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INNOVATIVE TOOLS FOR ADMINISTRATION OF THE CHANGE MANAGEMENT PROCESS OF CONSTRUCTION STAKEHOLDERS

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Ukraine takes part in many international programs for the implementation of regulations in the field of economics and environmental safety based on the principles of sustainable development. Implementation problems associated with the transformation of the environment should be solved through systemic transformations in production as the main tool of the modern post-industrial society, influencing all spheres of human life. The article discusses promising directions for optimizing structural and organizational ties in investment and construction systems, which have emerged as a result of taking into account the formation of managerial influences of economic and other types of cyclicality. The fundamentals of a new tool for analytical substantiation of decision-making in managing changes in construction stakeholders – resonance-compensatory management - are outlined.

Key words: investment and construction systems, resonant compensation management, theory of economic cycles, engineering, adaptive development.

Formulation of the problem. Organizations of any type are created to perform a certain circle of functions related to the satisfaction of society's needs or individual stakeholders. Although in the classical formulation of the

organization's management, the main attention is focused on ensuring the stability of the organizational system, which is considered to be a guarantee of survival and development platform, in the scientific community there were substantiated doubts in the reliability of this thesis in modern conditions. In society, the demand for new products and services is constant. But for this purpose, there are no «ideal» organizations that could satisfy this demand. An organization that is capable of producing new innovative products, to produce new innovative decisions and services in the market, according to the principles of evolutionary development, must develop, transform new knowledge into practical values, often by getting rid of old non-state concepts and technologies. Therefore, it can not remain stable in matters of corporate integrity and growth trends at the same time. Because of this, the ability to change in modern conditions is more important than stability. Transformation of the market environment to the requirements of the Sustainable Development Strategy today is another circumstance for performing transformations in the production sphere. This requires the creation of new methodological approaches to change managment, particulaly in investment and construction systems, as leading in any economic system, taking into account the interests of building stakeholders. Particular attention should be paid to the formation of mechanisms for financing investment and construction projects and engineering projects of various types.

Analysis of recent research and publications. Basic principles and theoretical bases of managing changes as advisory activities aimed at managed and planned achievement of targeted states of economic systems, considered in the works of such scientists as I. Adizes, J. Kotter, L. Grayner. The organizational and experimental approaches to managing the changes in industrial enterprises were considered in the research of domestic scientists I. Zapuhlyak, T. Kondratyeva, T. Gwiniashvili, M. Kizim,

S. Steciv, A. Shegda, etc. Transformational phenomena that arise in the process of organizing effective building development and engineering, as separate functional segments of the economic mechanism of the construction and investment complex, have been reflected in the series of scientific works G. Ryzhakova, O. Malikhina [1]. Functional economic and applied aspects of harmonizing the interests of stakeholders of construction were considered in the works of N. Verhogluadova [2], I. Kononova, R. Tormosov and D. Ryzhakov.

The formulation of the article objectives. In the process of operating activity of investment-building companies (developers), there are a number of sustainable issues, without solving which the risks of business activity are sharply increasing. Among these issues, the most important is the formation of effective mechanisms for making managerial decisions on the basis of the modern adaptive economic and analytical toolkit taking into account the influence of changes in the external and internal environment of construction enterprises on organizational and structural interrelations between stakeholders of investment and construction projects.

Permanent updating and modification of economic methods of enterprises management of the construction industry are the basis for the effective development of the investment and construction sphere of the country. This process requires changes in modern institutional infrastructure, taking into account fluidity and uncertainty in the external market environment where the implementation of construction projects is set. Particular attention should be paid to the development of effective economic and organizational mechanisms of adaptation of developer structures to changes in the trajectory of development of the global economy from linear to bifurcation (unpredictable) to ensure their balanced growth and improvement. The purpose of the study is to use a new mechanism of resonance-compensation management for soft changes in

building stakeholders in accordance with stochastic changes in the implementation of construction development and engineering projects.

