

The stability of the region's development, like any system, depends on the effective balance of its subsystems. The effectiveness of subsystems is enhanced by the effective performance of a set of their key components, which depends on the optimization of certain elements by establishing rational relationships between them. Accordingly, the object of the study is the process of rationalization of the constituent elements of territorial community development programs. To solve this issue, a methodical approach to determining the level of development of the region and ensuring its stability in the strategic period is proposed through the rationalization of the effects of mutually determined implementation of business processes of alternative development projects of territorial communities. The expediency of using the coefficient of synchronicity of business processes of certain regional development projects to determine the level of regional development was substantiated. The use of the synchronicity coefficient to ensure the stable development of the respective region is due to the obtained possibility of balancing the specific competitive advantages of territorial communities strengthened by certain effects. These effects are the results of the implementation of optimally formed portfolios of development projects through rational relationships between specific business processes based on the principle of maximum adaptability of their components. The value of the coefficient of synchronicity of the business processes of the portfolio of development projects of Zabolottivska UTC (0.637) made it necessary to take possible measures for their rationalization by implementing individual effects from the interaction of specific business processes. That has made it possible to increase the synchronicity of these business processes to 0.816 and to determine the direction of the possible integration of the studied UTC with other communities with the help of the formed development potential reserves

Keywords: sustainable development, territorial community, development projects, business processes, integral indicator of synchronicity

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ENSURING SUSTAINABLE DEVELOPMENT OF A REGION IN THE STRATEGIC PERIOD

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1. Introduction

The development of the region, like any system, is unbalanced, which is due to the presence of a significant number of factors that more or less affect its sustainability. Therefore, the development of the region depends on external and internal influences, which can violate previously set or achieved development parameters. In addition, the appearance of certain factors, conditions, phenomena that affect the development of a specific region is caused by the conscious or spontaneous reorganization of its individual components, which, in turn, causes transformational processes at the macro level. And those, in turn, contribute to the emergence of new forces of influence on its internal structure. In order to prevent these influences during the formation of the theory of sustainable development of regions, it is necessary to use the general scientific theory of organization – synergy. Such a theory explains the interaction of elements in the processes of creating order, as well as the phenomenon of self-organization in nature and society. In addition, it allows predicting the behavior of complex systems under conditions

of unknown rules of their transition from one state to another. This creates conditions for the prevention of negative changes in society due to the timely determination of the nature of the behavior of the internal elements of the system within the established limits of their development. That is, the effective competitive development of the region depends not only on the balanced development of its key components, but also on the effective interaction and mutual influence of their individual elements. Moreover, the impact should be such that an additional effect is obtained, which accordingly forms a sustainable competitive advantage of the region.

It is obvious that the key factor in the development of regions is the priority of the development of the grassroots – territorial communities due to the receptivity of certain of their components to the implementation of individual measures of the strategic programs of the region's development and the competitive strategy of the country's development. A separate aspect of the stable development of the region is the provision of effective cooperation between individual territorial communities due to the balance of the relevant components of their development.

Since the effectiveness of any object depends on the effectiveness of individual business processes, the achievement of certain strategic development goals of certain territorial communities depends on the one hand, on the successful reengineering of business processes of specific regional development projects. On the other hand, the achievement of goals depends on effective relationships between the key elements of the relevant business processes of various projects of such development. Accordingly, ensuring the effectiveness and perspective of a specific component of the region's development depends on the effects obtained in the process of implementing the necessary business processes and/or rationalizing the relationships between individual of them in order to obtain sustainable competitive advantages of the regions. In order to maintain the competitive attractiveness of certain directions of the region's development, it is necessary to control and ensure the effectiveness of attractive and/or strategically promising business processes. Moreover, no less attention should be paid to individual components of business processes, in accordance with the level of achievement of the main strategic goals of the region and the country.

Therefore, an important place in ensuring the sustainability of regional development belongs to the process of controlling and maintaining the effectiveness of individual business processes at the appropriate level. In order to determine the effectiveness of the implementation of certain business processes, the maximally rational interdependence of certain business processes with each other and the magnitude of the effect created and the level of influence of their interaction on the long-term development of the region, it is worth using the synchronicity indicator. In this case, the synchronicity indicator refers to the implementation of certain business processes necessary to ensure the effective implementation of relevant compatible regional development projects, taking into account the principles of the strategic state development program.

This allows us to state that it is appropriate to conduct a study aimed at ensuring the stability of the development of the region in the strategic period, taking into account the level of synchronicity of business processes of development projects of its individual territorial communities. This will make it possible to form a base of specialization of the regions and determine the reserve with which they can interact with other territorial communities and/or regions to ensure the maximum implementation of strategic measures of national development programs.

2. Literature review and problem statement

The main emphasis of most of the works on the stability of the development of the region is focused on the economic development of the regions, in particular in work [1] the development of the region is considered on the basis of its financial potential and the reason for deepening the differentiation of development. However, such research and provision of one-sided development of regions makes effective construction of its strategic development impossible, as other aspects of competitive advantage formation (social, recreational, environmental, etc.) are neglected.

