

O. I. Kravchenko, SI "Luhansk Taras Shevchenko National University"

THE TECHNOLOGY OF MODELING OF THE UNIVERSITY'S STRATEGIC DEVELOPMENT

Kravchenko O. I.

Technology of Modeling of the University's Strategic Development

The article presents the substantiation of the technology of the modeling of the university's strategic development, in the center of which is developing an effective development strategy. The technology is a set of management procedures and operations, through the implementation of which it becomes possible to improve the university's competitiveness on the educational market. The author proved that the technology of the modeling of the university's strategic development makes the process of the investigation structured and orderly. The author defines stages of the technology of the modeling of the university's strategic development (preparatory, analytical, planning and resulting), which presents a scheme of real actions. Actions of the technology allow to achieve maximum dynamics of university development and minimizing risks and deviations from the chosen path of development. The contents of the stages of technology modeling of the university's strategic development are revealed: the first stage (preparatory) involves the definition of the logical relationships of the highest level of management and functional areas that will contribute to the effective modeling of the university's strategic development; the second stage (analytical) contains an analysis of the internal and external environment and the formation of strategic information; the third stage (planning) includes the elaboration of a development strategy, a strategic plan, a strategic program of the university; the fourth stage (resulting) provides for the adoption and promulgation of a document certifying the strategic development of the university and ways of transferring the university to a new qualitative state, i.e. the development strategy, the strategic plan, the strategic program of the university.

Key words: technology, modeling of strategic development, university, management activity, management operations.

Modern educational transformations necessitate the development of a trajectory of the development of a modern university, through which a higher education institution must not only adapt to changes to the external environment and also influence these changes. The ability to respond to the challenges of the environment is the essence of the strategic behavior of the modern university. The important task

of the theory and practice of management of higher educational institutions is the modeling of the strategic development of universities, in the center of which is developing an effective development strategy. The working up of the technology of modeling university's strategic development is topical issue, the primary importance of which is to identify and develop ways to enhance the university's competitiveness in the long run.

Different aspects of strategic management in education are disclosed in the works of N. Aniskina, L. Pasechnikova, V. Grigorash, L. Hrytsiak, P. Dudko, O. Kolyada, L. Kalinina, O. Marmaza, O. Makaveeva, V. Ogarenko, N. Tkach, S. Shishov, S. Salyga, L. Sokolov, L. Pshenichnaya, L. Portyanskaya, S. Natroshvili, A. Prokopenko, O. Yarishko and others. The scientific works of the strategic management in education provided an opportunity to reveal the content and characteristics of the strategic development of the university. Domestic scientists such as T. Bogolib, D. Bondarenko, T. Zhizhko, O. Krivoruchko, A. Lyalyuk, I. Osadchy, N. Podolchak, G. Raiko presents methods, technologies and algorithms of the management of the development of higher education institutions in their scientific achievements. The desire to achieve effective management of an educational institution is constantly at the center of attention of scientists, who involved the implementation of the ideas of innovation in the management of educational institutions (V. Dokuchaeva, N. Meshko, M. Poliakov, S. Savchenko, A. Kharkivs'ka, I. Yakukhno). The scientific works of the improvement of management of educational institutions did not consider such an important aspect as modeling of the university's strategic development and its technology in particular.

The aim of the paper is to substantiate the technology of modeling of the university's strategic development.

The process of modeling the university's strategic development is multidimensional and long-term in time, which predetermines the prior identification of specific ways and stages of its implementation. The disclosure of the stages of modeling of the university's strategic development and possible procedures and operations is made possible by the development of the technology of the process. The

technology reveals the essence of management activity, which constitutes the process of constructing a model of strategic development of the university, with the preservation of its logical and semantic structure, which allows obtaining a new information about the state of the university at given moments of time.

O. Klymenyuk notes, a technology in the broad sense is called a set of methods and processes, which are the basis of a certain sphere of human activity and a description of the methods of this activity [1, p.9].

An example of the visibility of strategic development is the achievement of new significant results in university's activities and strengthening the competitive position of the university. The university's strategic development is a long-term process, we guess it is necessary to specify the actions and processes in a certain sequence.

