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METHODICAL TOOLKIT OF BUSINESS POTENTIAL EVALUATION OF AUTONOMOUS HIGHER EDUCATION INSTITUTION

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Abstract

The article proves that to increase the competitiveness of the autonomous HEI (Higher Education Institution), it is necessary to fundamentally change the conditions of their activity: to switch to the business model of development, which allows the continuous reforming of production, management, and technological solutions. The study's subject was the economic relations arising during the monitoring and evaluation of the autonomous HEI business potential. The scientific works of domestic and foreign scientists, the data of statistical reports and the results of the autonomous HEI business model testing became the theoretical and methodological basis of the work.

The results of the calculations show that the actual value of the business potential integrated index is less than the planned value, i.e. there is a provision to increase this index, and therefore there are prospects for the growth of the business potential of the autonomous HEI. The recommendation presented in the article may be used to ensure the competitiveness of the HEIs in the long term and to improve their business potential.

Keywords: Business undertakings, autonomous HEI business potential, development strategy, competitiveness, business development model, innovative activities

1. Introduction

Due to the state universities transition to the autonomy, the activity conditions for each of such institutions are fundamentally changing. The HEI image, its ability to prepare successful specialists in the

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labor market play an important role, and therefore there is the problem of the HEI competitiveness increasing.

The more efficient and competitive a HEI is, the greater its contribution to GDP and, therefore, the country's national wealth. As a result, the government will mainly support such higher education institutions in particular.

The higher education institutions play a primary role in the system of vocational education. They become a part of the innovation system, a certain bridge between science and industry, performing important functions of the intellectual centers, forming a human capital, and accumulating and realizing breakthrough research and development.

The terms and conditions of the competitive environment in the field of vocational education determine the transition of HEI to the business model of development, which implies a constant search and exploration of the new opportunities to improve their activities in the area of knowledge generation, their educational transfer and practical application.

The variety of the approaches used to reveal the essence of the business potential of the higher education institution and, accordingly, to the allocation of the different components of the said potential leads to the need to develop the methodological tools of its evaluation.

The following scientists were engaged in the economic models building in a highly competitive environment using the game theory and the probability theory: Borch (2015); Marinacci (2015); Abdellaoui *et al.*, (2011); Gilboa, (2010); Li *et al.* (2014) and others.

The following works are devoted to the issues of innovative activity development as one of the factors of the competitiveness of the socio-economic systems improving: Stroeva *et al.* (2015); Yurieva *et al.* (2012); Wu *et al.* (2008); Zdrazil *et al.* (2016); Zieba *et al.* (2014); Rodriguez (2014) and others.

The approaches to the entrepreneurship study are presented in the works of Kirtzner (2001), Night (2003), Maksimov (2004), Mizes (2005), Shumpeter (2007), Konstantinov (2007), and others.

The review of the scientific papers allowed one to generalize the experience, to identify the key factors in evaluating the business potential of the autonomous HEI and to note that for the present moment, there is an insufficiency in the research of the questions of enhancing business activity in the autonomous HEIs, the evaluation of this activity, and the development of methodological approaches to the strategies of the entrepreneurial potential improving of the autonomous HEI.

All the above-mentioned determine the urgency of the research topic.

2. Research objectives and scope

The objective of the research is the development of the theoretical provisions and the methodological tools to evaluate the business potential of the HEI, aimed at the effectiveness of its work enhancing.

Within the limits of this objective, the need to solve the following set of problems that reflect the logic and the concept of the study has been identified:

– to reveal the theoretical aspects of HEI entrepreneurship in the new economy conditions;

– to develop an algorithm for the evaluation of the business potential of the higher education institution;

– to propose the recommendations to improve the efficiency of the HEI business potential.

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The work is interesting to the federal and regional authorities, as well as to the heads of higher educational institutions. While substantiating the provisions and recommendations, we took into account the requirements of the laws and regulations in the field of the Economic Development of the Russian Federation, subjects of the Russian Federation, ministries, and departments.

The practical significance has the developed algorithm of the HEI business potential evaluation in order to improve the efficiency of the higher education institution work. The conclusions and recommendations set out in the study contribute to ensuring the competitiveness of the autonomous HEIs.

3. Methods

Multilevel and multidimensional nature of the HEI business potential involves the formation of an index system to measure this potential, reflecting the specificity of the business activity in the field of knowledge generation, the results of their transfer to the educational activity and introduction into production.

