

## THE IMPACT OF THE GENERAL STRATEGY ON THE STABILITY OF THE CONTROL SYSTEM IN THE CONDITIONS OF UNCERTAINTY OF ECONOMIC PROCESSES

### ВПЛИВ ЗАГАЛЬНОЇ СТРАТЕГІЇ НА СТІЙКІСТЬ СИСТЕМИ УПРАВЛІННЯ В УМОВАХ НЕВИЗНАЧЕНОСТІ ЕКОНОМІЧНИХ ПРОЦЕСІВ

*The article talks about the factors that affect the stability of the management system, the analysis of methodological approaches to the study of management. The aim of this article is to develop theoretical propositions formation and implementation of business strategy under uncertainty of economic processes. When choosing a development strategy, evaluation of sustainability is of primary importance. Strategic management in conditions of instability can both contribute to ensuring a more efficient functioning of the company, and increase the negative impact of the crisis. A promising direction in the search for solutions to this problem is the construction of a methodology that integrates the system of economic indicators into a comprehensive indicator of the effectiveness of a strategic solution.*

**Key words:** strategy, sustainability, enterprise, management system, processes, innovation .

*В роботі йдеться про фактори, що впливають на стійкість системи управління, про аналіз методологічних підходів до вивчення управління. Метою даної роботи є розробка теоретичних положень формування та реалізації стратегії підприємства в умовах невизначеності економічних процесів. При виборі стратегії розвитку першорядне значення має оцінка стійкості. Стратегічне управління в умовах нестабільності може як сприяти забезпеченню більш ефективного функціонування компанії, так і збільшувати негативний вплив кризи. Перспективним*

*напрямком в пошуку розв'язання цієї проблеми є побудова методології, яка об'єднує систему економічних показників в комплексний показник ефективності стратегічного рішення.*

**Ключові слова:** стратегія, стійкість, підприємство, система управління, процеси, інновації.

*В работе говорится о факторах, влияющих на устойчивость системы управления, об анализе методологических подходов к изучению управления. Целью данной работы является разработка теоретических положений формирования и реализации стратегии предприятия в условиях неопределенности экономических процессов. При выборе стратегии развития первостепенное значение имеет оценка устойчивости. Стратегическое управление в условиях нестабильности может как способствовать обеспечению более эффективного функционирования компании, так и увеличивать негативное влияние кризиса. Перспективным направлением в поиске решений этой проблемы является построение методологии, которая интегрирует систему экономических показателей в комплексный показатель эффективности стратегического решения.*

**Ключевые слова:** стратегия, устойчивость, предприятие, система управления, процессы, инновации.

UDC 338/2

**Saiensus M.A.**

PhD in Economics Department of Marketing

Odessa Nation University of Economics

**Karnaikhova A.S.**

Lecturer of the Department of Applied and Computational Mathematics and CADs

Odessa State Academy of Construction and Architecture

**Introduction.** In the current economic conditions of formation of market economy, domestic enterprises need effective tools for achieving competitive advantage. In these circumstances for many companies primary importance not only to ensure the survival of many competitive position in the market, which, in turn, largely depends on solving problems of strategic development of production systems related to the use of production facilities, reconstruction and upgrading of fixed assets, using modern technologies.

In conditions of uncertainty and extreme variability of socio-economic processes taking place today in Ukraine, considerable attention should be given to the evaluation strategy for the development and management of sustainability. «The problem of output of the domestic economy from the state of socio-economic stagnation on the path of sustainable economic development is of vital importance. It is the solution to this problem lies in the overcoming of backwardness in socio-economic development of society...» [1, p. 18-19]. Research on the sustainability of socio-economic system as a component of development strategy has a number of features and is characterized by interconnectedness and diversity of the processes that occur in the system.

#### **Analysis of recent research and publications.**

During the existence of the concept of «enterprise management strategy» several strategic approaches (models) of management were developed. One can single out such basic ones as the model of the Harvard Group (the founders of this approach were K. Andrews and K. Christensen), I. Ansoff's model and G. Steiner's model. Outstanding developments were the works of M. Porter. As the external environment became unpredictable, leading firms developed sophisticated control systems. At the same time, with the increasing uncertainty of the environment, other firms and scientists offer the opposite solution – to simplify and reduce the planning period or even abandon it, using experience and intuition.

The study did not find sufficient theoretical reflection of the formation of industrial enterprise strategy taking into account the needs of customers and applied aspects of its implementation.

