

Strategic Management of Universities for Regional Competitiveness*

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Abstract

Strategic management of universities is crucial for the regional competitiveness due to the high impact of universities on the economic growth of regions through entrepreneurial training and support. The study aimed to investigate the HEInnovate self-assessment tool, valuable in building entrepreneurship-oriented strategy, by considering the case of Turan University. The tool can be used to study entrepreneurial capabilities of the university and make strong management decisions. The self-assessment allows getting feedback from all stakeholders, including external ones, which helps to make institutional changes to influence the regional economic growth. The framework of the research is based on the theories of strategic management and regional competitiveness, which can be deployed with the HEInnovate self-assessment recommendations and findings. The research methodology comprises objective and functional approaches to system analysis. HEInnovate self-assessment by Turan university revealed some weaknesses in the university strategy and helped make some recommendations, namely, the university's entrepreneurial ecosystem must act as part of a regional business support ecosystem to provide input into local economic development, attract more international faculty and faculty with more practical experience, create an entrepreneurial culture across staff of the university, address a lack of internal structures to support staff, and improve university-business cooperation.

Keywords: Strategic Management, Regional Competitiveness, Entrepreneurial University, HEInnovate, Triple Helix

JEL Classification Code: L26, I25, O36, P36, R11

1. Introduction

Nowadays, development of knowledge-intensive economy is very topical since it affects the interests of many

countries, including the regions, enterprises, organizations and their staff. The key goals of the innovation economy are the permanent generation and adoption of innovations, strengthening competition and the acceleration of the socio-economic development. Therefore, recognizing higher education as the main resource for achieving those goals becomes logical and relevant. That is, the training of specialists who are able to effectively manage innovation processes, develop and implement innovative projects puts universities at the center of interaction with the state and business, increasing the competitiveness of regions.

The dynamic development of relations between universities, government and business in order to effectively develop new industries and solve problems in existing ones is the main idea of the "Triple Helix" concept proposed by Henry Etzkowitz (USA) and Loyet Leidesdorf (Netherlands) in the mid-90s. The key role of universities along with the learning function is to optimize knowledge, and this logically explains the predominant position of innovative and entrepreneurial universities as centers that create new technologies and start-ups, and at the same time highly qualified jobs, added value and an increase in regional gross product and welfare.

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The mission of the entrepreneurial university is to contribute to the development of the region by training entrepreneurs, providing them not only with information and advice, but also resource assistance (Schulte 2004). Adjustment to the current challenges should be reflected in the development strategies of organizations. Obviously, more important is in what ways and how successfully the adjusted strategic document will be implemented. That is, the role of strategic management in the implementation of the mission and achieving the goals and objectives is paramount. At this stage of the universities development in Kazakhstan and other post-soviet countries, one of the main problems in modern university management is a focus on achieving the short-term goals and mainly solving internal problems, and weak interaction with consumers of educational services to identify their needs.

Although there are clearly more management issues, it is important to understand that universities are integrating more dynamically into the market, but their management systems are not keeping pace with this process. Moreover, it is necessary to realize that the university is the main nexus in the economy, where the dominant factor of production is knowledge capital, which serves as a source of competitive advantage, and which is complemented by entrepreneurial capital. (Audretsch, 2007). Thus, the strategic management of the university, which sets the main direction for development, plays a key role in the formation of a competitive region. This fact determines the purpose of this study – to analyze universities' strategic decision-making tools to ensure the innovative development of the region.

2. Theoretical Background

2.1. Strategic Management of Universities

The functioning of the university as an open system implies the need for strategic management to facilitate interaction with the external environment and to build a corresponding system of behavior. It also needs the creation of conditions that ensure continuous updating of the educational system itself, and the activities of the university in accordance with changes in the region, country and world. Today, we have a situation where universities are increasingly integrated into the market, and their management systems are not keeping pace with this process. Strategic management at the university should not be ignored, as the university serves to ensure a better future (Fumasoli, 2011). Strategic management is a special kind of management that involves participation, critical analysis, and predictive and institutional policies that seek to increase the potential for change at the university. (Tabatoni & Barblan, 2002). Strategic management, in contrast to other management approaches, is characterized

by a dynamic vision of the university in relation to the environment (Martin, 1992).