Presentation of the main research material. Initially, the theoretical preconditions should be formed to improve the organizational and institutional platform of economic management of the construction industry enterprises in conditions of bifurcation changes in the market environment [3].

For efficient management of organizations with orientation to advance the requirements of the external and internal environment, it is necessary to ensure its functioning, adaptation and development [4]. Control impacts carried out in the control process are impulse, intermittent and short-term, directed to a certain adjustment of the management object. Such short-case impacts can be aimed at achieving two states of the organization: sustainable functioning or development.

In the work of I. Adizes [5, p.56], it is argued that changes management are a key function of the organization, which determines the processes of its adaptation and development. Unchanged organization does not develop and do not exist. The effectiveness of changes is determined by the processes of internal and external integration and disintegration of systemic ties. In another work [6, p.124], the main stages of the organization's life cycle are explained, which are determined by the methodology of change management, the purpose of which is to help the organization cope with normal and abnormal problems of development and aging, to achieve the state of heyday and to develop. internal abilities that allow in this state as long as possible. The main conclusions for this study are the cyclical development of organizations and the need to introduce changes to changes as a functional direction of activity to maximize the economic effect and survival of the organization.

On the other hand, the economic basis of the study is formed by a number of the theories of economic cycles described in sources [7, 8].

Today, the scientific community allocates such generally recognized economic cycles:

1) Cycles of Kondratiev: long-wave cycles lasting 40-60 years, in which the main driving force is radical changes in the technical base of social production, its structural restructuring;

2) Koval's cycles: reproductive cycles of 20 years, where the driving force is a shift in a reproductive structure of the national economy;

3) Cycles of Kitchin: cycles of movement of inventories of commodity-material values with a period of 3-5 years, which are generated by the dynamics of their relative value at enterprises;

4) Cycles of K. Jangler: derivatives of economic cycles with a period of 7-11 years, which are formed as a result of the interaction of various monetary factors;

5) Investment cycles of various periodicity associated with market fluctuations in investment activity [8].

In the development of these cycles, the Hungarian economist B. Shyposh [7] found the following feature: longer cycles, «absorbing» in itself, absorb short. In this case, the duration of each subsequent cycle is approximately twice as short. This means that the cyclicity of the economy is a system of cycles with rigid causal bonds, the main contour of which form long-term cycles. Mechanisms are determined by the interaction of low duration cycles. All of them complement each other in content, but vary for reasons.

If we analyze the development of the enterprise in the period one of the cycles described above, using the principle of decomposition, then the organizational and economic indicators of the enterprise will also have a certain cyclicality, depending on its sectoral affiliation. Periodicals can be

called the characteristics of financial statements that are determined in a certain order with the same frequency and are rhythmic (Fig. 1).

