

Problems and Solutions for Creating a Favourable Innovation Environment in the Republic of Moldova

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Abstract

The main objectives of the research were to reveal the significance of innovative activity for Moldova's universities as a task with major implications for state development and to identify the factors that create obstacles to establishing a favorable climate for innovation activities. In order to achieve those objectives, some examples of innovative work experience of the European and US universities were brought; there were presented quantitative data expressing the contribution of university research to economic growth and employment. There were, also, presented and analyzed the results of two surveys: with State Agrarian University of Moldova (SAUM) students and with business representatives. Based on survey results and analysis of other activities performed by SAUM, in order to cooperate with business environment, there were formulated conclusions concerning the current state and possible directions of improving the innovation climate.

Keywords: business environment ,competitiveness , innovative activity, research

At present, the management system of each higher education institution must meet new requirements imposed by the external environment factors. Among these we can particularly emphasize the need to provide the required number of specialists for the labour market, with the necessary level of training, but also able to contribute to the economic and social prosperity of entities and, finally, of the branches where they will activate. In other words, if previously the quality of higher vocational education was assessed through a system of indicators that estimated the finished product (trained specialists) until the moment they received their diplomas, now we have to recognize that this evaluation system should be extended. Thus, the quality of the activities developed by an institution of higher professional education should be assessed according to their impact on the exogenous economic environment and, consequently,

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on the social one.

Therefore, the connection „education – research” is no longer enough relevant for business environment requirements and the element „innovation” appears to be a new device of the mechanism that will optimize the performance of each vocational education institution. This fact is confirmed in EENEE Analytical Report No.18 prepared for the European Commission: „While teaching and research are the first and second stream of activities of universities, a third stream of activities is the contribution of universities to society by transferring their know-how. This third stream of activities builds upon the first and second, but it is increasingly being seen as important and distinctive in its own right, deserving of specific policies and resources to ensure their effective functioning.” [7]

The role of universities in the economic growth and prosperity of the state is already well known and appreciated in developed countries. In UK, for example, in 2011-2012 the Higher Education (HE) Sector Generated £73billion, in which Alliance Universities have an impact of £10billion. Universities generate £86.6million in IP revenue. £376million have been generated from graduate start-ups, Alliance Universities generated 44% of this. [5]

All these data represent an undeniable proof of the fact that universities are able to develop a prosperous and innovative activity and to bring a significant contribution to the prosperity of the state. Simultaneously, we noticed that the results obtained by the UK are mainly due to the existence of effective mechanisms aimed at supporting the innovative partnerships.

Another relevant example concerning the contribution of universities to the economic growth refers to the results presented by BiGGAR Economics (a leading independent economic consultancy) which was asked by the League of European Research Universities (LERU) to assess the economic contribution of its 21 member universities across Europe. The economic contribution was measured in terms of Gross Value Added (GVA) to the economy and by the number of jobs supported by the organization. The study estimates that in 2014 knowledge transfer, enterprise and innovation activity: technology licensing, consultancy, contract and collaborative research, spin-outs and start-ups, research and science parks, workforce training and staff volunteering, made a combined contribution of €21.9 billion in GVA and 298,489 jobs across Europe. [3]

Innovation activity experience carried out by the educational institutions from Europe and US is characterized by scrupulous and multilateral approach to each aspect. The experience of the University of Pittsburgh deserves special attention particularly in the organization of courses of business and innovation, and also concerning the way this institution motivates the participants in innovation activities through various reward methods for outstanding results. [6]

The innovation activity of most higher education institutions from the Republic of Moldova, including the State Agrarian University, is at the initial stage. But that

doesn't mean that there is a total absence of it. Certainly, each higher education institution has many innovative achievements, they hold numerous patents and acts of implementing innovations, they publish every year a large number of monographs etc. However, the economic efficiency of innovative activity carried out in such a manner is particularly low because the practical implementation level of its results is insufficient.

Another major problem concerns the insufficient involvement of students in the innovation activity.

Based on the abovementioned facts, it is clear that the innovation activity should be organized at a qualitatively new level, its ultimate objective being the materialization of its results in real performance of enterprises. In order to achieve this objective, it is necessary to implement a whole system of actions, and namely:

- 1) a more active cooperation of the educational institutions with business representatives achieving an efficient feedback due to which, among other problems, there will be established their needs in innovative products;
- 2) establishing a system of sustainable relationships with enterprises, developing joint programs of innovation activities in which, besides organizational, legal and financial aspects, they could include final quantitative indicators, such as reducing the unit cost of a product or service, increasing the efficiency of machinery, increasing enterprise revenue from sales etc. as a result of implementing concrete innovations;
- 3) expressing the finalities of innovation activity performed by students in indicators of success and their further reflection Bachelor's and Master's theses, thus ensuring the necessary motivation for being involved in innovation activities.