To evaluate the business potential, it is offered to use the process approach in the work of the autonomous HEIs. The following conditions must be met:

– the satisfaction of the requirements and constraints on the part of the interested parties;

– the continuous monitoring of compliance of the autonomous HEI business processes to the goals facing them;

– the analysis of the ability of the processes to generate the desired result, including the quality of the educational services.

Using a process approach to the management of the autonomous HEI activity, it is necessary to identify the key business processes, to define the inputs and outputs, the process owners, to establish the requirements for the processes, and to establish the interaction of these processes. The aim of the HEIs management on the basis of the process approach is the maximum satisfaction of the requirements of the internal and external customers with the most effective way.

In this regard, the authors developed the algorithm of the HEI business potential evaluation including the following steps (Figure 1).

Step 1: The gathering of the information about the HEI activity.

Step 2: The analysis and processing of the gathered information.

Step 3: The distribution of the business potential indexes by the types of activity (Table 1) (Dolzhenkova, 2011).

The use of this technique results from the multidimensional nature of the HEI business potential, involving the formation of the system indexes to measure it, which show the specifics of the business activity in the field of knowledge generation, its transfer and introduction into production. In addition, the indexes should reflect the results of the activity of the small enterprises and other business structures created on the basis of the HEI.

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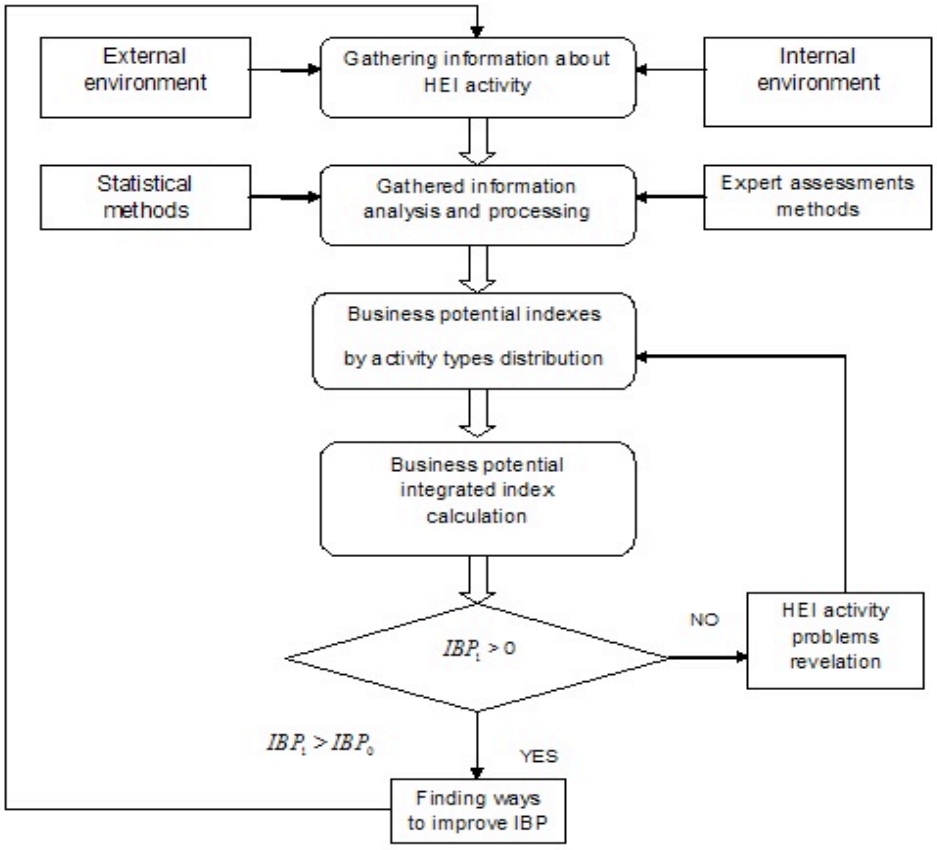

Fig. 1. HEI business potential evaluation algorithm

Step 4: the calculation of the business potential integrated index. The result of the evaluation of this step will be the identification of the problems in the work of the HEI or finding the ways to enhance the business potential integrated index. The authors suggest that the business potential integrated index can be defined by formula 1.

$$IBP = \left(\sum_{i,j=1}^{4,N_{red}} \frac{K_i \cdot N_j}{N_{red}} \right) \div 4 \cdot \sum_{i=1}^{4} Fr_i \cdot CSC' \qquad (1)$$

where IBP is the business potential integrated index, rubles; i is the HEI activity type; j is the number of students, enrolled into HEI, people; K_i is the specific ratio of the points amount, received in the result of the business potential indexes distribution by the activity types in the general structure, %; N_j is the number of students, involved into a particular activity type, people; N_{red} is the reduced students contingent, people; Fr_i is the financial result for every activity type of the higher education institute, rubles; CSC is the customers satisfaction coefficient.