Relevance of the topic due to the need to improve the production of enterprises in the long term, taking into account the needs of customers. Much of this problem can solve efficiently designed production strategy.

**Statement of the problem.** The purpose of the paper is the development of theoretical positions for-

mation and realization of industrial enterprise strategy. In the article the analysis of approaches to the definition of diagnostic stability and the conclusion about the need for further synthesis strategy of enterprise development and indicators of sustainability.

**The main material research.** The overall strategy of the company determines the main directions of its activity and encompasses the entire organization as a whole. "The stability of the socio-economic system" is the ability to perform specified production and economic functions and preserve their basic characteristics in certain temporal boundaries in conditions of the environmental instability.

Innovative activities have a twofold effect on the system: creates a new quality in the process of innovation and has a disturbing effect on its functioning. The main system elements of innovation sphere of science «sector of high technologies and science-intensive products, the education system in combination with the labour market, the business sector, the various sources of financing innovation, infrastructure (innovation and technology centers, technology transfer centers, technology parks, business incubators, venture funds, special economic zones of technical innovation type, etc)» [2, p. 330]. The production strategy is, above all, to the aspect of production (products, processes, methods and resources of production, quality and price and production time schedules). Thus, the production strategy – part of a joint strategy aimed at manufacturing organization. The main objectives of production strategy may be: optimum capacity utilization, lower production costs, production quality, quality production's supplies, compliance with production demand.

The strategy should be as flexible and adaptive as possible to changes in the external environment. The dynamics of the market can be so sharp and unexpected that the strategy will have to be changed almost completely. In addition, when developing an enterprise risk map, the values of the most likely risks should be considered critical. New prospects are a positive "reverse" side of the crisis, a compensation of the fact that due to a number of factors, whole directions of economic activity cease to be relevant and in demand. Therefore, it is necessary to constantly consider new opportunities for the enterprise that appear in the external environment, to identify promising niches, to monitor competitors and potential partners of the enterprise.

With regard to productive enterprises vitality is interpreted as the ability of socio-economic systems to perform their basic functions despite the damage received as a result of disturbing actions (even with an allowable loss of quality of their performance) and further to implement the optimal recovery strategy taking into account emerging restriction [3].

Thus is necessary to bear in mind the following ideas of the sustainability of socio-economic sys-

tems. First, the vitality should be considered as an intrinsic property of the system, which it has, regardless of operating conditions, that is shown at the revolting action, but under normal circumstances it remains "invisible". Second, the vitality is manifested in the fact that the system keeps not all the functions it must perform during normal operation, and only the basic functions, that followed by possible decline in the quality of their performance and reduces resistance. Third, the system must have the property of gradual degradation with increasing severity of adverse effects, and this process can be suspended by administrative influence. Fourth, in complex integrated systems the vitality displays the ability of the system to prevent cascade development of the revolting influence in it using a control system tools.

In this context, the strategy can be seen as a long-term plan to achieve the purpose. The functional area of industrial strategy is to manufacture, as a kind of operating activities. Production – type operations aimed at conversion (transformation) of primary materials in the final product and its implementation to meet requirements. The production system – focused process by which the transformation of individual system elements to useful products. According to V.N. Rodionova [4, p.81], the strategic decisions in the area of production must be taken in the following areas: focus production capacity; using production staff; development organization of production; quality management; development of industrial infrastructure; organization relationships with suppliers and other partners for cooperation; production management. R.B. Chase noted that the operating strategy is reflected in decisions related to the development of the manufacturing process and infrastructure necessary to support [5, p.704]. Makarenko M.V. noted that during production strategy is commonly understood set of rules and methods with the help of which, achieved the basic goals of a particular system. Production strategy developed on the basis of economic strategy.

Based on the nature and characteristics of economic strategy, the following stages of the economic strategy:

1. Analysis of the instability of the environment of the enterprise and choice of strategic management, the most acceptable to the projected level of instability in the studied term.

2. Analysis of achieved level of competitiveness of local businesses and identify strategic objectives, which will achieve in terms of projected volatility of the environment to provide the company a competitive advantage.

3. Select the most cost-effective means of achieving the strategic objectives by strengthening the strategic potential of the company.

4. Develop and implement a strategic program of technical and social development of the firm on the

planned term, taking into account adjustments to its analysis of "feedbacks" [6, p. 384].