A first step towards practical achievement of the above mentioned actions consists in establishing a climate of active cooperation with the business environment, initiating discussions on this topic and identifying the aspirations of each party. In this context we should note that although the education institutions show the interest and willingness to cooperate with business environment, business representatives show a reduced responsiveness. In order to confirm this conclusion, we'll make reference to an opinion poll made in May 2015, which included a series of questions focused on three main aspects: practical training, students' scientific activity and their relationship with business environment. 129 students from various specialties have been involved in the survey. The processed results of the survey revealed the following major findings:

- although most respondents appreciate the quality of practical training as "good", they also submitted a number of proposals, such as: the need to find more efficient enterprises for their internships; conducting more practical hours on the field; continuous monitoring of internships by teachers and specialists etc.;
- most students (60%) believe that their proposals could help to improve enterprise activity;

- their involvement in the scientific activity is quite high, but it is done through their participation in the meetings of student scientific circles, and only 4% had participated in investigations carried out in laboratories, and 2,5% - in experimental researches on the agricultural land;
- the majority of students consider that the university should be actively involved in developing innovations for business, the students also playing an important role in this process;
- practically all surveyed students consider the meetings with business representatives very useful and believe that the cooperation with the business environment will help them in their future work activity.

Regarding the goal to establish and improve the cooperation with the business environment, we will underline other important activity carried out within State Agrarian University of Moldova in the last two years: there have been elaborated and proposed special questionnaires to employers in order to study their opinion on the following issues: the overall level of graduates' preparedness (differentiating theoretical and practical training); the quality of curricula; availability of the enterprise to serve as practical basis for students' internships; availability of managers and professionals to participate in meetings with university students and teaching staff. Also, they submitted proposals to improve curricula contents.

As a result of analyzing the offered answers, the following positive findings could be stated:

- most employers assess students' knowledge as rather high;
- over 70% of surveyed employers expressed their agreement to meet with students every two years in order to share their experience.

At the same time, we can also mention the following negative aspects:

- 40% of employers involved in the survey refused to provide conditions for students' practical training;
- the proposals to improve the curricula are superficial.

Besides the above mentioned problems, we can also enumerate other difficulties related to the cooperation with employers:

- employers could hardly accept to complete such surveys, most of them saying that completing the survey is not their responsibility. Thus, for example, the Faculty of Veterinary Medicine received only 35 completed surveys out of 55 sent; the Faculty of Accounting received only 20 completed surveys out of 50 sent (after countless telephone conversations);
- even if they find it easier to complete our surveys, most employers refuse to participate in discussions with university representatives, because of a lack of time.

Based on the comparative examination of the results obtained from the two surveys, we highlighted once again the various levels of willingness of the interested parties to cooperate.

Further, we'll present the analysis of the most relevant activities performed by the State Agrarian University as a partner of FKTBUM project in order to establish a climate of cooperation with the business environment based on the envisaged expectations and encountered weaknesses (table 1).

Table 1. Analysis of the most relevant activities performed by State Agrarian University of Moldova in the period 2005-2015 in order to establish a cooperation climate with business environment

The content of activity	Envisaged objectives	Weaknesses
The inclusion of business representatives in external evaluation commissions of the quality of education for each specialty	<ul style="list-style-type: none"> • The involvement of outstanding specialists from various fields in the process of curricula improvement; • Proposing solutions for improving the quality of the educational process; • Establishing the aspirations of business environment regarding necessary skills of the future specialists etc. 	<ul style="list-style-type: none"> • Lack of interest in studying the specific features and peculiarities of the educational system; • Passivity in proposing ideas and solutions.
The inclusion of business representatives in the commissions evaluating the results of internships	Assessment of practical skills obtained by students through the prism of production activity requirements.	-
The inclusion of business representatives in the commissions for the assessment of graduation exams and defence of master's theses	<ul style="list-style-type: none"> • More objective and multilateral evaluation of the quality of knowledge and practical skills; • Ensuring a closer correlation between the knowledge and practical skills of graduates and requirements of practical activities. 	Superficial knowledge of certain disciplines included in the curricula of specialties.
Conclusion of contracts with various enterprises and organizations in order to ensure the necessary conditions for internships	Creating appropriate conditions for practical training of students	Unwillingness (refusal) of many managers to provide the necessary conditions for internships