If the resulting business potential integrated index in the reporting period (IBP_1) is less than zero, i.e. the condition $IBP_1 > 0$ is not satisfied, then it is necessary to find out the problems in the work of the HEI. If the resulting business potential integrated index in the reporting period (IBP_1) is more than zero (i.e. the condition $IBP_1 > 0$ is satisfied) and $IBP_1 > IBP_0$ (i.e. the business potential integrated index in the reporting period is higher than in the base period), then it is necessary to find the ways to increase the said index.

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Table 1. Matrix of HEI business potential indexes.

HEI types of activity	Indexes and the business components characterized by them		
	Activity	Efficiency	Effectiveness
Research & development (knowledge generation)	Business activity in the HEI scientific activity	Financial result of research & development activity	The degree of the strategy goals achievements at the research & development services market
Educational activity (knowledge transfer)	Business activity in the HEI educational activity	Financial result of educational activity	The degree of the strategy goals achievements at the vocational education services market and labor market
Innovation activity (knowledge introduction into production)	Knowledge commercialization activity	Financial result of knowledge introduction into production	The degree of the strategy goals achievements at the innovations market
Business activity	HEI business structures activity	Financial result of HEI business structures activity	The degree of the strategy goals achievements at the branch goods markets and financial tools markets

Of particular urgency, according to the authors, is the evaluation of the autonomous HEI business potential, as the autonomous educational institutions get the greater freedom of the activity directions choice, which allows the diversification of the financial sources under the market conditions, an increase of the revenues and optimization of costs, but, on the other hand, it can result in the need for the effective financial management (Mokronosov, 2012).

4. Analysis results

The authors have attempted to evaluate the business potential of Ural Federal University (UrFU). To calculate the index according to formula (1), it is necessary to define a number of indexes, including the specific ratio of the amount of points obtained as a result of the business potential indexes distribution by the activity types in the general structure (K_i). Table 2 presents the indexes used to evaluate the activity of the UrFU teaching staff (on the basis of the Regulation "On the stimulation of the work of the teaching staff", adopted by the decision of the Academic Council of the UrFU), and distributed by four types of the HEI activities.

Table 2. Indexes used to evaluate the activity of the PPS UrFU.

Index name	Points amount, point	Index share, %
Educatioanl activity		
Issuing of the Textbook with stamp MON, UMO, NMS	100	3,29
Issuing of the manual with stamp UMO, NMS	40	1,32
Issuing of the manual, recommended by the editorial committee	30	0,99
Development and realization of the new program of the supplementary vocational education	60	1,97
Participation in the editorial boards of the foreign magazines, included into the Scopus database	100	3,29
To the head, whose students received the awards for participation in the international sports competitions	15	0,49
To the head, whose students received the awards for participation in the all Russia sports competitions	10	0,33

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To the head, whose students received the awards for participation in the regional sports competitions	5	0,16
The performing duties as a chairman of the dissertation councils	25	0,82
The performing duties as a scientific secretary of the dissertation councils	25	0,82
The performing duties as a member of the dissertation councils	15	0,49
Totally for the educational activity	**425**	**13,98**
Research & Development Activity		
To the scientific adviser for the training a PhD (from among the post-graduate students or the university employees at their main job)	100	3,29
Issuing the monograph or a reference book in the leading scientific journals	60	1,97
Teacher's publication in the journals included into HAC list	30	0,99
Joint teacher's and student's publication in the journals included into HAC list	40	1,32
Published abstracts of the international conferences	20	0,66
Published abstracts of the Russian conferences	10	0,33
Organization of the international conferences, symposia and exhibitions as a member of the organizing committee, provided that the UrFU is shown among the organizers	35	1,15
Organization of the Russian conferences, symposia and exhibitions as a member of the organizing committee, provided that the UrFU is shown among the organizers	25	0,82
Organization of the regional conferences, symposia and exhibitions as a member of the organizing committee, provided that the UrFU is shown among the organizers	15	0,49
Totally for the Research & Development activity	**335**	**11,02**
Innovation activity		
The application to Rospatent for an invention, utility model, a computer program developed by a teacher	20	0,66
The application to Rospatent for an invention, utility model, a computer program developed by a teacher together with a student	30	0,99
To the head of the students or post-graduate students of the UrFU, who received the awards for the scientific suites and innovation developments in the international competitions.	40	1,32
To the head of the students or post-graduate students of the UrFU, who received the awards for the scientific suites and innovation developments in the Russian competitions	20	0,66
To the head of the students or post-graduate students of the UrFU, who received the awards for the scientific suites and innovation developments in the regional competitions	10	0,33
Participating in the financed international scientific and educational projects, contracted with the UrFU for the sum up to 200 K roubles	80	2,63
Participating in the financed international scientific and educational projects, contracted with the UrFU for the sum from 200 K roubles to 1 mln roubles	200	6,58
Participating in the financed international scientific and educational projects, contracted with the UrFU for the sum from 1 mln roubles to 5 mln roubles	300	9,87
Participating in the financed international scientific and educational projects, contracted with the UrFU for the sum more than 5 mln roubles	500	16,45
Totally for the Innovation activity	**1200**	**39,47**
Other income-generating activities		
To the managers of the contractual R&D, consulting and engineering services, program projects, and grants realized via UrFU for the sum up to 200 K roubles	80	2,63