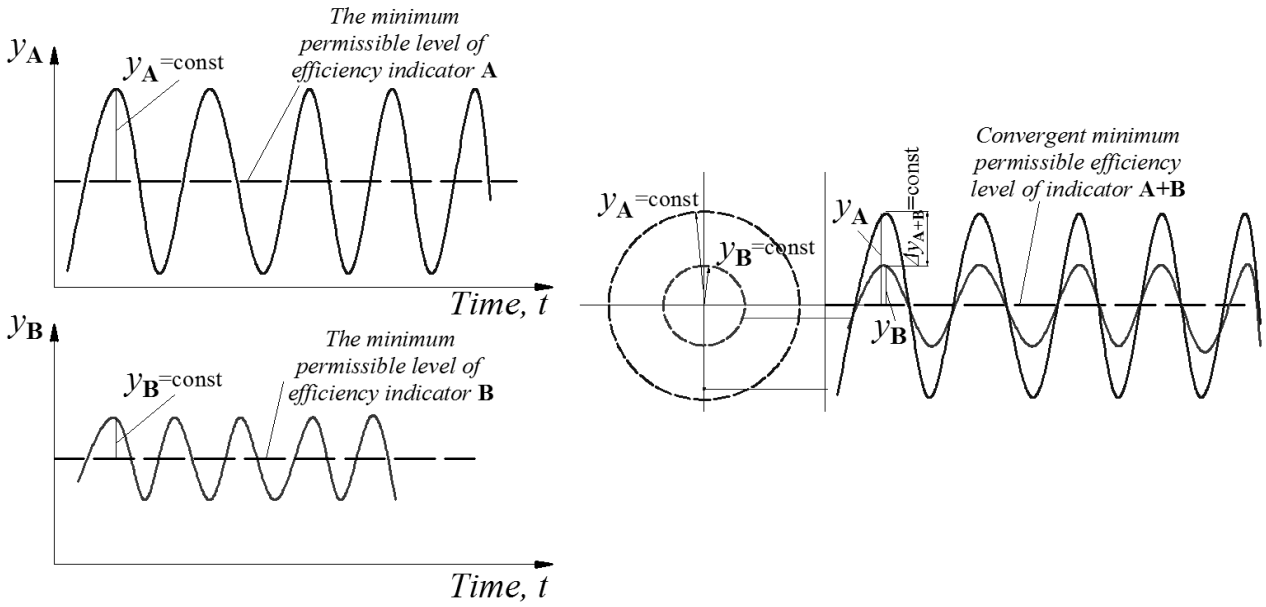

Fig. 1. Rhythmic cycles

For the enterprises of the construction industry, natural cyclicity of indicators dictates the seasonality of the implementation of construction and installation works, but for such works characteristic periods of deployment and coagulation, indicating the rhythm of periods, but "reducing" amplitude – fading cycles (Fig. 2).

Consumer demand for construction products, which directly affects the profits of the enterprise, is also seasonal (the growth of demand for real estate in autumn or for building materials in the spring), but significantly depends on the purchasing power of the population, that is, general economic indicators of the country and the world. Therefore, cycles of consumer activity can be considered as arrhythmic (Fig. 3).