Organizing meetings between the SAUM management and the representatives of the business environment areas	<ul style="list-style-type: none"> • Studying the opinions of the actual and potential employers regarding the following aspects: <ol style="list-style-type: none"> a) Improvement of the educational plans; b) Present assessment and directions to improve the quality of future specialist training; • Initiating a dialogue regarding joint execution of innovation activities. 	<ul style="list-style-type: none"> • Refusal of one of invited parties to attend the meeting for various reasons; • Reduced availability to initiate joint innovation activities.
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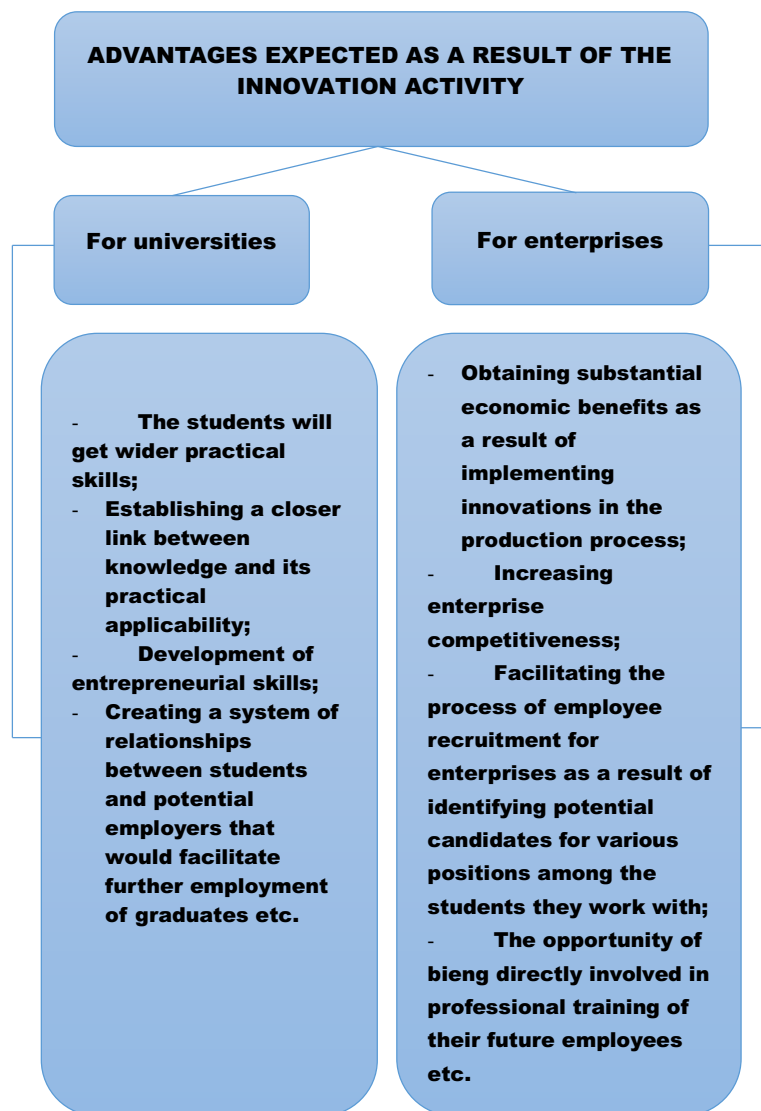
The data presented in Table 1 show that there were not identified weaknesses only in the section regarding the inclusion of business representatives in the commissions evaluating the results of internships. At the same time, it is obvious that the business environment representatives from the Republic of Moldova don't possess the necessary way of thinking in order to feel responsibility for what happens in the educational system. Consequently, even if they are aware of the existing shortcomings in increasing the quality of specialist training in universities, it is considered that the task of improving vocational education lies completely on universities.

Making innovation activities through cooperation with business environment would have multiple effects ensuring advantages both for the university and the enterprises (Figure 1). Among them we could particularly highlight the development of students' entrepreneurial skills, which represents a crucial requirement of the epoch. Certainly, the introduction of the discipline „Fundamentals of Entrepreneurship” in the educational plans, continuous improvement of practical training, paying more attention to practical and research chapters of bachelor's and master's theses etc.- measures implemented by SAUM lately - allow to solve only partially the problem of insufficient entrepreneurial skills held by students at graduation. The innovation activity carried out in partnership with enterprises would create additional opportunities for their development.