The level of sustainability greatly affects the quality of their projects, their respective capacities of socio-economic system, especially in the management of risks. This level in its turn is the basis for changes of stability of economic systems. The risk analysis of the project which is the cornerstone of management of vitality of social economic system identifies the main sources of change of stability [6, p. 126]. The persistence of the socio-economic system that determines the effective management of risks, is the main tool to enhance its sustainability. In such a way sustainability of socio-economic systems is complex characteristic of its ability to innovate through the selection and implementation of safe projects to improve the sustainability of the system in an unstable environment. In terms of limitations of the common objectives and strategies of the organization is the principle of the best targeted search strategies of industrial structure and its elements. Strategy of industrial facilities, allowing the typical solution may be based on methods of similarity. The best of the solutions are regarded as some of the standards to which to approach practical solutions. Selecting components to ensure long-term strategy must target balance of all aspects of industrial activity and structure of the production system. Technological strategy must be closely related to staffing decisions. The level of progressivity production technologies affect the brand image, competitive solutions. The formation of strategy of development of production systems provides targeted search strategy elements in the environment that really changed. In the first stage of the environment affects the organization's mission, the second – the object, the third – the purpose of development.

Quality characteristic to these systems is the ability to perform specified functions of household production (as a result of effective innovation) and preserve their basic characteristics (sensitivity of innovation and activity). The significance of the quality of socio-economic systems is increasing in terms of uneven development and requires the development of new approaches to methodology of management of stability. Analysis of methodological approaches to the study of management (systemic, structural, synergistic) showed that each of them discloses only some aspects of the problem, so it seems necessary to use the synthesis of these approaches. The principles of the proposed methodology for managing sustainability of socio-economic systems are systematic, integrated, dynamic, continuity, adaptability, constructive, synergism.

This reflects the incremental search production strategy in an environment that is changing, therefore many control systems there is a regulatory process in which all-sufficient system at any given moment indicates the best course of action.

Analysis of the system of management of sustainability of socio-economic systems from the perspective of a synergistic approach showed that the control system is affected by the external environment and therefore need continuous change of the management system of stability. For this purpose in system should contain elements of self-development, which when using administrative complex increases the flexibility of the system. These elements are put in the system due to its belonging to a management system of activity, but their implementation is possible only in the case of an effective, integrated management of economic systems sustainability. Therefore formation of management for sustainability of socio-economic systems is based on the development of alternatives meeting the requirements of the overall impact on risk at various environmental changes in the management of functional and structural sustainability. The current production strategy will enable managers to submit tasks and staff interested in their implementation and allocate responsibility between staff and secure control of their work.

Methods of sustainability the socio-economic stability objects assessing and set of sustainability indicators. [6, p. 109-114.] This methodology contains elements of assessment not only the current level of stability, but also the instruments to determine the quality of the changes to correct the direction of management. It is based on the definition of indicators in three areas: financial vitality; stability level; the willingness of staff to the liquidation of emergencies and their consequences.

It is defined by a set of indicators which calculated by using the following formulas:

$$Vfo = Fo / Dfe,$$

where Vfo – financial vitality of the object, which is realized at their own expense;

Fo – value of own funds mobilized by the enterprise in case of emergencies,

Dfe – expected maximum value of the total damage

$$Vfl = \Sigma (FI) / Dfe,$$

where Vfl – the ability of object to attract the required value of borrowed funds fast;

FI – value of borrowed funds, which may involve the company in case of emergencies (H) with the cost of capital,

Dfe – expected maximum value of the total damage resulting from the implementation of emergency,

$$Av = Fo' / (1 - Fo'),$$

where Av – autonomy of organization stability (the ratio of debt to equity required for disaster management (H));

Fo' – the share of own funds which are mobilized in case of emergencies.

(1-Fo') – share of borrowed funds that are using to account for the company (should) involve in case of emergencies.

Table 1

	I group of indicators (specific gravity of the group 0.4)			II group of indicators (specific gravity of the group 0.3)			III group of indicators (specific gravity of the group 0.3)		
	Vfo	Vfl	Av	Ev	Evr	Sa	Rp	Rk	Ra
Value of the indicators	0,5	0,5	0,5	0,01	0,01	0,01	0,5	0,5	0,5
sufficient	1	1	1	0,2	0,2	0,2	0,9	0,9	0,8
average value	0,75	0,75	0,75	0,1	0,1	0,1	0,7	0,7	0,7
specific gravity	0,4	0,3	0,3	0,3	0,4	0,3	0,3	0,4	0,3