Determination of the set of management tasks, which contributes to the results of the modeling of strategic development, we are composed in several stages: preparatory, analytical, planning, resulting. The first stage is preparatory, which involves the definition and establishment of logical relationships of a higher level of management and functional areas, which will promote effective modeling of the university's strategic development. Thus, the objects and subjects of modeling of strategic development are determined at this stage, i.e. it is determining which university's subdivisions and branches or whole university will be changed in the future. Thus, we need to determine the management level of strategic development. The place of strategy for the hierarchy (corporate, business, functional) depends from the level of management in which the university's strategic development will be implemented. Subjects of modeling of the university's strategic development are appointed according to the level of management. The main functions of the higher level management are the initiations of strategic changes, while the structural unit (department) of strategic development performs directly the procedures and operations of modeling of the university's strategic development. At this stage, the principle of the professional competence of developers of the university's development strategy is updated. The leading aspect of the preparatory stage of

technology is the creation of a strategically oriented university, which provides for the achievement of a sufficient level of management by a university on the basis of strategic management and the formation of organizational behavior of the university team aimed at achieving strategic goals. Thus, the administration of the university develops a clear mechanism for the selection, training and promotion of the subjects of modeling the university's strategic development at the preparatory stage.

The main motive for modeling the university's strategic development is initiating a strategic university's change. Strategic changes can be caused, firstly: implementation of the previous strategy and the need to develop the next, because the modeling of strategic development has a cyclical nature. Strategic changes have a significant effect to the trajectory of the development of a university, they are of a complex nature and vary according to the depth of the expected changes. Implementation of strategic changes is consistent with organizational, resource and competency opportunities of the university and taking into account all factors of the environment (for example, if the university's previous strategy was aimed at narrow segmentation, and then the university changes its strategy for internationalization, etc.).

Secondly, strategic changes can be caused by poor activity results of the university (growing conflict within an educational institution), which can be obtained due to unsuccessful development strategy or in the absence of it. Low university rating, low popularity of the university among consumers, bad reputation of the educational institution – all of these reasons are an urgent impulse for developing a university development strategy or reviewing a previously developed strategy. Failure to take into account the educational needs of the population, such as the training of specialists in unpopular specialties, low quality of educational services, and the unqualified graduates create obstacles for the further functioning of a higher educational institution.

All these "troubles" direct the university's leadership system to make important strategic decisions for a rapid exit from the crisis or gradual improvement in order to improve the university's image. Under these conditions, it is possible to choose, for

example, the leader's imitation strategy, which carefully examines the experience of universities-leaders in the relevant strategic segment, and will allow planning and implementing short and long-term victories.

Thirdly, strategic changes can be conditioned by changing leadership, because as a rule, the new leadership presents new strategic goals, has a vision of the future university and has other strategic management experience, etc.

Fourth: the university will need to make strategic changes if it has a rather high competitive position, if it has high authority in a certain segment of the educational market, but competition universities have new development strategies, introduce more advanced educational technologies, and try to squeeze the university out of its ranking position in the ranking. Under these conditions, the university administration should review the strategy developed in accordance with the information received about the intentions of competitors, in order to eliminate the threat from the competitive educational institutions. Fifth: strategic changes can be caused by recognition of the university's leadership of the gaps between the internal and external environment, that is, the emergence of new trends in education, the introduction of educational reforms, changes in politics, economics, science and technology.

Universities that hold strong high market positions are characterized by exceeding the tempo of change within an institution compared to the tempo of change in the educational services market. Such universities are the initiators of offensive actions, which consist in the championship of the development of new educational technologies, the introduction of new educational products into the market, forming new segments in the industry. A. Parshin argues that the educational services market is characterized by sectoral differences from other sectors of the market, which are manifested in the features of the content, technologies and conditions for the implementation of educational services, professional competencies of teachers and leadership, stakeholder stake of educational services market [2, p.19].

Consequently, the preparatory stage of strategic development modeling technology includes the following sequence of management operations: studying the

main tendencies of the development of higher educational institutions in the educational market (within the country, the world (according to the share of market coverage)); studying the opinion of stakeholders on the current state of the university; definition of objects, subjects and levels of modeling of university's strategic development; formation of a base of initiatives of the management structure and stakeholders of strategic changes; provision of selection, training and appointment of subjects of modeling of the university's strategic development; making a decision on carrying out a strategic analysis of the university. The primary task of the initiator of strategic changes is to identify the areas of university activity that are subject to change, secondary - the conviction of the staff of the university in the need to implement changes and overcome resistance in case of its occurrence.

The second stage of technology of modeling of the strategic development (analytical) is an analysis of the internal and external environment and the formation of strategic information. At this stage of the technology, it is important to analyze the activity of the university in the past, to identify the tempo of achieving strategic goals, the features of university management at all stages of its development in the past, and the identification of positive and negative experiences. In the course of obtaining a general picture of university's activity in the past, it is necessary to draw up a map of the past, which contains a detailed analysis of past development strategies and their correlation with information about the university's rating, information about the competitive position of the university (if any). We agree with J. Bryson that it is often useful for the organization to look forward, look back [3, p.121].