Despite the many concepts of strategic management, its main essence is to determine the nature and mechanism of creating the competitive advantages of university. The rapid development of digital technologies creates new opportunities for policy improvements (Kireyeva, Lakhonin & Kalymbekova, 2019). If we are talking about entrepreneurial and innovation-entrepreneurial universities, then they must solve the problems of adaptation and survival in the conditions of innovative and digital development of the economy. The main problem areas of strategic management of university are:

- lack of experience in strategic management in the education system;
- adaptation of university management structure to changing conditions;
- focus on achieving short-term goals and tasks;
- vagueness of managerial procedures;
- focusing mainly on internal problems solutions;
- lack of focus on the analysis of external conditions and opportunities;
- weak interaction with consumers and stakeholders.

And, unfortunately, the emerging universities have those problems as well. Since innovation stimulates economic growth, innovation-producing universities work not only for the labor market, but also for the entire regional economy. Influence can be implemented in at least two directions: should the university be limited only to the training of specialists who then go into the industry and develop technologies and innovate there, or does the university become one of the main agents developing technologies and creating startups for their promotion to the market? At the same time, the cooperation of the university with other participants like business and the government is important for innovative development.

As part of discussions in economic science, the role of the university in regional development since the early 2000s (Acs & Varga, 2002) is still relevant: are innovations developed by universities a key force for regional economic growth, standards of life and international competitiveness of the regions? The answer to this question was the Triple Helix model (Etzkowitz, 2008), which has a number of details that are of big importance for the Kazakhstan experience. According to the model, each of the spirals, i.e., universities, business and the government, take the role of each other in the interaction, while maintaining their main role and identity. Universities are considering the role of the manufacturing industry by stimulating the development of new research-based companies and capitalizing the knowledge as an academic goal. Companies develop training programs in order to transfer knowledge, acting as

universities. The government works as a venture capitalist, while regulating innovation. In addition, in the Triple Helix system, in addition to its components (i.e., universities, business and government), there are connections between them, which can be expressed in cooperation, conflict, leadership, replacement, networking, and functions, i.e., processes of knowledge development, innovation and definitions of consensus space (Khamidullin, 2018). Thus, according to Ranga and Etzkowitz (2002), there is the so-called “regional triple helix”, where the following scheme works: the R&D area is first concentrated in a separate region, then the consent of the main participants (players) - authorities, researchers and business - about direction to move is provided. Only after that, an innovation space is created, an innovation ecosystem is build – incubators, technology transfer offices, research centers, science parks, etc.

What do we observe in reality? The development of strategic plans for universities is caused by the need to solve daily problems that are quite common in the academic environment. The issues of increasing competition in both the domestic and foreign markets of labor and education force universities to step up their activities aimed at achieving success in the short term, the ability to satisfy consumer needs, and improve the quality of educational services (Danciu & Strat, 2012). Thus, the university’s strategic development plan includes educational, scientific

and methodological, research, maintenance, as well as the management of international activities, educational and social activities (Toma, 2010). The generally-accepted algorithm of the strategic plan of universities can be represented in Figure 1.

Some researchers believe that the basis for the development of a strategic plan is an analysis of the prospects for the development of the university under certain assumptions about changes in the external environment in which it operates. The most important element of such an analysis is determining the position of the university in a tough competitive environment. Based on this analysis, the development goals of the university and strategic units are formed and strategies for their achievement are selected (Kulzhanova, 2011).

However, to implement the context for the Triple Helix model, domestic entrepreneurial and research universities today still cannot fully become “drivers” of regional development or even make a direct impact on its dynamics and innovative component. Choosing the aim of creating a university with social value and entrepreneurial training, there is still no full understanding of such important components of strategic management as a thorough study of external and internal factors, the need to take into account the views of stakeholders of students, teachers and employees, top and middle management of the university, parents.

