

# MODEL OF STRATEGIC ALIGNMENT IN THE UNIVERSITIES

## МОДЕЛ ЗА ИНТЕГРИРАНЕ НА СТРАТЕГИИТЕ ВЪВ ВИСШИТЕ УЧИЛИЩА

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**Abstract:** *The article presents a model for integrating the organizational strategy of higher schools and their research strategy. It also outlines the stages of developing such research strategies (RS) so that they are consistent with organizational strategies and structures. The model allows higher schools to perform effective organizational design by combining the possible approaches to strategy development in order to achieve integration between them. The article describes the degrees of maturity of processes referring to planning research at universities and defines the stages of developing RS to achieve their consistency with the general organizational strategy of universities on one hand and the other specific strategies, on the other.*

**KEYWORDS:** INTEGRATION, ORGANIZATIONAL STRATEGY, HIGHER SCHOOLS, STRATEGY FOR DEVELOPING SCIENTIFIC RESEARCH

### 1. Introduction

Achieving integration of various strategic documents is an issue, which has become increasingly important for both business and public sector organizations over the recent years. This is due to the growing number of strategies, plans, programmes and projects in a particular sphere. Some of them are not sufficiently integrated while others are incompatible or even contradicting each other. The adherence to such documents does not achieve synergistic effects and leads to wasting organizational resources because it is necessary to correct the mistakes in the management and to neutralize their effects. The integration is even more complicated when some of the planning documents are not written and exist only as not well-formulated intentions for development.

To integrate and clarify the scope and relationships between separate documents is of great importance for the effectiveness and efficiency of the development policy carried out through strategic documents. Not surprisingly, the leading principle to apply in such cases is the holism principle. It consists of two elements, namely the principles of coordination and integration [Alexandrov, K., p.35]. Through integrated planning, we can maximize the effect of the combined use of resources from various sources, adequate distribution over time and inclusion of all directly responsible organizations and interested parties. The integration and coordination of planning documents implies a unified approach and planning methodology at all levels of organizations.

### 2. Prerequisites and approaches for solving the problem

Many authors who work in the sphere of planning have discussed the integration of planning documents. Kaplan and Norton have introduced the Balanced Score card, which involves a system of effectiveness indicators [Kaplan, R. S., D. P. Norton]. Henderson and Venkatraman [Henderson, J.C. and Venkatraman] have studied strategic alignment in their theories of integrating the business in the IT sector. Other authors have conducted similar studies [Bergeron Fr., L. Raymond, S. Rivard, p. 1003-1020; Hubert Saint-Onge, p. 10-13]. B. Borisov [Borisov, B., p. 18-24] has discussed the idea of aligning planning document within the context of the European Cohesion Policy.

The concept of strategy integration is so popular that it has become an important element of the goals of many public and private organizations. In general, we can look for ways to achieve integration in two directions – 1) the contribution of information technologies (as a technological environment for explicit knowledge) and 2) the contribution of employees (who possess tacit knowledge) to the business strategy of the company. At the level of organizations, the need of integrating planning documents is the

greatest when the business environment is dynamic and requires adequate, timely reactions, for example, when there are changes of long – term nature in the markets trends, the current conditions of the sector or the regulatory framework. One of the sectors, which function in a complex and highly- dynamic environment, is higher education. Since higher schools (HS) are global, national and local participants at the same time, they face different challenges and deal with various target groups. To do this, HS should develop separate strategies. This is typical of the universities in many countries, although there are certain differences.

The Universities Worldwide 2015 database shows that as of October 2015 in the world there were 9369 universities in 205 countries [Universities Worldwide 2015]. Many of them follow the western model of organization, i.e. they provide education and do research to benefit society [Jonson, A. M., p. 41-42]. According to research conducted by D. Karužaitė [Karužaitė, Daiva, p. 16-32], the system of higher education in Great Britain has undergone dynamic changes since the beginning of the 20<sup>th</sup> century. From being elitist a century ago, higher education (HE) has become widespread and is offered by a large number of schools and programs nowadays. If it was available only for a small part of the society hundred years ago, nowadays almost half of the UK citizens have a HE diploma.