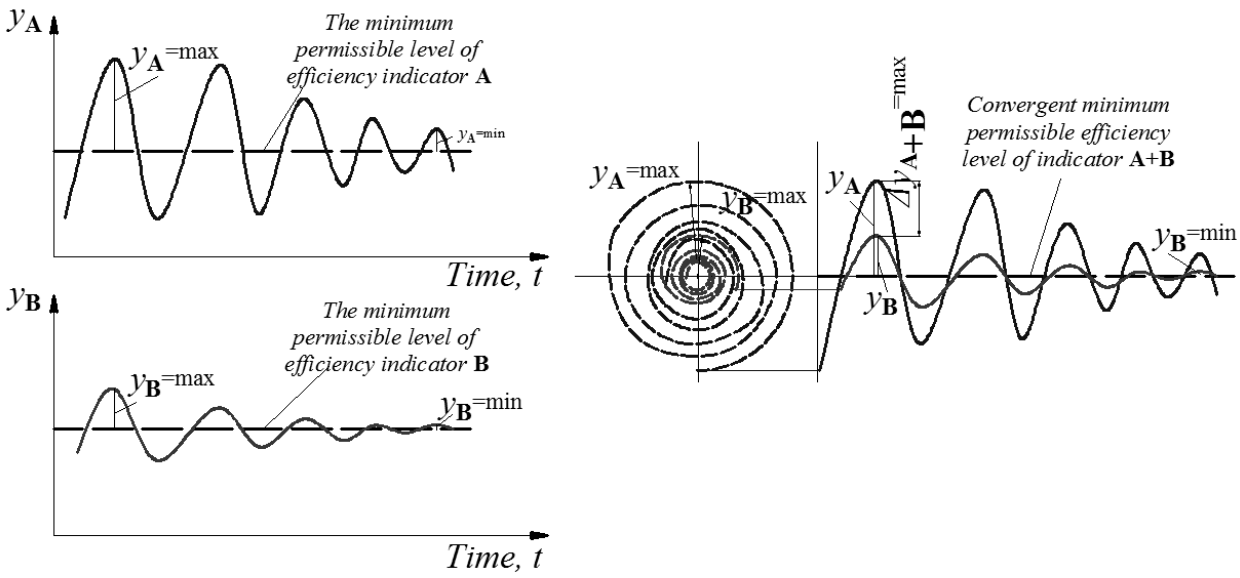

Fig. 2. Fading cycles

Visualization of natural development of the enterprise as a system of interconnected economic and technological indicators in accordance with classical theories of economic cycles, presented in Fig. 1-3, allows you to form a hypothesis about mutual absorption (or partial leveling) of antamonal characteristics of the enterprise, built in a single coordinate system. This makes it possible to assert a compensatory effect when imposing adverse conditions of the external and internal medium (Fig. 4), in which the amplitude values of the indicators of the activity of stakeholders A and intercompensates. Conversely, the proposed system of non-rhythmic cycles or antagonal development periods allows to achieve the phenomenon of resonance of positive economic indicators in the imposition of favorable conditions – $\sum y_{max}$.

