes it possible to rank values according to the degree of importance.

#### 5.2. Approaches to the formation of portfolios of regional development projects and portfolios of stakeholders.

The development of the region is proposed to be implemented through the implementation of relevant projects. The products obtained as a result of the implementation of the relevant projects allow increasing the level of satisfaction of the priority values. As a result, it is necessary to determine the list of products that maximally satisfy the priority values and portfolio of projects capable of producing them. The project portfolio can be mathematically described as follows:

$$F = \{F_1, \dots, F_h, \dots, F_t\},\tag{3}$$

where  $F_h - h$ -th project, in which the stakeholder participates; t – the number of projects in which the stakeholder participates.

The portfolio of regional development projects includes tasks aimed at obtaining products of various types. The products of the projects are both tangible and intangible results. In this study, intangible and tangible products of regional development projects are called artifacts. Projects and tasks of regional development projects are considered in this study as processes of transforming resources-artifacts into products-artifacts:

$$F_h(A_h^p, A_h^r), \tag{4}$$

where  $A_h^p$  – the set of products-artifacts, implemented by the h-th project;  $A_h^r$  – the set of resources-artifacts required to implement the h-th project.

Implementing projects, the regional leadership creates artifacts that ensure the satisfaction of stakeholders' values [15]. An artifact can enhance the satisfaction of one or more values. The level of satisfaction of values with artifacts is described using the matrix V[l,m]. To determine the priority of the artifact is necessary using the formula:

$$p_i^p = \sum_{i=1}^{n_4} p_i * V[t, i], \tag{5}$$

where n4 – the number of values of the set of common values of stakeholder groups; V[t,i] – the level of satisfaction with i-th value from the availability of the j-th artifact.

Priority of the project and tasks of the project, using the formula (5), can be described as follows:

$$p_k^{pr} = \frac{\sum_{t}^{n5} \sum_{i}^{n4} p_i * V[t, i]}{\sum_{t}^{n6} \sum_{i}^{n4} p_i * V[t, i]},$$
(6)

where  $p_k^{pr}$  – the priority of the k-th project; n5 – the number of products-artifacts of the k-th project; n6 – the number of results-artifacts of the k-th project.

For the implementation of projects, the resources of the region are used. They are, in the framework of the presented approach, designated as resources-artifacts. Under the resources-artifacts in this study are understood all the material and non-material resources of the region. The implementation of the projects will provide the region with new artifacts, which can be used in subsequent projects for the development of the region. The region has balanced development due to the creation and further use of tangible and intangible artifacts of the region.

For the implementation of the project, all available artifacts-resources of the region are allocated. The number of resources-artifacts in the region should be distributed among portfolio projects depending on their priority. The absence of the necessary resources-artifacts carries the implementation date until it appears.

- **5.3.** Approaches to monitoring the implementation of the portfolio of regional development projects by stakeholders. To satisfy the values of key stakeholder groups, the regional leadership must ensure that projects are implemented in the following areas:
- 1. Projects of socio-cultural development of the region. These projects should be aimed at increasing the level of comfort for the residents of the territory.
- 2. Business development projects in the region. Projects aimed at the creation and development of high-tech enterprises.
- 3. Projects of state organizations development. Projects for development of services, processes, information systems of public administration and provision of public services.

The development of a portfolio of projects depending on types and directions is possible in the case of development of the appropriate structure of the portfolio. This structure will make it possible to divide the aggregate of projects into portfolios, not only by types, but also by directions, while taking into account the values of all stakeholders.

Given the specifics of the formation of the regional budget, the duration of projects should not exceed one year. A feature of the implementation of projects for the development of the region is a large number of stakeholders. Depending on the level of homogeneity of enterprises and social groups in the region, there can be quite a number of stakeholder groups. Representatives of these groups should be able to influence the choice and course of the formation of artifacts of project products.

An important condition for successful interaction with regional enterprises and various stakeholder groups is their involvement. It is necessary to ensure their participation not only from the outside observer, but also from the direct participant of the project. The projects and programs that are being created should become part of the overall development strategy of the various stakeholder groups.

The main objectives of using project management in the development of the region can be considered:

1. Ensuring that participants in the group can generate their own initiatives.

- 2. Ensuring transparency in monitoring the implementation of the regional portfolio of projects.
- 3. Ensuring an opportunity to easily make changes to the project implementation process.