In contrast to the consideration of the development of the region by one component, the features of the formation and use of regional indicators of the region's stability are presented in works [2, 3]. However, the implementation of the

proposed indicators in the process of managing the stability of the region remains outside the attention of scientists. In addition, the advantage of work [3] is the use of modern software to determine the level of development of the region, which is relevant under modern conditions.

The wider impact of digitalization on ensuring the competitiveness of the region to achieve the goals of sustainable development is considered in work [4]. In addition, the work considers the implementation of the proposed evaluation tool in managing the sustainability of the region. However, this procedure was developed taking into account the peculiarities of the regions in Portugal.

In work [5], the key areas of ecologically and economically balanced development management at the regional level, taking into account national specifics, are developed. However, the proposed recommendations contribute to economic growth in the region under the conditions of reducing the burden on the environment, that is, other types of growth of the region remain outside the boundaries, which diminishes the weight of its specialization, historical and strategic orientation.

In the works listed above, the main emphasis is on assessing and ensuring the stability of a separate region without linking it to national development programs. Research into this area was carried out in work [6], where, on the basis of the developed models, actual directions for improvement and reform of the innovative ecosystem of the region were determined to increase the scientific potential of Ukraine. However, other than innovative projects and components of regional development were neglected in the reported research.

Ways of comprehensively ensuring the sustainability of regional development are reflected in work [7], which outlines the features of the interaction of scientific circles and regional authorities. The work indicates the directions of effective cooperation by involving many interested parties in order to obtain the desired results of the development of the region. However, in this case, attention is paid to ensuring the stability of the region, mainly, not at the expense of the existing and prospective potential of the region, but through the achievement of goals, agreements of institutions interested in this development.

Therefore, despite the gained experience and a long period of formation of the concept of sustainable development, the moments of decision-making regarding the specific specialization of certain regions when forming the strategy and program of sustainable development of regions are not transparent enough. In turn, this does not allow different regions to accurately implement and maximally implement the main aspects of national strategies and programs for the socio-economic development of the country. Modern trends in the development of world economies necessitate a revision of the main paradigms of ensuring the stability of regional development. This is due to the transfer of emphasis from the ideology of accumulation of material wealth to the ideology of preserving the sufficiency of certain types of resources, from the ideology of competition to the ideology of mutual aid, from the ideology of capital intensity to the ideology of computerization and creativity. In addition, from the ideology of maximizing planned results to the ideology of obtaining unique (innovative) results at the expense of creativity.

Accordingly, procedures for determining the level of development of the region are needed, which will make it possible to determine the provision of the development of the region not only by existing traditional types of poten-

tial (resource) but also the possibility of creatively increasing additional strategic competitive effect (advantages). Moreover, the above should take place along with the maximum strengthening of specific components of the region's potential. In addition, such a procedure should contribute to the possibility of effective formation of regional development programs, effective implementation of measures of the national program and the international strategy of the country's development.

In addition, administrative state and regional decisions are adopted without a clear idea of the systemic nature of the issue of ensuring the sustainable development of a separate territory. This is due to the lack of adequate information support regarding the real level of specialization, the possible strategic direction of a separate territorial community and the prospects of its building up of certain components necessary to ensure the stable development of the region. That is why the structural detailing of the management approach to determining and ensuring the sustainability of the region's development requires further research. This should happen at the expense of increasing the effectiveness of the implementation of specific business processes during the implementation of various development projects, as a condition for creating the appropriate type of potential of the region. In turn, the formed potential will contribute to increasing the level and possibility of achieving and/or adjusting the set goals of the country's national development.

3. The aim and objectives of the study

The purpose of this study is to develop a scientific and methodological approach to managing the strategic development of the region based on the mutually determined unity of business processes of the respective development projects of individual territorial communities. This will make it possible to form a strategically promising portfolio of development projects of a separate territorial community and ensure their effective implementation, which will contribute to the increase of reserves for effective interaction with other communities in the region.

To accomplish the aim, the following tasks have been set:

- to justify the need to build effective business process relationships of individual development projects in the region to ensure its sustainability in the strategic period;
- to outline the economic meaning of the coefficient of synchronicity of business processes of individual development projects of the region to ensure its sustainability in the strategic period;
- to propose and characterize the stages of a scientific and methodological approach to managing the strategic development of the region;
- to determine and describe the features of using the synchronicity factor to establish the effective interrelationships of business processes of individual development projects of specific territorial communities and provide practical recommendations for ensuring the sustainable development of the regions to which the studied communities belong.

4. The study materials and methods

The object of our study is the process of rationalization of the constituent elements of the development programs of

territorial communities as a basis for ensuring the stability of the development of the region in which they are included in the strategic period.

The main hypothesis of the study assumes the fact that the stability of the region in the strategic period is ensured by the effective management of the obtained effects of the interaction of individual business processes of the development projects of its territorial communities.

Component analysis and the method of structural analogy were used in the formation and representation of formulas for calculating the synchronicity coefficient of business processes of the relevant development projects of individual territorial communities. In turn, the ranking method is used to determine the priority of individual development projects of territorial communities according to the values of the constituent parameters of the coefficient of synchronicity of business processes. The method of focal objects – in the formation of unexpected combinations of interaction of business processes of development projects of a separate territorial community, correspondingly arising situations in the internal and external environment, which will provide original ideas for their solution. Generally accepted methods of generalization and comparison – when calculating the integral coefficient of synchronicity of business processes of development projects of a separate territorial community, taking into account the values of its individual constituent parameters. And the method of portfolio analysis – when forming a portfolio of development projects of the studied region.