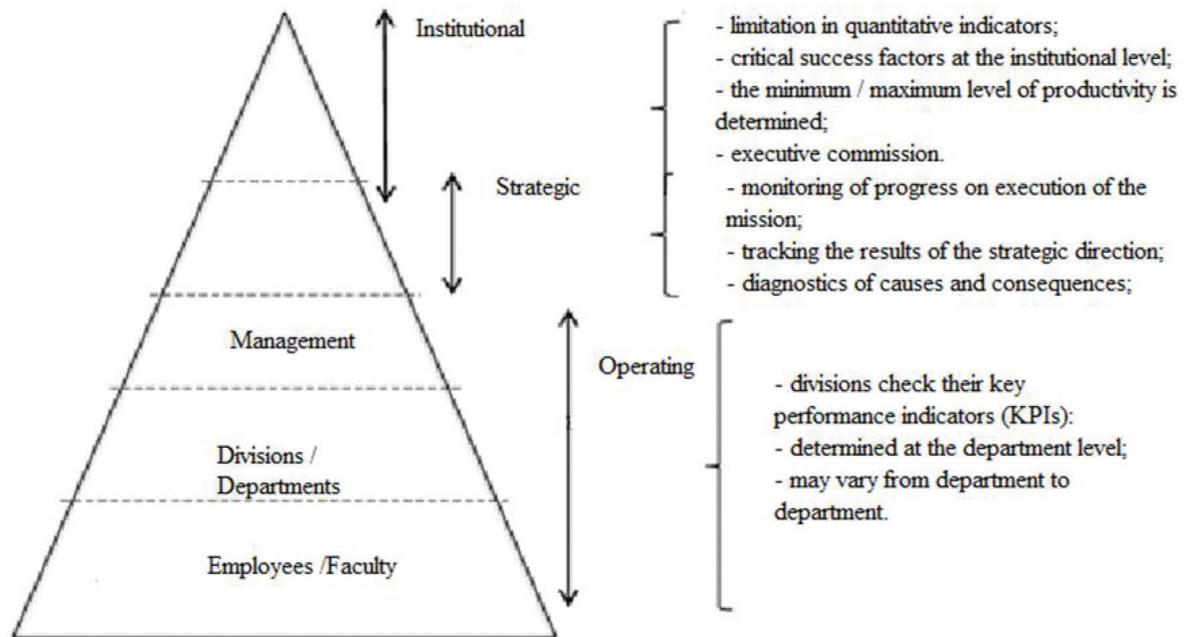


Figure 1: Strategic planning cascade

Here, we address Lorange's (2004) approach based on four drivers of developing a university's strategy:

- the strategy of adapting to changing needs of its target consumer segments;
- the strategy of a leader choosing new development directions before his competitors;
- release of the entrepreneurial potential of employees, activation of individual initiative;
- rational guidance for combining multiple approaches into a single strategy

The university management must be based on community spirit, the autonomy of academic units, as well as on a results-oriented approach leading toward greater efficiency and financial stability (Bileviciute, Draksas, Nevera, & Vainiute, 2019). To develop the ecosystem for the commercialization of university-based technologies, it is proposed to embrace the following aspects in the university strategy: human resources, financing, intellectual property management system, and intermediary infrastructure. (Alibekova, Tleppayev, Medem, & Ruzanov, 2019). Effective improvement of strategic management in universities requires new approaches and methods that can give real meaning to the university's participation in the strategic alliance of regional development stakeholders.

2.2. Regional Competitiveness and Universities

The development of the theory of regional competitiveness primarily requires the study of existing theories and concepts of competitiveness. Issues of competitiveness at the macroeconomic level are indirectly considered in the works of many authors. The first scientific approaches to the study of regional competitiveness are contained in the works of Adam Smith and David Ricardo, who developed the theory of international trade, then in the works of Alfred Marshall. The most detailed study of the theory of formation and development of competitiveness are done by Michael Porter. Porter considers competitiveness in the form of a "national rhombus" model and identifies four stages of competitiveness development, which laid the foundation for regional policy development.

In recent decades, competitiveness has become one of the most widely used terms in the national and regional politics. Despite the professionals' and the scientific community's growing interest, a unanimous definition of competitiveness has not been established in either the scientific or professional literature. This is mainly because of the strong heterogeneity of its measuring, as well as other factors (Gavurova, Vagasova, & Kovac, 2016). It is not possible to increase the competitiveness of an economy at the macroeconomic level without the participation of the business sphere. Only firms can create new forms of competitive advantages; governments can create a business

environment for the development of companies (Soltes & Gavurova, 2015). The productivity of a country's economy is determined by the productivity of enterprises operating in it; the competitive economy can only be created by businesses being able to compete (Dudda et al., 2017). At the corporate level, significant factors for increasing competitiveness are as follows: increasing labor productivity by applying modern management and marketing methods, applying the latest science and technology achievements in manufacturing and service delivery, the ability to implement innovation in a proper timeframe, and better work organization (Hilkevics & Hilkevica, 2017).