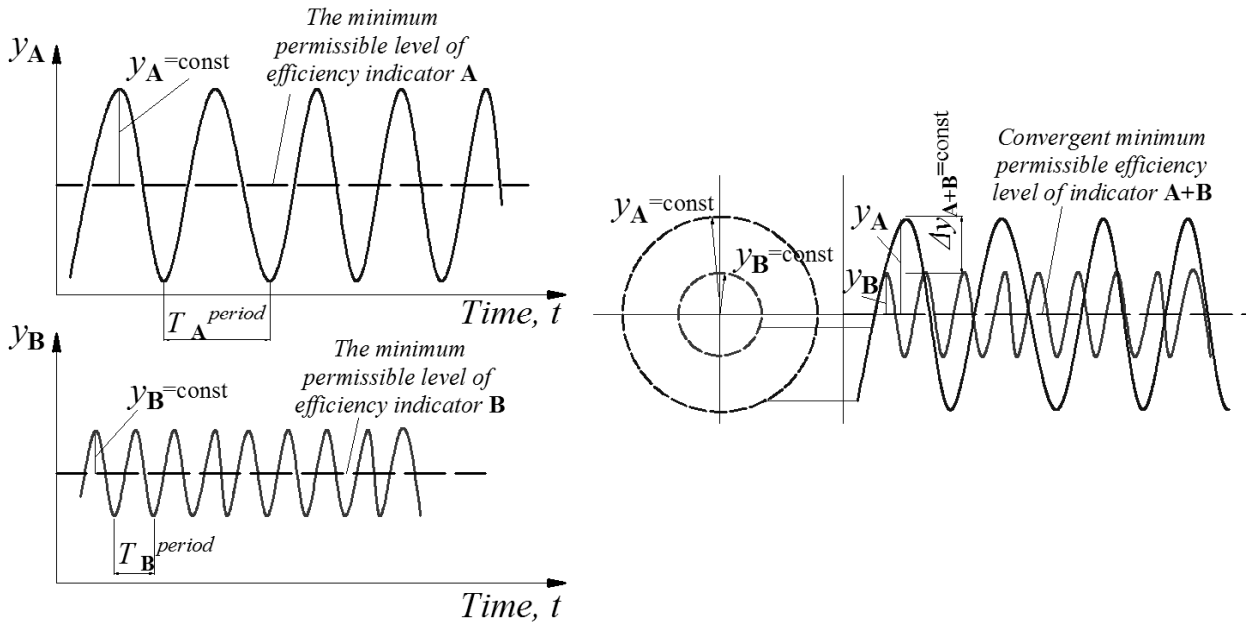

Fig. 3. Arrhythmic cycles

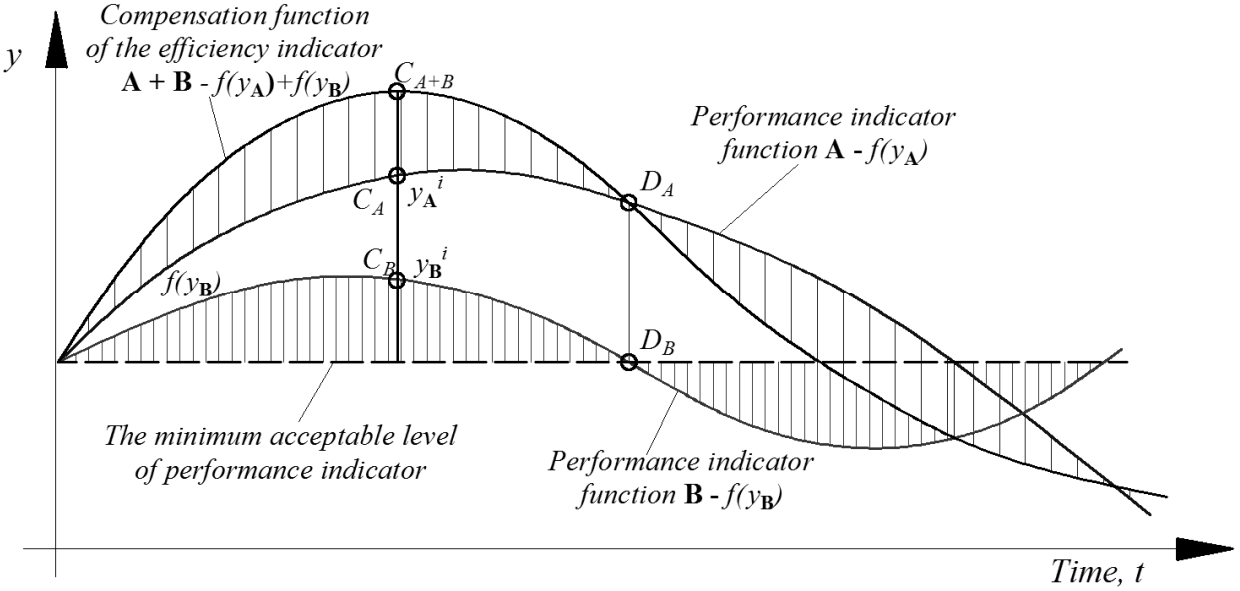

Fig. 4. Synergistic effect from overlaying of cycles amplitudes

When using resonant influences, there is no quantitative characteristic, but its corresponding technological, time and typical structure. Thus, small managerial and organizational influences can lead to significant positive results. This principle of nonlinearity is still very rarely used in practical management [9]. Such small direct influences include a timely transition from one mode of influence on another (from self-organization to

management, as well as combined packages of elements necessary for the implementation of business processes (information provision, human resources, technical and financial support).

An example of resonant influences may be the coordination of influence with the features of the performers and the complexity of the implementation of processes, withdrawing performers on their own mechanisms and ways of development by learning, internship, rotation. Moderate resonance management in interaction with self-organization allows you to translate an organization from one qualitative state to another with minimal time, resources and efforts due to a personalized set of different methods of influence.

Conclusions. Resonance management in an aspect of ensuring the adaptability of the construction industry to external challenges, together using the effect of dynamic instability gives the best results, that is, the organization can maintain equilibrium only with constant management influences. On the one hand, this is a threat, on the other hand – the opportunity to change the strategy of activity and quickly move from one quasistable state to another, more beneficial in the current market situation. In order to intensify this method of management of all specific construction market participants, it is necessary to update the content of the principles of economic management based on the introduction of resonant management technologies and taking into account the advanced role of information technologies in ensuring the efficiency of management of construction enterprises, projects.

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