The analysis of the internal and external environment of the university is the next procedure of strategic analysis of the university. As is known, modern universities are open systems, the internal environment of which is formed under the influence of the external environment. Heads of higher education institutions should take into account the influence of the environment on this stage.

According to Z. Galushka and I. Komarnitskiy, the typical characteristics of all elements of the environment appear: interconnectedness of environmental factors;

complexity; flexibility and mobility of the environment; the impossibility of a complete determination of all factors of the environment [4, p.61]. The complexity of the environment is understood the number of factors that the organization is obliged to respond, as well as the level of variability of each factor [4, p. 61–62]. Mobility of the environment is the rate at which changes occur in the environment of the organization. Many researchers pointed out that the environment of modern organizations is changing with increasing speed [4, p. 62].

P. Doyle notes that external changes can be of two kinds: continuous and intermittent. Continuous changes in the medium occur slowly and sufficiently predicted by demographic changes, while continuous changes occur suddenly and accompanied by an unexpected effect [5].

Thus, it is necessary to determine the degree of complexity of the environment and the type of environment in which the university operates at this stage. The PEST analysis and SWOT analysis of the university are carried out in order to understand the university's disadvantages and advantages. The strategic information of the university is formed in accordance with the matrices of the indicated analyzes. So, at first, a SWOT analysis of the university is carried out, which can be applied to any organization and is popular for modern universities. The PEST analysis (or PESTEL analysis) of the university is carried out after obtaining conclusions, which based on the results of the SWOT analysis. In our opinion, PEST analysis provides the basis for the development of long-term goals of the university. If the university's management plans to engage in an active competitive struggle on the international educational market, then consideration of political, economic, social and technological factors is essential. The results of PEST analysis influence the choice, for example, the development strategies by the way of market coverage (narrow segmentation or internationalization), by the direction of action (conservative, aggressive, competitive, defense (defense)), by the nature of behavior in the market (active, passive).

The next procedure is an analysis of the competitive environment of the university. At this stage, it is necessary to compare the strengths and opportunities of

the university with the strengths of other educational institutions in order to identify competitive advantages. The implementation of benchmarking is a fairly common practice of foreign universities. The Benchmarking process of universities contains comparisons of different universities according to specific parameters. Benchmarking results, for example, make it possible to understand the place of the university in a particular strategic segment and provide information for elaboration a strategy in place of competition (leader, leader's imitator, or candidate for leadership, etc.).

The formation of information about the competitive environment of the university aims university's leadership to make decisions about strengthening the competitive advantages of a university or creating such advantages, which do not have universities – rivals. A. Parshin notes: “The influence of competition dictates to universities market strategies, which focused on their priorities, resource capabilities and competitive advantages, determines the attitude to mastering certain segments” [4, p.13].

The analysis of the competitive environment of the university allows us to find out the growth rates of competitive universities; to identify the degree of intensity of competition between higher education institutions; to identify threats of new competitors; to study the peculiarities of the competitive position of the main competitive universities; to identify key success factors that should ensure the competitiveness of the university; to determine the prospects of development of a separate higher educational institution in a certain strategic segment.

An assessment of the internal environment provides an opportunity to identify the main advantages of the university in the educational market. On the sites of domestic universities there is such a discrepancy as the submission of a higher educational institution as an institution with high quality of educational technologies, along with a low rating position, low popularity, etc., indicate an exaggeration of their capabilities and sometimes an inadequate assessment of their defects. Such a situation may lead to incorrect definition of strategic guidelines. J. Bryson emphasizes that stakeholders evaluate the organization by how well it meets their criteria for success [3, p.120].

GAP-analysis of the university is used to identify inconsistencies in university activities in accordance with the development strategy. GAP analysis is mainly used for commercial organizations, but we propose to apply it for universities as socio-economic business units. Through the implementation of the GAP analysis, the university leadership will be able to identify gaps between the expected results of the strategies already approved and the university's available capacity over a period of time, to assess the extent to which significant strategic gaps at a certain stage. Thus, the results of the analysis of strategic discontinuities affect the timely correction of the adopted strategy of development or the use of alternative strategies.

An important stage of the elaboration of the university's development strategy is the analysis of the gaps between the goals and real possibilities, and the definition of their elimination. It is necessary to carry out the following operations for the analysis of strategic discontinuities: to identify the main interests of the university in terms of achieving its long-term goals; to find out the real possibilities of the university at present and after 3–5 years; to determine specific indicators of achievement of strategic goals; to establish the difference between the determined indicators and the real possibilities of universities; to develop ways to overcome discovered gaps. The strategic information that forms the basis for strategic decisions is formed on the basis of the strategic analysis of the university. The main disadvantage of the university's strategic analysis is the gathering of a large amount of information.