The same processes can be observed in many other countries as well. Education is becoming more practically oriented and from elitists it is now egalitarian with all the changes in the demand and supply resulting from this. In addition, the policy of developing the knowledge economy broadens further the scope of HE and for certain age groups it is a mass attribute rather than a rare characteristic feature of the population. All this, however, leads to a series of changes – in the assessment methods, public expectations from universities, their funding and management models.

Nowadays state universities are increasingly combining the features of governmental, non – governmental and business organizations. Usually part of their expenses are covered by the government budget. On the other hand, HSs have to compete for a limited amount of public funding for their research programmes similarly to non-governmental organizations. At the same time, the universities, especially the ones in countries with clearly defined trends of population decline, function on a limited and stagnated market with reference to the demand of educational services. This makes them similar to entrepreneurial organizations, which have to be managed by applying corporate management methods. What is more, since these universities develop the knowledge economy, they are obliged to be in close contact not only with the business, which is as a consumer of educational services and research products, but also with the government, which is the central hub in the management of the national innovation systems. With reference to this, universities should commercialize the knowledge they

develop by transforming it into technologies and innovations with the help of their partners. In this way, they become a key factor of economic growth and a main element of the knowledge triangle [OECD, 1996].

Current conditions require that universities have complex goals that can be achieved by combining various strategies. Only in this way they can meet the great public expectations – to contribute to the development of highly skilled human capital; to generate new knowledge and come up with innovations that are transformed into new technologies; to be equal partners in the development of national and local public policies; to stimulate endogenous growth; to be competitive not only and entirely locally but also nationally and even internationally by securing enough funding for the achievement of these goals at the same time.

The present article studies the alignment of different strategic goals within the context of the relationships between the general development strategy of higher schools and one of their specific strategies, i.e. their research strategy. The article does not study the relationships with other specific strategies such as the development of Human Resources or the financial strategy. In order to solve the problem with alignment, we offer a model of integrating strategies and functions on the level of high schools in different in different sections. The combination of these strategies and functions provides opportunities for effective organizational design. The model is provoked by research done by Henderson and Venkatraman [Henderson, J.C. and Venkatraman, N], who study strategic alignment in the IT sector. In particular, they investigate the relationships between the business strategy and the IT strategy of these firms as well as their integration with the organizational structure and IT infrastructure.

In addition to their general strategy, higher schools develop several specific strategies. One of the most important ones refers to the development of scientific research. In order for a high school to be successful, there should be coherence, alignment of the research strategy and the general development strategy. At first glance, the idea is trivial but actually, it is difficult to implement because it requires managerial will and coordinated efforts in several directions.

### 3. Models for integrating strategies and structures at Higher Schools

The model consists of 4 quadrants and each of them has three components. The relationships between the quadrants are particularly important.

ALIGNMENT OF STRATEGIES TO STRUCTURES	STRATEGIES	Development strategy of HS - technological scope - Necessary competences - HS management - structural and functional aspects	Research strategy of HS - technological scope - Necessary competences in the sphere of research - Research management at HS - structural and functional aspects
	STRUCTURES	Organizational infrastructure – Processes – Skills	Research infrastructure – Processes - Skills for doing research
		DEVELOPMENT OF HS	RESEARCH WORK
FUNCTIONAL INTEGRATION			

Figure 1: Model of strategic integration

Adapted after: Henderson, J.C. and Venkatraman, N.: Strategic Alignment: Leveraging Information Technology for Transforming Organizations, IBM Systems Journal, 1999

The first relationship is vertical and represents the interaction between strategy and structure. In the classical version, this relationship is a one – way relationship because structure (administrative or respectively one that is related to scientific research work) is determined by strategy. However, the opposite relationship is also possible. The second relationship refers to functional integration. It is horizontal and directly binds the development of higher schools to their research work activities.