Level of stability characterizing the quality management system (its efficiency, preventive and developmental rate)

$$Ev = \Delta Dfe / (1-\Delta Ca),$$

where Ev – economic efficiency level changes stability

$\Delta Ca$  – the amount of change management costs of disasters compared with the initial value;

$\Delta Dfe$  – the relative magnitude of the changes expected maximum total loss resulting from the implementation of emergency as a result of changes in the value of the cost of preventing accidents.

$$Evr = \Delta Dfre / (1-\Delta Car),$$

where Evr – the quality level of stability changes;

$\Delta Car$  – the relative change in the costs of implementing the prevention of emergency situations as compared to the initial value;

$\Delta Dfre$  – relative change in the value of the expected total loss resulting from the implementation of emergency as a result of changes in the cost of preventing accidents.

$$Sa = Qv t / Qv b,$$

where Sa – stability growth rate level over time;

$Qv t$  – value quality of stability in the reporting period;

$Qv b$  – value quality of stability in the base period.

$$Qv = \Delta Dfp / \Delta Cp,$$

where  $Qv$  – quality of stability;

$\Delta Cp$  – the change in the cost of emergency prevention;

$\Delta Dfp$  – the change in the expected full damage arising in cases of emergency, as a result of increasing the number of preventive measures.

The willingness of staff to emergency situations and their consequences

$$Rp = Nse / Ne,$$

where Rp – training of personnel liquidation of consequences;

Nse – the number of employees successfully trained in industrial safety, people.

Ns – the total number of employees that are required to pass attestation of industrial safety, people.

$$Rk = Nse / Ne,$$

where Rk – the ability of staff to the elimination of the consequences;

Nn – number of employees who are trained in disaster relief, people.

Na – the total number of staff required for dealing with emergencies at this facility, people.

$$Ra = SEM / SEMr,$$

where Ra – the willingness of staff to emergency situations;

SEM – the number of employees involved in the liquidation of consequences of emergencies;

SEMr – the total number of people involved in the accident.

Under this technique, based on a method developed expertise boundary values and the weight of each of the indicators (Tab.1) [6, p. 109-114.].

**Conclusions.** As a result, it was determined that the management should be focused not only on the periods of change of innovative sustainability in the implementation of innovations, not least the use of administrative measures at the stage of development and (or) selection of the innovative project, the beginning of its implementation. Such measures increase the adaptive control system, because they allow to determine in advance the possible sources of decrease in stability and to develop mechanisms of adaptation through the creation of additional reserves. This increases the effectiveness of the measures implemented and gives management system integrated.

Thus, this research allows to draw a conclusion that the theoretical and methodological problems of management of sustainability of socio-economic systems by increasing stability have practical importance for the solution of important economic problems. The importance of this argument is confirmed by the fact that in the beginning of XXI century there is an increasing interdependence of the different parts of the world economy, dominated by innovation and knowledge-intensive activity. Innovation of production became the main factor of competitiveness" [7, p. 109-110]. So, through the effective management of innovation, socio-economic systems affect the level of self-sustainability, increasing its in the safe implementation of modernization of production capacities in the course of innovative development.

#### REFERENCES:

1. Zveryakov M.I. In search of an exit from the crisis. / M.I. Zveryakov // Ukraine economy. – 2013. – № 8. – P. 18-19.

2. Zveryakov M.I. Innovative development in terms of transformation and economic crisis / M.I. Zveryakov // *Journal of Social and Economic Research* Odessa State Economic University. – Odessa, 2009. – Issue 37 – P. 330.

3. Chase R.B. Production and operational management: transl. from Engl. / R.B. Chase, N.J. Equiline, R.F. Jacobs. – 8th edition – M.: Williams, 2004. – 704 p.

4. Rodionova V.N. Strategic management: a textbook / V.N. Rodionova. M.: RIOR, 2005. – 81 p.

5. Makarenko M.V. Industrial Management: A Text-

book for Universities / M.V. Makarenko, O.M. Mahalitna. M.: PRIOR, 1998. – 384 p.

6. Saiensus M. Analysis of innovative sustainability of socio-economic systems / M. Saiensus // *Socio-economic research bulletin: collection of scientific works* / chief editor M.I. Zveryakov; Odessa National Economic University. – Odessa, 2014. – Issue 4(55). – P. 109-114.

7. Zveryakov M.I. Economic sociodynamics: the role of the state in the modern economy / M.I. Zveryakov // *Economic Theory*. – 2013. – № 4. – P. 109-110.