Thus, the analytical stage of the technology of modeling the university's strategic development contains the following sequence of administrative operations: evaluation of university activity in the past (past strategies) by parameters, criteria, indicators of the analysis of the university's strategic development; implementation of SWOT-analysis of the university; performing SNW analysis of the university; PEST analysis of the university; implementation of bench marking; analysis of strategic development of competitor universities for the parameters, criteria and indicators proposed by us; implementation of GAP-analysis of the university; ranking of management problems; formation of strategic information.

The third stage of strategic development modeling technology (planning) involves the development of a university development strategy and a strategic plan. Elaboration of the strategy development is the core of modeling the university's strategic development.

Taking into account various aspects of university activity, at the preliminary stage of development of the development strategy it is envisaged: allocation of resources for strategic development of the university; creation of working groups according to each strategic goal; development of a system of assessment and promotion of units and their leaders on the degree of achievement of strategic goals.

P. Doyle notes that the key to the success of the company is the development of such a management strategy, in which the actions and internal organization of the organization optimally correspond to external conditions [5, p. 133]. According to J. Bryson, the strategy is a unit of the mission (or community) that serves as a bridge between the organization itself and its environment [3, p. 162].

We determine the main tasks, which should be solved during the development of the strategy: formation of the future image of the university; formulation of the mission and vision of the university; determination of university strategic goals and criteria for their achievement; determination the expected results.

The elaboration of the University's development strategy is carried out in the following sequence: formulation of the main strategic directions of university development; formulation of the mission, vision, values of the university; formulation of the university's strategic goals; assessment of strategic goals for measurability, specificity, reach, and feasibility; substantiation of the choice of the type of the university development strategy in accordance with the system of classification criteria of the strategy: by directions of activity; by directions of possible development; by the hierarchy of strategy in the organizational structure and in the corresponding management system; by the place in competition; by the direction of action; by the way of achieving competitive advantages; by way the of market coverage; by the form; by the nature of behavior in the market; by the complexity of development; elaboration of development strategies at the level of affiliates, units of

the university; elaboration of alternative strategies; evaluation of alternative strategies.

Strategic plan is elaborated in accordance with the university's development strategy. The procedures for strategic planning have been elaborated in detail in the scientific literature (R. Acoff, J. Bryson, A. Cherep, A. Sychkov, N. Tarnavska, M. Meskon, M. Marmaza). The strategic plan is elaborated in accordance with the chosen development strategy, which contains tasks and ways of achieving strategic goals. Planning occurs as a result of the decomposition of development areas and key strategic objectives, that is, the overall strategic objectives are divided into smaller ones. The University's strategic plan specifies its development strategy. Development of a strategic plan, as a managerial design, requires a detailed study of the resource provision of the university in order to formulate the relevant strategic tasks and calculate the possibility of their implementation. Strategic tasks are formulated in accordance with the stated goals. Strategic development programs are developed in the course of strategic planning. Strategic development programs improve coordination in the implementation of the overall development strategy. The detailing of the strategic program depends on the essence of the strategic goal that the program provides. A strategic program contains a large number of activities that provide underlying and strategic objectives.

E. Utkin notes that the main strategic planning procedures are strategic prognostication, programming and designing [6, p. 21–22]. In our opinion, strategic plans are based on strategic programs and projects at all levels of the university. Consequently, the strategic plan is a technical technique for implementing a general development strategy. According to V. Khachvankyan, the strategic plan should be holistic for a long period of time, as well as flexible, so that if necessary, it could be modified and reoriented [7, p. 184].

The decomposition of the ways to achieve strategic goals is necessary to identify strategic objectives in order to eliminate their duplication. The number of ways depends on the complexity of achieving a strategic goal. Thus, the

decomposition of the main strategic goals, sub-goals and objectives allows to develop criteria for evaluating their achievement.

Foreign scholars in the field of strategic management (J. Bryson, P. Doyle, M. Meskon, M. Albert, F. Hedory, G. Mintzberg) emphasize that strategic planning is carried out from the future to the present. Strategic planning of the university contains the following sequence of management operations: decomposition of strategic goals of university development; development of tasks in accordance with each goal; estimation of forecasts; definition of terms and criteria for assessing achievement of strategic goals.