Based on the model, there are several options for “fitting”, which allow for various combinations. The concept on Figure 1 is based on two characteristics. The first one refers to the integration of structures and strategies for developing the high schools in general and their research work activities in particular. The second one is related to functional integration. The integration of strategies is largely predetermined by the influence of factors, which are external to higher schools. The internal factors have a leading role in the integration of structures.

The external factors are connected with the position of the higher school on the market of research products, for example, while the internal factors refer to the methods of configuring and managing the research work infrastructure.

The position of higher schools on the market of research products and services is determined by and comprises three components:

- Technological scope – these are the specific technologies that are developed and/or used by the higher schools and support the initiatives under their general strategies for development. This may include laboratories, certification centres, computing systems, databases, etc. as well as specific educational technologies;
- Competences for doing research which determine not only the quality of the research work outcomes but also the level of costs and the effectiveness and flexibility of organizations;
- Management of instruments for developing research work at high schools. This refers to the selection and implementation of mechanisms, for example strategic alliances, for acquiring particular research work competences.

The external factors, which influence the research strategies of universities, include the research infrastructure as well as the processes and resources in these organizations. For the purposes of the present study, the definition of research infrastructure that we use is the one given in the National Roadmap for Research Infrastructure 2014-2020: „It consists of equipment, resources and the related services, which are used by the research community to do high – level research in the respective spheres and includes large – scale facilities, integrated small research facilities and broadband communication systems such with high transfer capacity; distributed highly productive computer systems such as Grid, computer systems networks, etc.; knowledge based resources such as collections, databases of archives and other types of structured research information; infrastructure competences centres, which provide services to broader research communities, and any other unique item that is fundamental to achieving high – level research results.” [National Roadmap for Research Infrastructure 2014-2020, p.2-3]

Research infrastructure interrelates the three key factors of the “knowledge triangle”. i.e. education, research and innovations. It also has an instrumental role in the integration of the general strategies of universities with their specific strategies.

In their study of the IT sector, Henderson and Venkatraman reach the conclusion that external and internal factors are equally important. Since the significance of these factors in the sphere of higher education has not been studied yet, this problem remains open for further research and discussions. A key prerequisite in the model is the fact that efficient research management requires that all four areas on Figure 1 are well - balanced. Generally, there are two types of relationships in which the strategy for developing HS has

the leading role and two types of relationships in which the research strategy has the leading role.

In the classic version, the development strategy of higher schools defines their organizational structure. It, in turn, determines the decision about the type of research infrastructure that is to be developed. A second option, the development strategy defines the research strategy, which after that determines the research infrastructure of the university. Two more options are possible, when the research strategy is the strategy that has a leading role and its parameters determine the business strategy and organizational infrastructure; and when universities first determine their research strategy, after that, based on it, they define the research infrastructure and finally, their organizational structure.

Each of the presented versions has strengths and weaknesses, which affect the results of its implementation. We will not analyze them in the present article but they will be studied and discussed further.

#### **4. Structured approach to integrating the Research Strategy and the Strategy for Developing HSs**

Defining the research strategy of the university to a great extent is determined by the level of maturity of the planning processes in the organization. Most often, researchers and specialists determine between 5 and 6 core levels of development of planning processes [Ильина, О., Duffy, J., ITGI. CobiT].

**Level 0 (characterized by lack of planning processes with reference to research)** – the organization does not plan the development of research activities. There is lack of understanding concerning the contribution of research to the realization of the organization's general goals.