Initiatives are understood as proposals for initiating of the projects. To ensure implementation of the process of providing initiatives, stakeholder groups need to develop appropriate processes and tools. The list of initiatives should be freely available to all participants of stakeholder groups. Initiatives are nothing more than the reactions of stakeholders during the whole period of the regional development projects [16]. Each of the participants should be able to add initiatives for consideration without restrictions. When describing initiatives, the initiator should describe in detail the results and products created as a result of the project. When describing the result, the initiator should indicate all the values for which the project is directed.

Transparency is one of the mandatory values that ensure success in applying the project approach. Each of the participants in the stakeholder groups should have an opportunity to be interested in the progress of the projects. It is necessary to ensure not only the monitoring of projects, but also the possibility to propose changes. The ability to make proposals for changes will significantly increase the level of confidence of the stakeholder groups. It is also necessary to give an opportunity to discuss the changes and current results of project implementation. This will create the necessary level of trust in the relations between the participants of the stakeholder groups and the project managers.

The implementation of the portfolio of projects and the formation of a list of regional development initiatives should be carried out in parallel and independently. It is necessary to envisage the possibility of initializing new projects and closing down those already underway, if they have lost relevance. This will make it possible to maintain the portfolio of projects in an up-to-date state.

Tools and methods for selecting and monitoring of regional development projects can be quite complex. It is difficult to implement them by the efforts of individual project managers or temporary working groups. It is necessary to create a structure capable of taking on these tasks in the region.

The key task of this structure is to carry out interaction between stakeholder groups and members of project teams. One of the interaction mechanisms is the provision of information on the implementation of projects using open information systems.

In connection with a large number of stakeholders, the emergence of conflict situations is a key risk for regional development projects. A unified structure for the initiation and management of regional development projects will minimize the likelihood of conflicts and their negative impact on projects.

### 6. Research results

An important approach used in the study is the replacement of competition and opposition to cooperation. More and more enterprise leaders try not to compete with foreign enterprises, but to interact. This makes it possible, using the resources and technologies of foreign enterprises, to provide the product to the market, taking into account national peculiarities. Based on the principles of cooperation, it is possible to build not only interaction between enterprises, but also between state bodies and employees of enterprises. From the replacement of the opposition to cooperation, all the participants in the interaction benefit, gaining new opportunities and the resources they need. Developing the region, based on the principles of cooperation and using the methodology of project management, it is possible to ensure a high level of competitiveness and living standards in the region.

A key approach in the study is to identify three stakeholder groups for the portfolio of regional development projects portfolio. The proposed groups include: state bodies, private enterprises, residents of the region. The reason for this division is the fact that these groups are radically different in terms of goals and expectations from the implementation of the portfolio of regional development projects. At the same time, representatives of these groups are present in any portfolio project. Meeting the expectations of key group representatives is a prerequisite for the successful implementation of portfolio projects. An important aspect of the participation of representatives of groups is their impartial participation in the process of initialization and monitoring of the implementation processes of portfolio projects. The reduced or limited participation of representatives of different groups can lead to the fact that the results obtained from the implementation of projects do not satisfy one of the key groups of participants.

Violation of the balance of interests between the key stakeholder groups leads to destabilization of the economic situation in the region. For example, a low standard of living and a lack of sufficient workplaces leads to the fact that highly qualified specialists do not go to the region. The lack of highly qualified specialists does not allow to create complex high-tech industries in the region. Only enterprises with high-tech production can ensure a high level of tax revenues for the implementation of regional development projects.

The homeostasis of the interests of key stakeholder groups is a key condition for the stability and development of the region. Preservation of homeostasis in the implementation of projects of the regional development program provides an opportunity to ensure its stable development. Given the need to maintain the regional competitiveness, it is necessary to regularly implement projects and portfolios of projects for the development of the region. It is necessary to take into account changes in the values of key stakeholder groups.

A specific feature of the regional development project is the definition of the expected product. Stakeholders involved in the formation of project products often operate on qualitative parameters. For example, the value of a «high standard of living» can have a different formulation and a set of indicators of its evaluation. Accordingly, such result of the regional development program as a «high standard of living» has not an unambiguous description, even for a small group of representatives of the stakeholder. Conflicts in determining indicators for assessing the achievement of the results of a regional development project are the main negative factor in its implementation. At the same time, the views of stakeholder groups regarding the results

and products of the project may change, which means that they should be immediately introduced into projects and portfolios of regional development projects. The condition for the effective implementation of projects and portfolios of regional development projects is the availability of software products that can monitor and amend the regional development projects. In addition to making changes to the product or evaluation indicators, it is necessary to determine the methods and tools for prioritizing projects.