The regional competitiveness is largely determined by limited resources. The most developed regions attract and concentrate investments, labor, technology, etc. As a result, business activity is increasing there, a new level of infrastructure is being formed, new firms are being attracted, territorial clusters are emerging and dynamically developing. All these helps strengthen regional competitiveness positions.

The universities can influence the regional economy in various ways, including: 1) creation of new knowledge and infrastructure; 2) development of human capital; 3) know-how and technology transfer; 4) technological innovation; 5) investment in capital goods and growth of local demand; 6) regional leadership; and 7) impact on the regional environment (Khamidullin, 2018). Various studies document the positive influence of universities on economic development of regions. Valero and Van Reenen (2018) analyzed about 15,000 universities in 1,500 regions in 78 countries showing that a double increase in the number of universities per capita in the country leads to an increase in GDP per capita by 4%. The regional perspective of assessing the competitiveness of universities is important, since the placement of educational services is related to the placement of the population, and consumer requests in these markets reflect regional specifics. In the context of public administration, there is a need for unified universal criteria for evaluating universities. However, for regional universities, it is impossible to assess the competitive positions without taking into account the needs of the local community and the conditions of socio-economic development of the regions (Zakharova, 2019).

The role of higher education becomes even more unique in the society with the increasing demand for highly qualified and socially responsible people in the labor market (Ungerma et al., 2018). Higher education institutions and their scientific research and innovation help create new jobs and ensure economic growth and prosperity, thus these institutions are vital partners in implementing regional strategy focused on promoting and maintaining economic growth (Bileviciute et al., 2019). The problem is that it is still unclear whether innovations developed by universities are a key force for regional economic growth, living standards and

international competitiveness of regions, or not. One of the most famous attempts to answer this question was the Triple Helix model developed by Henry Etzkowitz. The concept is based on the idea that investment in university research and infrastructure enhances competitiveness and contributes to the development of the region, as in recent years the economy has moved on to the path of knowledge, and universities have become the main element of the regional innovation system. Thus, the innovative development of the region is becoming one of the most important tasks for modern universities.

Studies of the role of universities in the region have been carried out by many scientists. One of the significant contributions in this area is the work of L. Tornatzky, who developed a model reflecting the role of the university in the regional economy. The influence of universities on the economic development of the territory through technology transfer, knowledge generation and educational services can be due to interaction of universities with businesses and public authorities (Kamenskikh, 2014). It requires a restructuring of the university and forming an entrepreneurial university. The university takes on the new functions: the institution, which is responsible for the development of human capital, becomes a generator of economic activity. In addition, a new role for the university is social, or “service to society” and interaction with the regional environment. As a result, changes are taking place both in the university itself and in its interaction with enterprises and the local government. The general direction of the university development is common in many countries: evolution towards a research institution, and then to an entrepreneurial one. Five independent variables affecting the entrepreneurial intention of students, are found: entrepreneurial educational environment, personal characteristics, perception of feasibility, entrepreneurial supports, and financial accessibility. (Vuong, Phuong, Huan, & Quan, 2020) The attitudes toward entrepreneurship and entrepreneurial intention of young people in Indonesia are determined by several variables such as the need for achievement, risk perception, and locus of control. (Wardana et al., 2020)

3. Research Methodology and Data

Management decision-making support tools include methods for analyzing the internal and external environment, which allow setting adequate goals for strategic management and determining the need for the development of the organization – carrying out organizational changes to overcome emerging problems and crises, as well as implement new opportunities. In particular, such tools as GAP-analysis, PEST-analysis, SNW-analysis, SWOT-analysis, ADL matrix, BCG matrix, D. Abel matrix, “Five

forces of competition” model by M. Porter, I. Ansoff model and others are distinguished. However, the tools described above are universal and cannot set specific directions for entrepreneurial universities.

Within the framework of the LEED (Local Economy and Employment Development Program) program of the Organization for Economic Cooperation and Development (OECD) with the assistance of the German Federal Ministry for Transport, Construction and Urban Development, a specialized digital tool for assessing the entrepreneurial capacity of University – HEInnovate – is developed.

HEInnovate allows to be sensitive to the current and future needs of society, humanity and nature. The tool is based on six criteria: strategy, financial and human resources, supporting infrastructure, entrepreneurship training, support for startups, and measurement.