5. Results of research on the influence of consolidation synchronicity of business processes of development projects of territorial communities on the stability of the region

5.1. Studying the prerequisites for ensuring the stability of the region's development in the strategic period

The stability of the development of the region depends on the balanced development of individual territorial communities that are part of its structure. Moreover, the success of the latter mainly depends on the effectiveness of the implemented projects of its development within the framework of the strategic development program of the country and individual regions. The effectiveness of specific projects is determined by the effectiveness of certain business processes, the implementation of which is necessary for the optimal achievement of the set goals of regional development.

Modern conditions of development require ensuring, in addition to the exact achievement of the set goals of the development of the region due to the implementation of certain business processes of various projects with maximum effectiveness, as well as the optimal use of specific types of resources. The ability to create additional effects through the use of appropriate management innovations also increases the effectiveness of individual business processes. That is, the need to rationalize the performed business processes by establishing such interrelationships between them to ensure their maximum effectiveness due to saving the relevant types of resources comes to the fore. Accordingly, it is expedient to determine the level of development of the region due to the possible compatibility of business processes of individual development projects, which will contribute to the achievement of the goals of regional development determined at the national level. The effective interrelationship of business processes should be based on the maximum possible resource saving of the implementation of such a consolidated

unity of various business processes through the optimization of their individual components. The implementation of a specific business process can provide various types of effects. Accordingly, a certain combinational interaction of various business processes as a result of the implementation of both individual development projects and their totality will ensure, in various combinations, the receipt of specific types of effect. Moreover, in some cases these effects will manifest themselves to a greater extent, in others – to a lesser extent. That is why the use of an indicator to determine the level of development of a region or a territorial community, the value of which will reflect the rational coherence of certain business processes, will make it possible to obtain information about the need to increase the value of a certain component of the development of the region. Moreover, this component will be (or has been) neglected by the effective implementation of the proposed project. This will make it possible, if necessary, to filter out those development projects that at the moment will not contribute to the growth of the necessary component of the region's development. In addition, it will also make it possible to change the sequence or structure of business processes necessary for the development of the region in case they are not needed for the stable development of the region. And, on the contrary, to increase the necessary component at a specific moment in time depending on the ultimate goal of regional development to ensure stable national development. The goal of regional development, on the one hand, may refer to the need to ensure maximum achievement of regional goals defined by national development programs. On the other hand, it may refer to the increase of a separate component for the possibility of joining forces with a region that is at the stage of stagnation, but is promising and/or necessary for the strategic development of the country, as well as for the country to obtain significant competitive advantages, etc.

Therefore, to determine the level of stability of the region's development, it is advisable to use the coefficient of synchronicity of business processes. Because in order to achieve the set tasks, several projects can be implemented, the implementation of which requires both the implementation and the establishment of rational relationships in each individual case of various business processes. And in each case, according to certain conditions, the implementation of even the same business processes will be carried out with a different size of certain types of basic effects.

Accordingly, the calculation of the synchronicity coefficient should provide a rational determination of those projects in which the implementation of interconnected business processes will make it possible to obtain maximum effectiveness and a balanced increase in the potential of individual components of the region's development.

5. 2. Interpretation of the coefficient of synchronicity of business processes

Synchronization of business processes shows the extent to which interconnected business processes are compatible with each other in the direction of maximizing the effectiveness of their implementation through the optimization of their individual structural components according to a certain criterion of adaptability. Under modern conditions of resource-saving orientation, it is advisable to use the possibility of resource saving as a criterion for the integration adaptability of business processes. Therefore, integration adaptability reflects the effectiveness of the implementation of a certain business process depending on both the complexity of its resource provision with the results of the implementation of another business process,

and the possibility of interchangeability of intermediate results of the implementation of individual stages of certain business processes. This testifies to the duration of their relationship, which affects the efficiency of these business processes, the accuracy and timeliness of building forecasts of their strategic development, and the stability of the development vector of a certain object to ensure the efficiency of which they are aimed.

To calculate the synchronicity factor of business processes, it is proposed to use the following formula (1):

$$K_c = \frac{\sum_{i=1}^m E_{Ei} \cdot k_{B_{Ei}} + E_{ek,i} \cdot k_{B_{ek,i}} + T_{T.T,i} \cdot k_{B_{T.T,i}}}{\sum_{i=1}^m E_{C,i} \cdot k_{B_{C,i}} + E_{Pi} \cdot k_{B_{Pi}} + E_{INi} \cdot k_{B_{INi}}}, \quad (1)$$

where E_{Ei} is the economic effect from the implementation of integrative adaptive business processes of individual development projects;

$E_{ek,i}$ – ecological effect from the implementation of integrative adaptive business processes of individual development projects;

$E_{T.T,i}$ – technical and technological effect from the implementation of integrative adaptive business processes of individual development projects;

$E_{C,i}$ – social effect from the implementation of integrative adaptive business processes of individual development projects;

E_{Pi} – resource effect from the implementation of integrative adaptive business processes of individual development projects;

$E_{IN,i}$ – the effect of the investment attractiveness of the region from the implementation of integrative adaptive business processes of individual development projects;

k_B – coefficient of significance (weight) of the effect relative to the strategic development plan of the region, country, etc.