Based on the foregoing, it is possible to identify the key areas of project management knowledge necessary to manage projects and portfolios of regional development projects. This is content management, interaction management and integration management. Financing of state programs is planned and implemented for a year, the draft programs should be decomposed with duration of no more than a year. Given this, regional development projects should be short-term with clearly defined products. Changes in the priorities of projects of key stakeholder groups can influence the process of allocating resources between projects.

The competitiveness of the region does not depend on the availability of resources in the region, but on the ability to dispose of these resources. The imbalance in ensuring the needs of a key group of stakeholders in the region leads to the degradation of the economy of the entire region. The maximum profit received in the short term from the exploitation of the resources of one stakeholder leads to the degradation of the entire region in the long term.

#### 7. SWOT analysis of research results

Strengths. A particular feature of the regional development projects is the participation of stakeholder groups with different goals and values in it. Ensuring the adoption of balanced solutions that can satisfy most stakeholders is a guarantee of minimizing conflicts in the implementation of regional development projects. Choosing common values and products of projects that can meet them as much as possible is the key task of the project portfolio management process.

The proposed approach to the formation of a portfolio of regional development projects will allow selecting products and products of projects, the implementation of which will ensure the satisfaction of the values of the stakeholders. Interest of stakeholders to the project will allow providing access to necessary resources. In conditions of limited resources and turbulence of the external environment, the correct choice of projects for implementation is critical.

Weaknesses. The weaknesses include the complexity of filling the information base on the basis of which the analysis is carried out. To obtain an objective result, it is necessary to organize the collection of data from the largest number of stakeholders. Participation of representatives of only one type of stakeholders in the formation of information on values will adversely affect the results of the selection of regional development projects.

Opportunities. Based on a variety of high-priority values, private enterprises can develop and implement projects aimed at creating new types of products. By tracking changes in priorities and the level of satisfaction with

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the value of stakeholders, enterprises can adapt products created or already created.

Threats. The use of the presented approach requires the introduction and development of methods and tools for project management within the government. In addition, it is necessary to implement the division of the work direction, which support will be the management of the portfolio of development projects in the region. The lack of support from the state bodies will negatively affect the effectiveness of the selection and implementation of projects for development of the region.

#### 8. Conclusions

- 1. Within the framework of the research, an approach is proposed to the formation of a set of values of the regional stakeholders. Subjectivity and qualitative assessment of the results of the implementation of regional development projects complicate the process of forming the content of the project. The search for a common list of values for all stakeholders will reduce uncertainty in the regional development projects.
- 2. The formation of a set of common values of stakeholders in the region allows the qualitative formation of a portfolio of regional development projects. In the conditions of limited resources, regional leaders need to properly form a portfolio of projects. The portfolio should ensure not only stability in the region, but also its continuous development. To achieve stable development in an unstable environment is possible provided the use of homeostatic model. Using the homeostatic approach, a method is proposed for decomposing the portfolio into projects with a balance of interests of the stakeholders.
- 3. Having provided a constant process of monitoring the degree of satisfaction of the values of stakeholders, regional leaders can maintain the portfolio of projects in an up-to-date state. The portfolio of regional development projects should be implemented subject to the participation of all stakeholder groups. For this, it is necessary to build management processes on the principles of transparency and continuous interaction with all stakeholders. Implementation of the approaches described in the work is possible provided that a separate structure is established in the region.

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#### ПРИМЕНЕНИЕ ГОМЕОСТАТИЧЕСКОГО ПОДХОДА К ФОРМИРОВАНИЮ ПОРТФЕЛЯ ПРОЕКТОВ РАЗВИТИЯ РЕГИОНОВ

Определенны ключевые группы заинтересованных сторон портфелей проектов развития регионов. Рассмотрены основные цели развития региона с точки зрения ключевых групп заинтересованных сторон. Описан подход к формированию общего множества ценностей заинтересованных сторон проектов развития региона. Предложен подход к формированию портфелей проектов развития регионов и подход к выбору инструментов мониторинга процесса реализации портфеля таких проектов.

**Ключевые слова:** управление проектами, управление портфелем проектов, гомеостатический подход, проекты развития регионов.

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