This tool enables universities to conduct self-assessment based on these six criteria by identifying, prioritizing and planning action in eight key areas: leadership and governance; organizational capacity (financing, people, and incentives); entrepreneurship education and training; entrepreneurship support; digital transformation (introduced in 2018); knowledge sharing and collaboration; internationalization; and impact measurement.¹

Leadership and governance. Strong leadership and good governance are crucial for developing an entrepreneurial and innovative culture at the university. This section highlights some important factors that a university may consider in order to strengthen its entrepreneurial strategy.

Organizational capacity. If a university intends to carry out entrepreneurial activity to support its strategic goals, then key resources, such as financing and investment, people, experience and knowledge, and incentive systems are needed to maintain and develop its capacity for entrepreneurial activity.

Learning and teaching entrepreneurship. Entrepreneurship teaching and training involves the use of innovative teaching methods and the search for ways to stimulate entrepreneurial thinking. This is not just a study of entrepreneurial activity, it is also familiarization with entrepreneurial experience and the acquisition of skills and competencies for the development of entrepreneurial thinking. Studies confirm the impact of entrepreneurial learning on entrepreneurial intentions: graduates of entrepreneurial education show a higher intention to start a business (Cera, Mlouk, Cera, & Shumeli, 2020).

Support for entrepreneurship. Universities can offer and help students, graduates and employees consider their own business as an alternative to hired work. First of all, it is important to help people think about commercial, social, environmental, or life goals related to their entrepreneurial aspirations and intentions. For those who decide to start a

business, targeted assistance can be offered in developing, evaluating and implementing ideas, developing the skills necessary for successful entrepreneurship, and, importantly, in finding appropriate team members and gaining access to funding and networks. Offering such support, the university should ideally act as part of a wider ecosystem of business support, and not work in isolation.

Digital transformation. Universities should maximize the opportunities provided by digitalization and consider digital technologies as a key factor in supporting innovation and entrepreneurship.

Knowledge sharing and collaboration. Knowledge sharing is an important catalyst for organizational innovation, the development of teaching and research, as well as regional development. This is an ongoing process, which includes the “third mission” of the university, defined as the stimulation and direct application and use of knowledge for the benefit of the social, cultural and economic development of society.

Internationalization implies the integration of international or world experience in the development of education, research and knowledge-sharing programs. Internationalization provides an opportunity for alternative ways of thinking, challenges traditional teaching methods, and makes leadership and management accessible to external stakeholders. A university cannot be entrepreneurial without being international.

Impact measurement. Entrepreneurial and innovative higher education institutions must understand the impact of the changes they are making to their educational institutions. The concept of an entrepreneurial or innovative university combines institutional self-perception, external reflection and an evidence-based approach. Nevertheless, measuring the effect of changes in universities remains underdeveloped. Current measurements, as a rule, focus on the quantity of by-products, the volume and quality of the creation of intellectual property and income from scientific research, and not on the entrepreneurship of graduates, impact of teaching and learning, retention of talents, and contribution to local economic development.

Turan University has engaged significantly with the HEInnovate self-assessment tool, collecting an impressive 119 returns across four stakeholders’ groups in January 2017. The university is looking to build on and accelerate its progress in entrepreneurial education, and is seeking to take a leadership position in developing the agenda regionally and nationally in Kazakhstan.

4. Results and Discussion

4.1. HEInnovate as a Management Support Tool of Universities

Based on those criteria, HEInnovate has been created that allows higher education institutions to

independently evaluate their strategy and practice in the field of entrepreneurship promotion. Henry (2015) suggests HEInnovate as an easily accessible and widely used self-assessment tool in higher education. His article, based on existing concepts for evaluating entrepreneurial education, in particular, *Six Steps to Heaven* (Storey 2017), discusses how to achieve a more reliable use of the HEInnovate self-assessment tool. Hannon (2013) concludes that HEInnovate helps to understand the characteristics of entrepreneurial universities, the achievement of which will contribute to the development of such universities. Currently, more than 50 universities in the world use this tool to self-assess their entrepreneurial potential.

Belgium

Ghent University was interested in developing a number of initiatives to develop entrepreneurship and innovation. In 2016/17, it started to develop an institutional strategy for entrepreneurship and innovation and create the necessary “blocks” for their integration in the institutional structure. The HEInnovate self-assessment tool was used to bring together stakeholders and as a basis for developing a strategy.