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To the managers of the contractual R&D, consulting and engineering services, program projects, and grants realized via UrFU for the sum from 200 K roubles to 1 mln roubles	200	6,58
To the managers of the contractual R&D, consulting and engineering services, program projects, and grants realized via UrFU for the sum from 1 mln roubles to 5 mln roubles	300	9,87
To the managers of the contractual R&D, consulting and engineering services, program projects, and grants realized via UrFU for the sum more than 5 mln roubles	500	16,45
Totally for another income-generating activity	**1080**	**35,53**
Totally for all activity types	**3040**	**100 %**

It turns out that the largest share among the indexes used for the evaluation of the UrFU teaching staff belongs to the indexes related to the innovation activities - 39.47 %; the lowest share (11.02 %) belongs the indexes related to the research and development activity. The values of the "integrated business potential UrFU" index elements are presented in Table 3.

At that, N_1 is the number of students involved in the educational activities; N_2 is the number of students involved in the research and development activities; N_3 is the number of students involved in the innovation activities; N_4 is the number of students involved in other income-generating activity.

In 2014, the actual values of such indexes as "number of students involed into a particular activity type," "reduced students contingent", "the total financial result of all HEI activities" are higher than the planned ones, and the value of such index as a "consumers satisfaction coefficient" is less than the planned one. A similar situation was also observed in 2015.

Table 3. The data used to calculate the UrFU business potential integrated index.

Index		2014		2015		Deviation of 2015 to 2014 (actual values)	
Designation	Unit	Plan	Actual	Plan	Actual	Absolute	Relative, %
N_1	People	36356	36497	45572	45734	9237	25,31
N_2	People	1948	2167	2396	2422	255	11,77
N_3	People	95	110	130	198	88	80,00
N_4	People	96	115	130	180	65	56,52
N_{red}	People	29121	29751	26057	27493	-2258	-7,59
$\sum Fr_i$	Roubles	384695430	387421854	411690335	415540957	28119103	7,26
CSC	%	100	92,7	100	93,4	0,7	0,76

The values of the UrFU business potential integrated index in 2014 and 2015 were calculated according to formula (1) and presented in Table 4.

Table 4. UrFU business potential integrated index.

Index		2014		2015		Deviation of 2015 to 2014 (actual values)	
Designation	Unit	Plan	Actual	Plan	Actual	Absolute	Relative, %
IBP	Roubles	17 730 930	16 373 099	26 592 731	24 007 942	7 634 843	46,63

Thus, the actual value of the UrFU business potential integrated index in 2014 and in 2015 is less than the planned one, and the deviation of the *IBP* index in 2015 regarding 2014 (actual value) amounted to 46.63%. It proves the growth of the autonomous HEI business potential as well as the existing of the

reserve for the growth of this indicator. The results of the practical application of the algorithm of the HEI business potential evaluation prove the expediency of its use as an effective tool to enhance the competitiveness of an autonomous higher education institution.

5. Conclusions

The results of the calculations made according to the author's algorithm indicate that the actual value of the business potential integrated indicator is less than the planned one, i.e., there are some reserves to increase this figure, and, therefore, there are the prospects for the autonomous HEI business potential growth.

This algorithm allows the optimization of the higher education institution activity and providing for its strategic development.

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