At the same time, the size of the economic effect from the implementation of integration adaptive business processes of individual development projects is calculated according to formula (2):

$$E_{Ei} = \sum_{i=1}^m \frac{P_i \cdot P_{Ai}}{B_{Ti}}, \quad (2)$$

where P_i – economic results from the implementation of regional development projects;

P_{Ai} – market attractiveness of the results of implementation of certain development projects of the region;

m – number of projects;

B_{Ti} – costs necessary for the implementation of the relevant set of development projects in the region.

The market attractiveness of the results of the implementation of certain regional development projects means the receptivity of a certain product by society and, accordingly, in a certain way reflects the predicted possibility of its further implementation (market demand, market significance, etc.).

We calculate the amount of environmental and other types of effects from the implementation of integrative adaptive business processes of individual development projects according to formula (3):

$$E_{ek} = \sum_{i=1}^m \frac{P_{Oi}}{P_{Pi}}, \quad (3)$$

where $P_{O,i}$ is the expected amount of environmental benefit from the implementation of certain business processes;

$P_{P,i}$ – the planned amount of environmental benefits from the implementation of specific business processes in relation to the national and regional development plan of the region.

The synchronicity coefficient shows the level of compatibility of the business processes of various development projects of the region, which are carried out with maximum effectiveness and are interconnected due to resource interdependence, in accordance with the plan of its strategic development.

Therefore, the synchronicity factor will make it possible to coordinate the implementation of various projects due to the resource interdependence of certain business processes.

The synchronicity coefficient reflects the level of development of the region due to the degree of compatibility of the implemented projects to ensure its sustainable development. This happens due to the effects obtained from the implementation of certain business processes of individual projects and their interrelationships determined by the strategic development programs of a specific region in particular and the state in general. In other words, it makes it possible to determine the expediency of implementing certain business processes to ensure the stable development of the region. For example, the population of a certain region is traditionally oriented towards the implementation of certain business processes that provide them with proper working conditions. Therefore, in order to promote a certain project, the implementation of which is more focused on spiritual and cultural development will require additional efforts for its adequate perception and approval.

Therefore, the presence of the value of the coefficient of synchronicity of the business processes of the region for a certain period of time will make it possible to outline the

susceptibility of this region to the implementation of individual projects, according to the specialization orientation (complexity) of various business processes, the implementation of which they will require. In a broad sense, the synchronicity coefficient will make it possible to form a kind of process-oriented development code of a certain region.

If the synchronicity ratio is greater than 1, we will have a margin of safety and the opportunity to implement other business processes of the remaining development projects.

If the synchronicity coefficient is less than one, measures should be taken to increase the value of this indicator. As a result, you can get two options for the development of events:

- a) a higher value of the synchronicity coefficient by combining with business processes of development projects of other regions in which there is a necessary safety margin;
- b) the final unchanging value of the synchronicity coefficient, which is associated with the presence of a basic set of business processes that cannot be changed, since their interaction is fundamental (without which the implementation of other business processes of the region's development is impossible).

5. 3. Structural and logical sequence of stages and features of application of scientific and methodological approach to managing strategic development of the region

Fig. 1 provides a structural breakdown of the management approach to determining the level of development of the region using the synchronicity factor of business processes of certain regional development projects and ensuring its sustainability of the correspondingly obtained results.