Throughout the HEInnovate self-assessment evaluation, project managers have paid considerable attention to building a community with the help of the tool. They gathered students, researchers, and government officials who promoted innovation and entrepreneurship and used a self-assessment tool to stimulate reflection on best practices, strengths and weaknesses, and growth opportunities. In the future, this community was formally established by creating a “community of ambassadors”, which will regularly meet, share information and provide feedback to the development of the strategy. HEInnovate was also used to organize stakeholder discussions in key areas.

The leaders of the exercises at Ghent University realized that there is a close connection between the results of the analysis of strengths, weaknesses and opportunities and the thoughts arising from the HEInnovate self-evaluation project. One of the key success factors in this consultative process has been to attract ‘critical’ or ‘disinterested’ colleagues to strengthen prioritization. Subsequently, project managers used HEInnovate to support the process beyond the analytical phase to identify key points for the institution’s entrepreneurial strategy. These points are participants, tools, results and institutional processes. To ensure the success of the strategy, a comprehensive map of all possible tools at the university was compiled. The project leaders identified two key groups of people: ‘process facilitators’ and ‘decision-makers’ at the university and other relevant stakeholders or representative bodies (for example, the innovation council)²

Finland

Vaasa University was involved in the HEInnovate self-assessment in 2018, after organizational restructuring and reorientation. During this restructuring, the university launched three large-scale multidisciplinary research platforms. One of them, the Laboratory for Innovation and Entrepreneurship (InnoLab), develops an extensive program of activities and uses HEInnovate to inform about future strategic directions of development.

The main goal of the HEInnovate project at InnoLab was to explore ways to strengthen approaches to curriculum development using the university's strong regional connections with business and the municipality. One of the main advantages of the HEInnovate tool was that it made it possible to bring together a wide range of stakeholders and involve them in the future development of InnoLab programs. This helped identify areas of good practice, both within the university and its partners, and specific plans for scaling them up. During the HEInnovate seminar, several initiatives were developed, including approaches to solving real business problems for university students.

Lithuania

At Kaunas University of Technology, the HEInnovate tool was used during a period of institutional change and a growing commitment to entrepreneurship and interdisciplinary research. Interaction with business within the framework of HEInnovate provided an excellent opportunity to discuss the direction of the university and how this direction meets the expectations of the business. It was important for the university that the HEInnovate seminar was attended by representatives of the entire community, including students, teachers, administrative staff, and university management. Most of the participants (85%) were unfamiliar with HEInnovate before the seminar, which, nevertheless, served as a catalyst to stimulate the community to participate more actively in the formation of the entrepreneurial environment at the university.

Some of the academic participants emphasized the similarity between the directions of HEInnovate and Kaunas University of Technology in striving to move forward developing entrepreneurship and interdisciplinary approaches at all levels of the university and promoting mutual dialogue between universities and business. Particular attention was paid to interaction with stakeholders within the framework of HEInnovate as the main advantage for the university and those who are responsible for the development of educational programs.

The university is undergoing institutional changes aimed at strengthening the institute's position, both locally and internationally (in the Baltic region, Central and Eastern Europe). The university has already implemented tools for monitoring the process of changing curricula, including an internal examination system that evaluates the quality of

education. After the HEInnovate workshop, participants had a clear idea of how HEInnovate can improve these tools and what new methods can be applied to improve the quality of education. This experience demonstrates how HEInnovate can act as an intermediary to stimulate entrepreneurship in higher education (through discourse and best practices); however, the institution remains responsible for identifying areas for change and taking action in accordance with them. Given that the institution is focused on strengthening its position as an entrepreneurial university by encouraging interdisciplinary research, this feedback becomes a necessary resource to quickly respond to changes and proposals from the university community. 70% of the participants at the HEInnovate seminar said that the seminar inspired them to take action to introduce changes at the university (almost half of the participants showed particularly high enthusiasm).