At the same time, among the benefits expected by enterprises, special attention deserves the opportunity to enhance their competitiveness. In this context we refer to the provisions of the Roadmap for improving the competitiveness of the Republic of Moldova approved by Government Decision No. 4 of January 14, 2014, according to which the innovative activity is considered as a key factor of enterprise competitiveness. Thus „... in order to compete effectively, the enterprises from Moldova must meet or exceed the innovative capacity of other companies on the global market. In the Republic of Moldova increased competitiveness can be ensured by increasing the productivity based on adapting the existing modern technologies,

development and implementation of innovations, improvement of personal technologies or substantial improvement of the situation in other areas where, despite the achievement of a certain innovation level of development, it is not enough to generate increased productivity. At the company's level, in order to maintain their competitiveness, medium and large enterprises should further develop new generation products and should orient themselves towards activities with high added value” [4].

Figure 1. Advantages of cooperation between universities and business environment in the field of innovation activities



Certainly, the effects presented in Figure 1 concern a relatively short period of time, while the long term effects will be found in the increased figures of the meso and macroeconomic indicators.

Unfortunately, we remarked that the lack of interest of business representatives to cooperate with universities in the field of innovation activities is in its turn caused by deficiencies existing in the innovation environment of the enterprise itself. In other words, most Moldovan enterprises don't make any efforts to boost environmental innovation, considering it as being unimportant. Another part agrees that innovation activity is important for the prosperity of the enterprise, but they don't implement the necessary methods in order to stimulate it. Nevertheless innovation requires a favourable atmosphere in order to be developed. According to Dana Baldwin (a consultant of the Center for Simplified Strategic Planning, President of Oliver Machinery Company, USA) „Innovation is definitely a cultural characteristic and must be encouraged and nurtured inside a company. It does not come by simply flipping a switch. One must set an environment that encourages people to think in unusual and creative ways.” [2]

Among the key components of the enterprises' innovation climate Baldwin mentions communication, challenge and sources of ideas. Referring to communication, the author points out that „... the better everyone in the company understands the goals and objectives of the company, the better this process of innovation should be. Internal communication, based on openness and with trust developed over years, is a key to setting this atmosphere” [2]

Challenging people to propose innovative ideas is no less important and it requires great mastery of managers. Thus, they should intrigue and fascinate the working team so that its members feel not only responsibility, but even the desire to explore new horizons.

Finding new sources of ideas is also a particularly important element. In this context we can refer to the experience of implementing the method Kaizen, that was first deployed on an industrial scale by car manufacturer Toyota in the 1950s, as part of the now famous Toyota Production System (TPS). So, Eiji Toyoda wanted more from his workforce than just blind obedience and hard work. At Toyota employees were valued and trusted – so much so that the firm expected their shop-floor workers (ordinary workers) to fix problems associated with quality and come up with ideas to improve efficiency. According to the Kaizen Institute, founded by Masaaki Imai to implement the philosophy, the aim of any kaizen plan should be to persuade all workers that they have hired for two jobs: doing their job, and then looking for ways to do it more efficiently. [1]

Consumers also are an important source of innovation. According to Baldwin “...knowledge of customers' preferences is absolutely critical. Very few companies can innovate effectively without comprehensive knowledge of their customers' needs and

preferences.” [2] In this context we'd like to emphasize the concept of open innovation based on the idea that “...firms should be less private with their product-development programs, reflecting the view that the firm's customers can sometimes make a valuable contribution to the product-development process. The belief that firms can, and should learn from their customers is growing. One example is the rise of crowdsourcing – a practice where firms get ideas, or even finance for a new product (crowdfunding) from the public.”[1]

Conclusions

Based on the above mentioned facts we can draw the following conclusions:

- At present, the innovation activity represents an important task of each university, due to which they naturally bring their contribution to social and economic growth of the country;
- One of the major impediments to the innovative activity development in the Republic of Moldova consists in the insufficient level of cooperation with business environment. This, in its turn, is determined, on the one hand, by the lack of interest of business representatives in joint innovation activities, and on the other hand, by the insufficiently developed innovation climate in enterprises;
- Creating a favourable innovation climate in enterprises and increasing the interest of business representatives in the innovation activity represent two processes requiring time and changes in the mentality of local managers. However, the state could intervene through certain incentives, such as: tax cuts in cases when a part of the company's revenues is invested in innovations; stimulating part-time employment of students by enterprises under a contract involving the innovation activity; financial support of universities in order to create innovation parks etc.

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