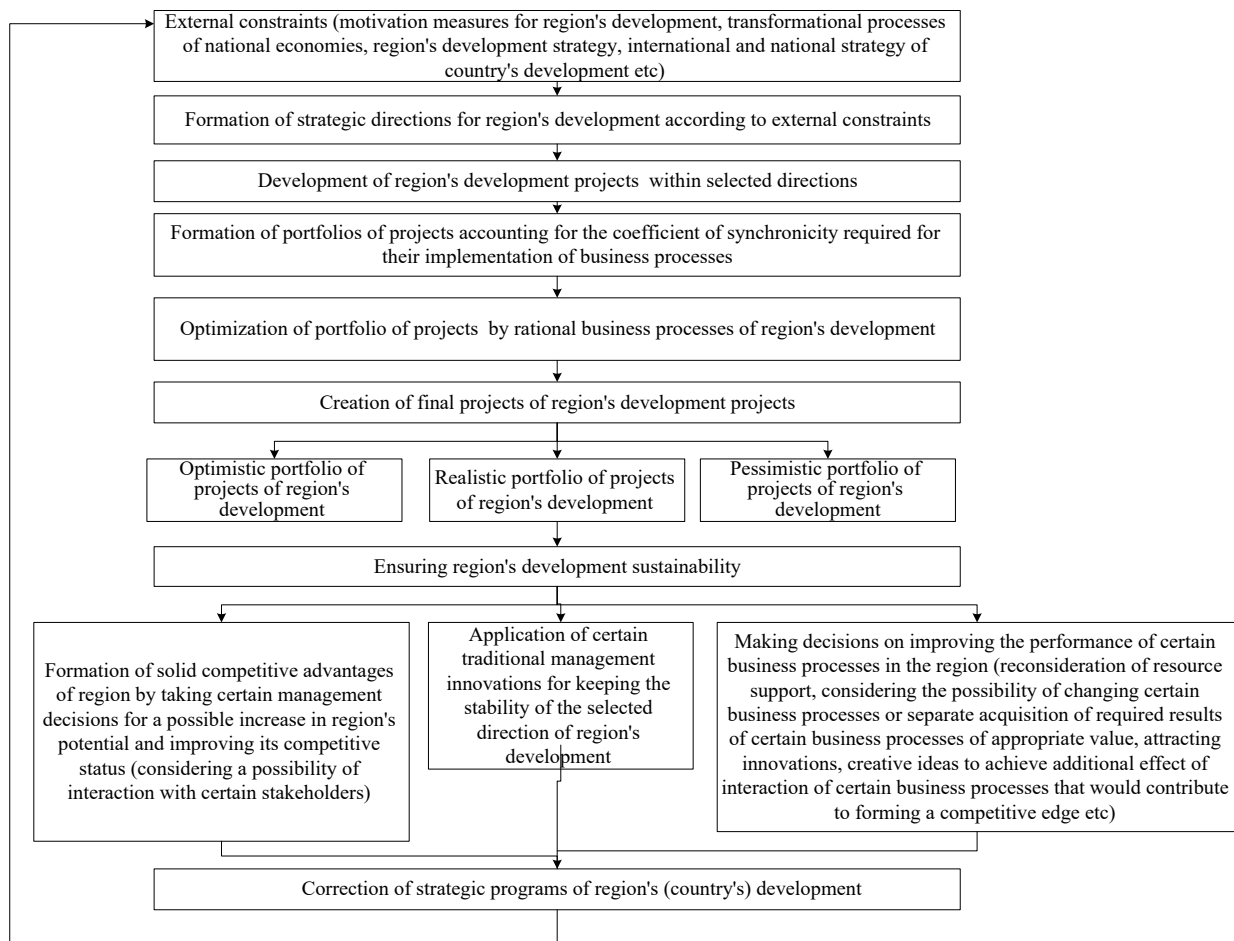


Fig. 1. Scientific and methodological approach to managing the strategic development of the region

The use of certain types of universal business processes is relevant for the development of the region as well as any business entity: basic, auxiliary, and service. At the same time, the structure, content, and sequence of implementation of the main business processes must meet the specified parameters as much as possible, and auxiliary and service ones can change, combine, complement each other, or replace each other (or their structural elements) depending on the criteria of optimality.

In order to form optimal regional development portfolios, it is necessary to form effective and competitive development portfolios of individual territorial communities included in each district. This is necessary for the maximum possible balancing of the development of individual territorial communities, taking into account their specialized orientation with the help of the components of the synchronicity coefficient, in the direction of stabilizing the overall development of the region.

5. 4. Practical principles of using the coefficient of synchronization of business processes of individual projects for the development of territorial communities

Table 1 gives the coefficients of synchronicity of business processes of development projects of individual united territorial communities (UTC) for 2017–2022.

In 2022, the coefficient of synchronicity of business processes was determined for one of the proposed portfolios of development projects, formed according to the basic criteria of previous years, according to the development programs of various regions, which include the studied UTC.

As an example, Table 2 gives the initial data necessary to determine the synchronicity ratio of business processes of the proposed portfolio of development projects of the Zabolottiv's'ka community in 2022. This calculation is necessary in order to determine the possibilities of stabilizing the development of the Volyn oblast (Ukraine) according to the approach shown in Fig. 1. The calculation was made using the proposed formulas (1) to (3).

The general development program of the Volyn oblast is to create conditions for the development of small and medium-sized businesses, the use of renewable energy sources, the development of communal and land management, the improvement of community security and the level of social protection for its residents. Therefore, the proposed portfolio of projects “Creation of a recreation and health zone” of the development of Zabolottiv's'ka UTC within the framework of this development program consists of projects, the implementation of which requires the implementation of 4 main business processes. These business processes include the creation of a beach and coastal zone, a zone of institutions and service enterprises, a picnic zone, a camping zone. For this purpose, it is planned to carry out works of additional business processes in a certain direction. Additional infrastructural business processes: creation of a pedestrian embankment; construction of driveways and footpaths with a hard surface. Additional sports and health business processes: creation of a system of green spaces for limited and general use; construction of playgrounds for sports, recreation and children’s playgrounds. Additional social business processes: arrangement of a parking lot for vacationers with cities for groups of the population with reduced mobility; creating a barrier-free environment for people with reduced mobility, etc.

The coefficient of synchronization of business processes of the proposed portfolio of development projects will be:

$$K_c = 0.2 \cdot 0.32 + 1.1 \cdot 0.2 + 0.5 \cdot 0.1 + 0.7 \cdot 0.2 + 0.6 \cdot 0.1 + 0.9 \cdot 0.2 = 0.714.$$

The implementation of this portfolio of projects will contribute to obtaining various types of effects, which to a greater (ecological effect) or lesser extent correspond to the planned values of the development of a specific component of the region of the Volyn oblast.