The planning stage of the technology of modeling of the university's strategic development contains the following management operations: definition of the main strategic directions of university development; revealing interests of stakeholders; formulation of the mission, vision, values of the university; formulation of the university's strategic goals; assessment of strategic goals for measurability, specificity, reach, and feasibility; substantiation of the choice of the type of development strategy; substantiation of the choice of the type of development strategy; elaboration of development strategies at the level of affiliates, units of the university; development of alternative strategies; evaluation of alternative strategies; decomposition of strategic goals of university development; development of tasks in accordance with each goal; estimation of forecasts; definition of terms and criteria for assessing achievement of strategic goals.

The result of the technology of modeling of the university's strategic development is a document that confirms the strategic development of the university and should represent ways of transferring the university to a new quality state.

The resulting stage of the technology of modeling of the university's strategic development contains the following sequence of managerial operations: conclusion of documents, which certifying the university's strategic development; coordination and discussion of the developed documents at all levels of management; promulgation documents, which certifying the university's strategic development.

Summing up the aforementioned, we conclude that the technology of modeling of the university's strategic development is a system of successive operations, through which the initial state of the university is determined and the future of the university is developed. The stages of the technology of modeling of the university strategic development (preparatory, analytical, planning and effective) contain a scheme of real actions, which that to achieve the maximum dynamics of the university's development and minimize risks and deviations from the chosen path of development. This technology allows to make the process of modeling of the university's strategic development structured and orderly.

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Кравченко О.І.

Технологія моделювання стратегічного розвитку університету

У статті подано обґрунтування технології моделювання стратегічного розвитку університету. Запропонована технологія становить сукупність управлінських процедур та операцій, за допомогою здійснення яких уможлиблюється підвищити конкурентоспроможність університету на освітньому ринку. Автор доводить, що технологія моделювання стратегічного розвитку університету дозволяє зробити досліджуваний процес структурованим та впорядкованим. Визначено етапи технології моделювання стратегічного розвитку університету (підготовчий, аналітичний, планувальний та результативний), які вміщують схему реальних дій, що допомагають досягти максимальної динаміки розвитку університету та мінімізувати ризики та відхилення від обраної траєкторії розвитку. Розкрито зміст етапів технології моделювання стратегічного розвитку університету: перший етап (підготовчий) передбачає визначення й налагодження логічних взаємовідносин вищого рівня управління та функціональних сфер, яке сприятиме ефективному моделюванню стратегічного розвитку університету; другий етап (аналітичний) вміщує аналіз внутрішнього та зовнішнього середовища та формування стратегічної інформації; третій етап (планувальний) передбачає розроблення стратегії розвитку, стратегічного плану, стратегічної програми університету; четвертий етап (результативний) вміщує ухвалення й оприлюднення документу, який засвідчує стратегічний розвиток університету й має представляти способи переведення університету на новий якісний стан, тобто стратегію розвитку, стратегічний план, стратегічну програму вищого навчального закладу.

Ключові слова: технологія, моделювання стратегічного розвитку, університет, управлінська діяльність, управлінські операції.

Кравченко Е.И.

Технология моделирования стратегического развития университета

В статье представлено обоснование технологии моделирования стратегического развития университета. Предложенная технология представляет собой совокупность управленческих процедур и операций, посредством осуществления которых становится возможным повысить конкурентоспособность университета на образовательном рынке. Автор доказал, что технология моделирования стратегического развития университета позволяет сделать исследуемый процесс структурированным и упорядоченным. Определены этапы технологии моделирования стратегического развития университета (подготовительный, аналитический, планировочный и результативный), содержащие схему реальных действий, помогающие достичь

максимальной динамики развития университета и минимизировать риски и отклонения от выбранной траектории развития. Раскрыто содержание этапов технологии моделирования стратегического развития университета: первый этап (подготовительный) предполагает определение логических взаимоотношений высшего уровня управления и функциональных сфер, которое будет способствовать эффективному моделированию стратегического развития университета; второй этап (аналитический) содержит анализ внутренней и внешней среды, а также формирование стратегической информации; третий этап (планировочный) содержит разработку стратегии развития, стратегического плана, стратегической программы университета; четвертый этап (результативный) предусматривает принятие и обнародование документа, удостоверяющего стратегическое развитие университета и способы перевода университета в новое качественное состояние, то есть стратегию развития, стратегический план, стратегическую программу высшего учебного заведения.

Ключевые слова: технология, моделирование стратегического развития, университет, управленческая деятельность, управленческие операции.

Information about the author

Kravchenko Olena Ivanivna – Ph.D., Associate Professor of Department of Public Administration and Management of Educational and Social Institutions Luhansk Taras Shevchenko National University. A range of scientific interests – strategic management in education, strategic development of educational institutions, modernization of management of universities.

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