**Level 1 (ad hoc processes)** – the management of the organization is aware of the need to plan, including strategically, the development research activities. However, there is no a structured planning process. The processes are not documented. Planning, if it exists, is a sporadic activity, which is a response to a particular project and is characterized by high degree of subjectivity and changeability. The results are sporadic and inconsistent. There is lack of sustainability and integration. Since research is not planned by universities, it is determined reactively. Despite the outlined weaknesses, the research initiatives are often successful. They are based on the competences and skills of the involved individuals rather than on the distribution of knowledge in the organization. Such successes are usually accompanied by overuse of resources such as financial resources and time, and are not very likely to be repeated.

**Level 2 (repetitive planning processes carried out by intuition)** – universities are aware of the need and importance of planning, including the strategic planning of research. The processes, however, are not documented. There is lack of rigid process discipline. The strategic intents for research development are shared only with the management team who has the leading role in updating these intents. There are no proactive activities that will identify the environmental factors, including the external ones that can become the basis for updating the strategic intents for doing research. The strategic decisions are based on and taken for particular projects and are not consistent with the development strategy of universities. The benefits, contributions and risks of the realization of particular projects are assessed by the process is rather an intuitive one. The success of the initiatives is due to the experience of the researchers and, to a smaller extent, to the processes of knowledge transfer in the higher educational organization.

**Level 3 (defined planning processes)** – there is a uniform policy, which determines planning, including the strategic planning of research at universities. The planning processes are structured, integrated and documented. The results from planning are extensively communicated and everybody at the different

hierarchical levels of the HS are familiar with them. The planning process involves objectives and initiatives for achieving them and largely this is a guarantee for the realization of the set goals. The processes are not standardized, however. There are no procedures and instructions that will secure the regular and unified flow of planning processes connected to the research strategy of universities. This strategy consists of strategic intents, goals and priorities as well as risks connected with them. The risk appetite of the HS with reference to research is also determined. There is integration between the specific strategies of the HS, which involve not only the research strategy but also the financial, human resources and educational strategies. On the other hand, these strategies are integrated with the general strategy for development of the HS.

**Level 4 (manageable and measurable planning processes)** – the planning of research work activities at HSs is traditional. Standard practices for planning are introduced and the failure to follow them is easily noticed. Various methodologies for qualitative and quantitative measurement and assessment of the processes are implemented. The responsible people as well as the inputs and outputs of the processes and the criteria and relationships between them are defined. Research planning, including strategic planning, is defined as a management function and is determined as the responsibility of the top management universities. The existing planning procedures allow for taking informed decisions concerning the research development at universities and particular projects and the measurement of their effectiveness.

**Level 5 (optimized planning processes)** – research planning at universities is a continuous, documented process, which is assessed as vitally important for the development of their competitiveness. Higher schools have developed a system for collecting information and assessing the adequacy of research work with reference to the external environment and the internal conditions and available resources. The planning processes are subject to continuous reengineering and improvement. The results from research planning, i.e. strategies, plans, projects, etc. are continuously observed, assessed and updated. Research is closely integrated in the development strategy of the higher schools.

#### **5. Results and discussion**

The development of these processes can be successfully managed by applying a **structured approach to the comprehensive integration** of the research strategy to the general development strategy of higher schools. Ten stages can be outlined. Each stage has its specific contents with reference to research and its role in the overall development of higher schools. With reference to content, the stages include:

1. **Identification.** At this stage, the scope of the strategy that has to be integrated is determined. Depending on the chosen option, the approaches and methods for integrating the research strategy are chosen. It is important to assess the strategic framework (vision, mission, goals, priorities and key measurements) for doing research at HS. In addition to integrating the strategies, it is also necessary to integrate the conditions and resources needed for the realization of the set goals. Since we speak about research strategies of universities, we should point out the extreme importance of two factors: 1) human resources, i.e. research workers with their knowledge, skills, interests and attitudes; 2) research infrastructure, i.e. its state and technical and technological capacity and the opportunities they provide. At this stage, the output is the framework for doing research.