Graphical interpretation of the synchronicity factor of business processes of development projects of individual UTC is shown in Fig. 2.

If we analyze the data given in Table 1 and shown in Fig. 2, we can see that for some UTCs there is a smooth (Zabolottiv's'ka and Horodots'ka) and for others a jump-like (Chervonohrads'ka UTC) change in the value of the coefficient of synchronicity of business processes. Such changes are due, mainly, to different orientations of the goals of regional development, which must be achieved by a certain UTC, and to the peculiarities of its territorial development. In addition, the types of effects obtained in the process of implementation of promising at first glance and effective projects, excess capacity and insufficient receptivity to the planned development of individual territorial communities, etc.

Table 1

The value of the coefficient of synchronization of business processes of development projects of certain UTCs for 2017–2022

Name of the united territorial community (UTC), region, country	The value of the coefficient of synchronization of business processes of individual UTCs by year					
	2017	2018	2019	2020	2021	2022
Zabolottiv's'ka UTC, Volyn's'ka oblast', Ukraine	0.65	0.61	0.56	0.58	0.6	0.714
Horodots'ka UTC, L'viv's'ka oblast', Ukraine	0.94	1	0.98	0.87	0.96	1.05
Chervonohrads'ka UTC, L'viv's'ka oblast', Ukraine	0.9	0.54	0.6	1.1	0.7	0.5

Note: calculated by the author according to the development data on individual UTCs [8–10]

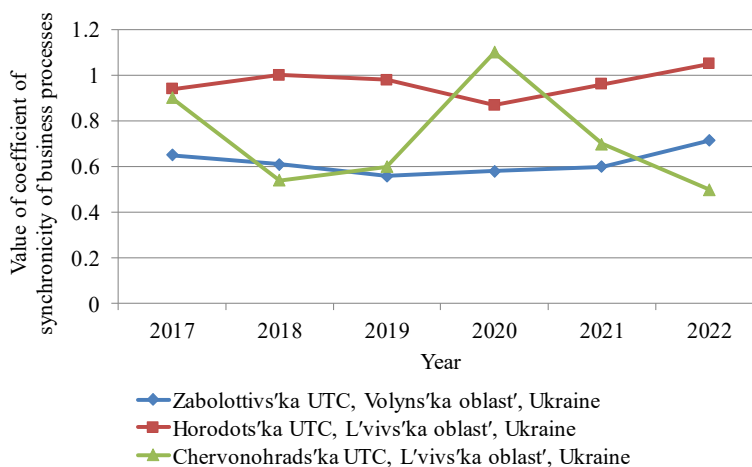


Fig. 2. Graphical interpretation of the coefficient of synchronization of business processes of development projects of individual amalgamated territorial communities

Table 2

Initial data on determination of the coefficient of synchronization of business processes of the proposed portfolio of projects for the development of the studied region

Indicator name	Indicator value	
	Expected size of a certain type of benefit from the implementation of specific business processes	The planned amount of a certain type of benefit from the implementation of specific business processes in relation to the principles of the national and regional development plan of the region
Environmental effect from the implementation of integrative adaptive business processes of individual development projects, %	110	100
Technical and technological effect from the implementation of integration adaptive business processes of individual development projects, %	50	
Social effect from the implementation of integration adaptive business processes of individual development projects, %	70	
Resource effect from the implementation of integration adaptive business processes of individual development projects, %	60	
The effect of investment attractiveness of the region from the implementation of integration adaptive business processes of individual development projects, %	90	
The economic effect of the implementation of integrative adaptive business processes of individual development projects, coeff. vym.:	0.32	
– economic results from the implementation of regional development projects, thousand UAH	335100	
– market attractiveness of the results of the implementation of certain regional development projects, coeff. vym.	1.2	
– expenses necessary for the implementation of the relevant set of regional development projects, thousand UAH	1270900	

Note: formed according to certain UTC development projects, the US dollar exchange rate for the calculation period is UAH 27.28

The development of Zabolottivs'ka UTC mainly occurs due to the implementation of projects of a similar orientation and, accordingly, by obtaining the same types of effects, which contributed to the unbalanced growth of various components of the development of the territorial community. At the same time, the development goals defined by the regional program were not fully achieved.

Various projects were used for the development of Horodots'ka UTC, which supported almost all regional aspects of development at the same level. In this case, the proposed projects ensured the most accurate achievement of the set goals of the regional development program.

For the development of Chervonohrads'ka UTC, projects with the highest effectiveness were chosen, respectively, they ensured the maximum achievement of the set development goals only in individual components. Therefore, in this case, the development of the region was as unbalanced as possible, which affected the absence of a single specialized vector of community development. This indicates that UTC has lost its strategic prospects for development due to current benefits. The state of development of the Chervonohrads'ka UTC shows the lack of expediency of taking into account the specific focus and receptivity of individual territories and regions as a negative phenomenon when developing strategic programs for their development at the macro level. This is manifested in the fact that the goals of regional development are achieved to the maximum, but without strategic perspective due to the

neglect of the territorial capacity and potential receptivity of a specific territory.