4.2. HEInnovate Self-evaluation Project in Kazakhstan

Turan University is the first higher education institution in Central Asia that used HEInnovate for self-assessment. The university was founded in 1994. It is one of the first and largest private universities in Kazakhstan and positions itself as an entrepreneurial and world-wide competitive university that generates and successfully implements innovations and provides high-quality education. It positions itself as a natural incubator, supporting faculty members and students in the creation and implementation of new knowledge. The university has a business incubator to provide the best conditions for creating an entrepreneurial spirit. According to the national Independent Agency for Accreditation and Rating, over the past five years, Turan University has been recognized as one of the five best universities in social disciplines in Kazakhstan. In 2018, the university took 6th place in the TOP-20 universities of Kazakhstan.

The Turan University implemented the HEInnovate self-assessment to find gaps in promoting entrepreneurial strategy. As a result, all seven dimensions got an average score of 3.85 out of 5. It means the university excels in all directions, but there is room for further improvement. Differences in grades for different roles are different: administration staff grades lower than other groups (Table 1). The normal situation for most universities is when administration evaluates dimensions more generously than other groups. The opposite picture in Turan may be due to less visibility of activities to the administrative leaders of the university.

It is necessary to pay attention to the assessment of external stakeholders. The lowest ratings are given for supporting entrepreneurship and measuring impact dimensions. It means that they doubt the university has strong impact on the regional development.

Table 1: Self-assessment results, by dimension and stakeholder group

Role	Leadership and Governance	Organizational Capacity	Entrepreneurial Teaching and Learning	Preparing and Supporting Entrepreneurs	Knowledge Exchange and Collaboration	The Internationalized Institution	Measuring Impact
Administrative leader	2.8	2.6	2.7	2.9	2.8	2.6	2.3
Dean / Head of School / Faculty	4.5	4.5	4.0	4.3	4.7	4.3	4.1
External stakeholder	4.0	4.1	4.2	3.9	4.4	4.1	3.1
Professor / Teacher	4.4	4.3	4.2	4.1	4.4	4.1	4.1
Rector / Vice chancellor	4.0	3.8	3.4	3.6	3.5	3.4	3.6
Student (Undergrad.-PhD)	4.1	4.1	4.1	4.0	4.1	4.1	4.1
<i>Dimension average</i>	3.9	3.8	3.8	3.8	3.9	3.8	3.8

Table 2: Areas of higher agreement in self-assessment results

Dimension	Statements with high agreement
Leadership and governance	The HEI encourages and supports faculties and units to act entrepreneurially
Organisational capacity	The HEI has the capacity and culture to build new relationships and synergies across the institution
Entrepreneurial Teaching and Learning	The HEI provides diverse formal learning opportunities to develop entrepreneurial mindsets and skills
Preparing and Supporting Entrepreneurs	The HEI increases awareness of the value of entrepreneurship and stimulates the entrepreneurial intentions of students, graduates and staff to start-up a business or venture
	The HEI supports its students, graduates and staff to move from idea generation to business creation
Knowledge Exchange and Collaboration	The HEI demonstrates active involvement in partnerships and relationships with a wide range of stakeholders
The Internationalized Institution	Internationalization is an integral part of the HEI's entrepreneurial agenda.
Measuring Impact	The HEI regularly assesses knowledge exchange and collaboration.

Examining how individual statements were scored reinforces the overall positivity of respondents to the exercise. A significant proportion of scores under each statement were at the higher end of the scale (4 or 5). However, some of these demonstrate a higher degree of agreement between respondents than others. These are summarized in Table 2 and provide useful insights into which strengths the university can usefully build upon.

Those statements for which scoring was more evenly spread, i.e., where respondents agreed less on the status of the statement, are summarized in Table 3. These statements represent potential areas for improvement.

As the conclusion of the self-assessment, six common areas were identified as priorities for action:

1. The significant public profile and broad engagement in civic responsibilities of the head of the university was identified as a significant strength of the university.

Table 3: Areas of lower agreement in self-assessment results

Dimension	Statements with low agreement
Leadership and governance	There is a model in place for coordinating and integrating entrepreneurial activities across the HEI
Organisational capacity	Entrepreneurial objectives are supported by a wide range of sustainable funding and investment sources
	The HEI invests in staff development to support its entrepreneurial agenda
Entrepreneurial Teaching and Learning	The HEI validates entrepreneurial learning outcomes which drives the design and execution of the entrepreneurial curriculum
	The HEI co-designs and delivers the curriculum with external stakeholders
Preparing and Supporting Entrepreneurs	The HEI facilitates access to financing for its entrepreneurs
Knowledge Exchange and Collaboration	The HEI integrates research, education and industry (wider community) activities to exploit new knowledge
The Internationalised Institution	International perspectives are reflected in the HEI's approach to teaching
Measuring Impact	No significant areas of disagreement