2. **Conceptualization.** At this stage, the key advantages of universities with reference to research are defined. These advantages in particular are at the basis of the research strategy since they could help universities to establish themselves on the market of research and educational products. The external factors, critical to the success of the research strategy are outlined at this stage. In the sphere of research, they involve national and international policies, strategies, programmes, plans for doing

research and the existing or emerging research networks and infrastructures. The procedure for measuring the achievement of goals is also prepared at this stage. It consists of particular indicators and target values for them.

3. **Detailed development of planning processes referring to research work.** This stage requires thorough knowledge of the existing planning processes and the approaches and methodologies, associated with them, at HSs. They will be used to develop the prospective strategy, which must be integrated into the general development strategy of the HS and must comply with its existing planning practice. To ensure the detailed development of planning processes by dividing them into sub-processes is related to: identifying the existing processes, current goals and determining the contribution of each process to the HS strategy; determining the parameters for assessing the process with reference to its contribution to the goals, critical issues and weaknesses of the existing processes, set in the research strategy; identifying possibilities for improvement, etc.

4. **Strategic action framework.** It is necessary to do comparative analysis of the goals, set in the general strategy, research strategy, and the other specific strategies of the HS, e.g. human resources, innovations, finances, etc. It is necessary to highlight and develop in details the priorities; to ensure that all strategies are related on one hand and that the research strategy with its goals is related to the process, happening at the Hs, on the other hand. All problem areas, which can be subject to qualitative measurement, are defined. Goals, resulting from existing gaps in the organization, e.g. information, expert, technological, etc. gaps, are set. The goals are adequate to the quantitative assessment of the identified problems and weaknesses.

5. **Defining the requirements.** Efforts are focused on resources, necessary for the realization of the defined strategy and the processes, related to this realization. It is necessary to analyze in details the functional, informational, personal and other organizational aspects of the HS's activity and their compatibility with the research strategy.

6. **Specification.** The research strategy is synchronized with the existing systems and processes, i.e. there is specification and adaptation to the organizational environment, where the strategy will be implemented. Specification very often leads to the development of alternatives of the strategy, which are subject to qualitative and quantitative assessment, including with reference to degree of integration and the subsequent choice of a strategy.

7. **Validation.** The assessment of alternatives is the basis for choosing a research strategy. The chosen strategy must have a high degree of integration with the organizational competences, infrastructure and processes with reference to research work.

8. **Implementation.** The validated strategy has to be integrated into the organizational processes and activities. It has to be included in the responsibilities of the employees who administer its realization. An element of the integration process is to communicate the strategy and ensure that individual researchers and research teams will become involved in its realization. Very often, when there are radical changes in the priorities and approaches to research work activities, it is necessary to prepare rules, instructions, procedures, etc., which provide detailed description of the implementation and realization processes of the research strategy.

9. **Realization.** This stage, universities perform a number of activities, associated with the realization of the planned strategy. This means that they must provide the necessary resources (human resources, material, informational, financial, etc.) and create the prerequisites (processes, instructions, seminars, trainings, information campaigns, administrative support, etc.) necessary for the realization of initiatives, projects, measures that will contribute to the realization of the strategy itself. With reference to the long-

term nature of strategies, it is recommended to outline annually the research strategy in operational programmes..

10. **Monitoring, assessment, upgrading.** The purpose of this stage is to ensure that the research strategy is viable and can be implemented within the specified period. Here we can observe the defined strategic framework of the planning document (vision, mission, goals, priorities), the changes in the external and internal environment and the adequacy of the organizational processes and their accompanying procedures.

## Conclusion

The integration of strategies and structures is always a challenge to managers. At higher education institutions, especially the ones that have been functioning for years, this process is even more difficult to complete because of the management models, which have been established throughout the years, and the organizational structures and systems, which in the majority of the cases are conservative and difficult to change. At the same time, the added value of the integration in all its aspects is enormous. This value can create conditions for improving the competitiveness of higher education institutions so that they become generators of innovations not only from an organizational but also from a social point of view. The added value can also help universities in the realization of their missions in the economy of knowledge.

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