According to the obtained values of the coefficient of synchronicity of the business processes of the development of Zabolottivs'ka UTC according to the data of Fig. 1, we received a pessimistic portfolio of development projects. Optimization of such a portfolio of development projects is possible by applying specific management innovations [11]. In this case, creativity can create additional effects from the interaction of certain business processes during the implementation of specific regional programs in different ways.

Having applied certain types of management innovations and the principles of strategic management [12] for the effective implementation of creative solutions regarding the interconnection and optimization of the relevant business processes necessary for the implementation of this portfolio of projects, the value of the synchronicity indicator will change and become:

$$K_c = 0.2 \cdot 0.4 + 1.1 \cdot 0.2 + 0.5 \cdot 0.1 + 1.05 \cdot 0.2 + 0.6 \cdot 0.1 + 0.98 \cdot 0.2 = 0.816.$$

If we plot the trend of the change in the coefficient of synchronicity of business processes of the portfolio of development projects of Zabolottivs'ka UTC, we will get its value at the level of 0.597. If we implement the development projects of the studied UTC by synchronizing their business processes, purposefully increasing the promising components relative to the strategic development plan of the Volyn oblast, we will get 0.816, the most effective of the possible combinations. This value was obtained as a result of the implementation, in addition to the considered portfolio of development projects, of one more project, which concerns the repeated and/or further implementation of part of the involved business processes. This project was chosen taking into account the peculiarities of business processes, the implementation of which is necessary for the implementation of the portfolio of development projects "creation of tourist and recreational space". Such a project is an opportunity to expand the practice of inclusive and integrated education of children with special psychophysical development in preschool and general educational institutions. The implementation of this project will be expedient since, taking into account the peculiarities and the main results obtained from the implementation of the first project, the basic prerequi-

sites will already be created in the community – the creation of a barrier-free environment for groups with limited mobility. For the implementation of the proposed measures, using certain motivational incentives, specialists already available in other regions with appropriate qualifications can be involved. Motivational incentives may include providing specialists with housing, the possibility of free recreation of their own children in recreation complexes available on the territory through the creation of children’s camps for a certain period, etc.

However, if we implement these projects separately by performing a certain set of different business processes in both cases and determine the overall synchronicity factor of business processes as an arithmetic average, we will get:

$$K_c = (0.714 + 0.56) / 2 = 0.637,$$

$$K_c = 0.2 * 0.1 + 0.4 * 0.2 + 0.4 * 0.1 + 1 * 0.2 + 0.4 * 0.1 + 0.9 * 0.2 = 0.56,$$

where 0.56 is the value of the synchronicity of business processes as a result of the implementation of the project to expand the practice of inclusive and integrated education of children with special psychophysical development at pre-school and general educational institutions.

Moreover, the level of ensuring the social effect (what exactly this project is aimed at) will be 100 %, but this project will not provide a significant additional increase in other types of effects. That is, this project will be effective from the point of view of the effectiveness of its implementation of the correspondingly set goal, however, without taking into account the effectiveness of the interdependent implementation of business processes that are performed as a result of the implementation of these projects.

The main results of determining the level of synchronicity of the business processes of the portfolio of development projects and taking into account these values in the formation of stable development of the Volyn oblast are given in Table 3.

Table 3

The value of the level of synchronicity of the business processes of the portfolio of development projects of Zabolottiv'ska UTC in relation to the features of its calculation, coefficient measurement

The value of the synchronicity coefficient		
Not taking into account the synchronization of business processes	Taking into account their synchronicity within a specific (separate) development project	As a result of using certain managerial innovations to form a portfolio of development projects for integration-adaptive business processes
0.637	0.7	0.816

Determining the coefficient of synchronicity of the business processes of the region will make it possible to outline the specific direction of development of a certain territorial community (region) depending on the predominance of the value of a certain effect over a long period of time, which will constitute its permanent competitive advantage. To increase the level of development of the region, this advantage should be taken into account when forming the regional and national strategic development program.

If the business processes of regional development projects are not synchronized, it is necessary to determine the synchronization coefficient separately according to the key directions of obtaining a certain type of effect in a certain territorial community: technical and technological, economic, ecological, etc. This will make it possible to determine such integrative adaptability of business processes, in which their implementation will ensure the increase of the desired effect to increase the value of the synchronicity coefficient and ensure the stability of the development of the region. The development of the region in this case can be strengthened through the use of operational measures of management innovations depending on a different combination of certain business processes of individual development projects of territorial communities.

Therefore, the calculation of the coefficient of synchronicity of the business processes of individual territorial communities will allow for a balanced increase in the necessary effects of the regional development programs, which will ensure the stable development of certain regions in the strategic period.