2. The university has a good number of teachers that can teach entrepreneurship, but there is a need for more teachers to be in post that can design and deliver materials based on their own experience. There was also a desire to attract more international teachers.
3. While entrepreneurialism and innovation are of significant importance to the university, it was agreed that more should be done to ensure that an entrepreneurial culture is present across all teaching staff of the university.
4. There should be work conducted to address a lack of internal structures to support staff.
5. Participants identified a need to shift the mindset and readiness of the university's students to better understand entrepreneurialism, and ensure that they are better placed to receive and absorb the curriculum and materials.
6. There was a strong belief that university-business cooperation can be improved. There are already many active links within the university, but consideration is needed on the openness of business to collaboration, and the ways in which more investment can be realized in this area. There was also a need identified to consider the employability of graduates, and their flow in and out of industry.

Based on these priorities, relevant changes were included in the university strategy. First, a block of changes was introduced to the internal rules for the hiring and training of teaching and administrative staff to support the entrepreneurial mission. Second, many entrepreneurial courses are integrated into all academic programs. Those are 'Introduction to Entrepreneurship', 'Legal Regulation of Entrepreneurship', 'Business Analysis', 'Financial Support for Entrepreneurship', 'Marketing Tools in

Entrepreneurship', etc. All the courses were developed taking into account the latest technologies and approaches to the educational process. The course 'Introduction to Entrepreneurship' includes topics on design thinking. The university faculty members took advanced training on 'Fundamentals of Entrepreneurship', winter schools are held annually to teach entrepreneurial courses. However, the university still has to develop 'entrepreneurial spirit' among students of all specialties, since this requires time and financial investments in student startups. In the case of the successful implementation of such startups, which over time will become a stable regional business, the university will make a worthy contribution to the innovative development of the region and increase its competitiveness along with the competitiveness of the region.

5. Conclusion

The strategic management as a method of university management is a new area of research in the changing environment due to the transition from an industrial to an innovation economy. A literature review in the field of strategic management of entrepreneurial universities shows that the main problem is their transformation in accordance with the Triple Helix model when universities, business and government are actively interacting. This kind of strategic alliance involves cooperation with stakeholders of the university and generation of ideas for strategies aimed at developing and using resources for the specific features of a region.

The innovation and entrepreneurial mission of universities should be focused on the social and economic

development of the region. To implement the entrepreneurial mission, universities are engaged in the formation of the entrepreneurial environment and entrepreneurial competencies of students. When making strategic decisions for the development of the university, it is necessary to consider the entrepreneurial climate as an indicator. As a tool for studying the entrepreneurial capacity of the university, a self-assessment methodology developed under the auspices of the OECD, the specialized tool HEInnovate is widely used, which allows evaluating the strategy and practice of entrepreneurship promotion.

HEInnovate self-assessment tool allows timely update of the university's strategy on the implementation of an entrepreneurial mission in a regional aspect. An important factor in the effectiveness of this toolkit is the wide coverage of university stakeholders who are interested in the innovation development of the region.

The practice of self-assessment of universities shows that HEInnovate assisted in the following areas:

- creation of an interdisciplinary research platform for solving business problems using the regional ties of the university with business and the municipality (University of Vaasa, Finland);

- the institutional changes that show the impact of the university at the regional level (Kaunas University of Technology, the Baltic region, Central and Eastern Europe);

- identify strengths and weaknesses in the entrepreneurial ecosystem of the university, identify priority areas for the development of entrepreneurial activity (Turan University, Kazakhstan).

Turan University revealed that the university is less focused on contribution to local economic development, thus, the university's entrepreneurial ecosystem must act as part of the regional business support ecosystem. This is due to the fact that the strategic management of the university is more oriented toward enrolling more students and increasing profitability. However, regular use of HEInnovate allows monitoring the development of the university and determining its priorities.

The results of these studies are of scientific and practical interest to solve problems in the field of strategic management of entrepreneurial universities as subjects of development of regional competitiveness.

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Endnotes

¹ https://heinnovate.eu/sites/default/files/heinnovate_eight_dimensions_0.pdf

² <https://heinnovate.eu/en/resource/heinnovate-ghent-university-belgium>