6. Discussion of results of studying the impact of consolidation synchronization of business processes on the stability of the region in the strategic period

Stable development of the region depends on the ability to rationally balance its individual components in order to obtain a certain effect necessary to ensure the maximum achievement of the set goals of the regional development program. Obtaining the necessary level of a certain type of effect of a specific component of the development of the region, as shown in Fig. 1, depends on the possibility of optimizing its individual elements due to the rationalization of the connections between them according to certain criteria. In order to ensure the effectiveness of establishing rational relationships between individual elements of various components of the development of the region, provided that such relationships are maximally effective, the selected elements should be universal. That is, they should be the same for different components of the development of the region and have the possibility to distinguish in their structure comparable parts for which it is expedient to carry out optimization measures (expenditure of resources, duration of implementation, exhaustion of human potential, etc.). In the study, the business processes of certain development projects of the respective regions were considered as such elements. These elements, unlike those presented in the works of scientists who in this capacity consider various aspects [1–3, 7], projects [6] and desired results [5], make it possible to combine them into separate portfolios. Such development portfolios are formed in accordance with a specific component of the region due to mutual resource sufficiency of each other. Such a combination contributes to obtaining the effects determined by regional and national development programs, as it gives the opportunity to choose the desired alternative development projects in accordance with the maximum effectiveness of the implementation of their individual business processes. This choice is determined by the following conditions – the obtained maximum effectiveness of the built relationships between specific business processes takes into account the level of their adaptability (compatibility). In turn, the

establishment of adaptive relationships makes it possible to determine the rational sequence of execution of business processes – their synchronicity. By optimizing the structure and composition of business processes, we will get the opportunity to implement business processes with the maximum effectiveness determined by the principles of the regional development program.

In accordance with the obtained theoretical conclusions of the conducted research, a structural breakdown of the management approach to determining the level of development of the region using the coefficient of synchronicity of business processes of certain development projects is presented (Fig. 1). As a result of its practical application (Tables 1–3), the ways of ensuring and peculiarities of maintaining the level of development of the region at a sufficient level and/or higher, respectively, of the general development programs, were clarified. The obtained results confirm the possibility of increasing the competitiveness of the region, which is necessary for gaining strong positions in the national market. An important role in this process is occupied by modern and effective tools of creative intellectual and innovative foundation necessary for creating a favorable environment for stable development of the region due to the formation of a certain unique effect. The formation of such an effect is due to the application of specific management innovations to rationalize the interaction of relevant business processes of certain development projects implemented both within one territorial community and a certain set of different communities of a specific region. This is confirmed by the data in the Table 3.

The limitations of the maximum use of the effects created as a result of the rationalization of business processes of regional development projects are the lack of a database on the specialization of a particular region. Therefore, further research is needed for the grouping of regions, taking into account the directions of their development, according to the degree of effectiveness of their individual components regarding the possibility of partnership interaction.

The developed scientific and methodological approach, shown in Fig. 1, should be used when forming a strategy for the development of territorial communities. The disadvantage of using the proposed approach is the lack of methodological support for the formation of a strategy for the development of territorial communities, which would include the proposed stages of the process of managing the strategic development of the region. This deficiency can be eliminated by forming such methodological support and stimulating its use at the regional and national levels of development.

7. Conclusions

1. The expediency of ensuring the sustainability of the region's development through the formation and effective management of a rational portfolio of its strategic development projects within the framework of developed regional and/or national programs has been substantiated. The formation of alternative development portfolios, ensuring the effectiveness of their management and the effectiveness of their implementation is proposed to be carried out taking into account the adaptive relationships between business processes necessary for the implementation of

relevant regional development projects. Accordingly, the selection of a rational development portfolio is proposed to be carried out in accordance with the obtained effects of the implementation of interrelated business processes of specific development projects and the target parameters of the strategic development program of the region and the country. This will make it possible to outline a strategically promising portfolio of development projects of a separate territorial community based on the criterion of maximum effectiveness of the interaction of its individual business processes.

2. It is proposed to determine the effectiveness of the interaction of business processes of alternative development projects using the synchronicity coefficient. This indicator reflects the possible types of effects of the interaction of business processes, the implementation of which ensures the implementation of specific development projects of the region and/or territorial community. When calculating the synchronicity factor, the following effects were considered: economic, ecological, technical-technological, social, resource, investment attractiveness. Focusing attention on these types of effects contributes to the possibility of determining the level (direction) of specialization and the ability to ensure the stability of individual territorial communities and/or regions by strengthening the necessary types of them in accordance with the requirements of regional and national development programs.

3. Implementation of the stages of the proposed scientific and methodological approach to managing the strategic development of the region contributes to the formation of alternative portfolios of development projects of the territorial community, and accordingly, the value of the synchronicity coefficient is determined by the vector of its development (optimistic, realistic, pessimistic). Determining the direction of development contributes to the delineation of management measures to ensure the effectiveness of the development of the territorial community and the reserves of increasing the strategic potential necessary for the formation of stable development of the region.

4. Our results of calculating the coefficient of synchronicity of business processes of the development projects of individual territorial communities confirmed their ability to increase the effects of regional development programs in a balanced manner. For example, the value of the coefficient of synchronicity of business processes of development projects of Zabolottiv'ska UTC of 0.637 contributed to the need for their rationalization. The increase of this indicator to 0.7 signaled the need and possibility of supplementing the development of the studied community with new projects, since the use of certain management measures contributed to its increase to 0.816. The conducted measures made it possible to determine a strategically promising vector for the formation of a portfolio of development projects of a separate region, the effective observance of which can ensure its stable development.

Conflicts of interest

The authors declare that they have no conflicts of interest in relation to the current study, including financial, personal, authorship, or any other, that could affect the study and the results reported in this paper.

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Data availability

All data are available in the main text of the manuscript.

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