

Problems with Application of the Triple Helix in the Czech Republic

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Abstract: The paper is dedicated to the problems with application of the triple helix model in the form of projects co-financed from the EU sources in the conditions of the Czech Republic. The paper aims to identify alternative forms of partnerships of enterprises, universities and governments in the form of projects co-financed from the EU sources in the Czech Republic and analyze and assess the risks and problems related to this type of a triple helix partnership. In the introduction, the authors define the term of triple helix and explain the essence of the alternative forms of cooperation within the triple helix model, which expresses a partnership of enterprises, universities and governments. Subsequently, they characterize one of the potential forms of a triple helix, dominant in the Czech Republic, which are partnership projects supported by the European Union. Special attention is then focussed on the analysis and assessment of the risks and problems related to this form of cooperation.

Key-Words: partnership, triple helix model, enterprises, universities, governments, financial support of partnerships, EU projects.

1 Introduction

The economic and social growth and development of all economic entities is nowadays strongly dependent on their knowledge. Various forms of partnerships can be significantly contributive to creation, transfer and transformation of such knowledge. The basic forms of partnerships aiming for sharing the partners' knowledge are characterized by the so-called triple helix model, created by H. Etzkowitz [3, 4, 17, 26]. This model expresses different forms of partnerships of the three key economic entities: an enterprise, a university and a government.

The level of application of potential partnership forms within the triple helix model in individual countries is different. What is especially problematic is cooperation on the highest level of the model, i.e. in the case of trilateral cooperation on the level enterprise – university – government. The main problem is unwillingness of entities with a strong position to share information and thus share the key to success [27]. Particular forms of such trilateral cooperation can include scientific parks (centres), technological parks (centres), innovative centres (nets) and clusters. A form that is supplementary to the above forms, but also an independent form of trilateral cooperation, can be the support coming from individual types of

national and supranational public budgets to finance common activities of enterprises and universities.

Partnerships of enterprises, universities and governments are connected with indisputable advantages [12, 18, 21, 23], which is why they are attractive for all the member states of the European Union. They are implemented in the form of specific projects co-financed from the EU sources, usually together with a financial contribution from the national sources. However, the fact is that project funding as a form of the triple helix model is also connected with certain risks and problems.

The paper aims to identify alternative forms of partnerships of enterprises, universities and governments in the form of projects co-financed from the EU sources in the Czech Republic and analyze and assess the risks and problems related to this type of a triple helix partnership.

The authors of the paper used the following research methods: interpretative-theoretical research, descriptive research, correlation research and structured interviews.

2 Triple Helix Model

The triple helix model expresses cooperation of enterprises (of various sizes, areas of business, legal forms), universities (both public and private

university institutions) and governments (and their institutions on supranational, national, regional and local levels).

According to the National Institute for Triple Helix Innovation [15], “triple helix innovation is a process by which academia, government, and industry collaborate (i.e., engage in a process of mutually beneficial leveraging of resources) to create or discover new knowledge, technology, or products and services that are transmitted to intended final users in fulfilment of a social need”. Jerome & Jordan [13] state that the triple helix model of collaboration is a “new patterns of collaboration among industry consortia, university linkages and government agencies, with an emphasis on commercialization”. Etzkowitz [4] notes that “the triple helix is a spiral model of innovation that captures multiple reciprocal relationships at different points in the process of knowledge capitalization”.

According to Etzkowitz [4], there are three levels of the triple helix model. The first level of the triple helix model refers to cooperation within individual vertices of the model, i.e. mutual cooperation between enterprises, cooperation between universities, and cooperation between individual government levels. See Figure 1.

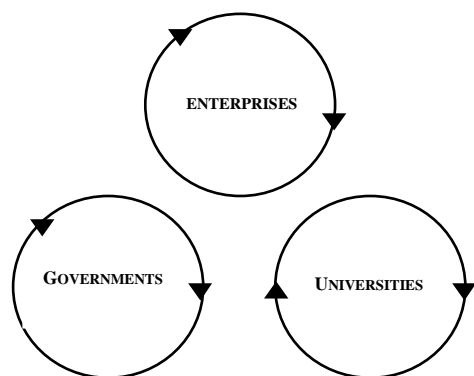


Figure 1 - Triple Helix Model – Level 1

Source: Own.

At the same time, partnerships between enterprises can have differently close forms of cooperation from mergers and acquisitions (see more e.g. [9], [14], [19], [25]), through joint ventures (see more e.g. [1], [10], [20]), to strategic alliances that are not based on joint ownership (see more e.g. [24], [28]). Partnerships between universities can take place both on the educational level (common study programs, exchange of tutors, second reading of bachelor, diploma and dissertation theses, common publishing of textbooks), and in the scientific and

research area (project participation, common organization of conferences and seminars, common publications, mutual utilization of a scientific and research background).

Partnerships between individual government levels are affected by distribution of the political power in the given country and by the applied model of fiscal federalism. The essence of such partnerships resides in common participation in provision of public goods and services and also in mutual coordination of financial flows in individual public budgets.

The second level of the triple helix model refers to bilateral cooperation between individual model vertices, i.e. cooperation between enterprises and universities, between universities and governments, and between enterprises and governments. See Figure 2.

As regards partnerships on the enterprise – university level, cooperation can take place both in the educational area (e.g. introduction of lifelong learning programs, active or passive attendance at corporate trainings, cooperation in preparation of study programs and subjects, cooperation in drawing up diploma theses, cooperation in arrangement of internships and short term attachments for students and university staff, participation in organization of contact days for students) and in the scientific and research area (e.g. mutual participation in projects, drawing up expert’s opinions and surveys, professional consultations), but also in other areas (e.g. lease of the university campus, lease of the university facilities, participation of external entities in the conferences organized by the university) [22].

As regards partnerships on the university – government level, the central government in the form of the ministry of education is not only the regulatory and supervisory body in the area of education, but also, from the point of view of public universities, an important source of financial means, and last but not least it represents the government grant agencies. This means that government is, from the point of view of universities, their key partner.

As for partnerships on the enterprise – government level, governments ensure for one thing legislative and institutional support of entrepreneurial activities (in the form of ministries, government agencies, councils, etc.), and for another financial support of entrepreneurs (in the form of grants, subventions, or project funding). An important form of cooperation in this area is implementation of public private partnership projects.

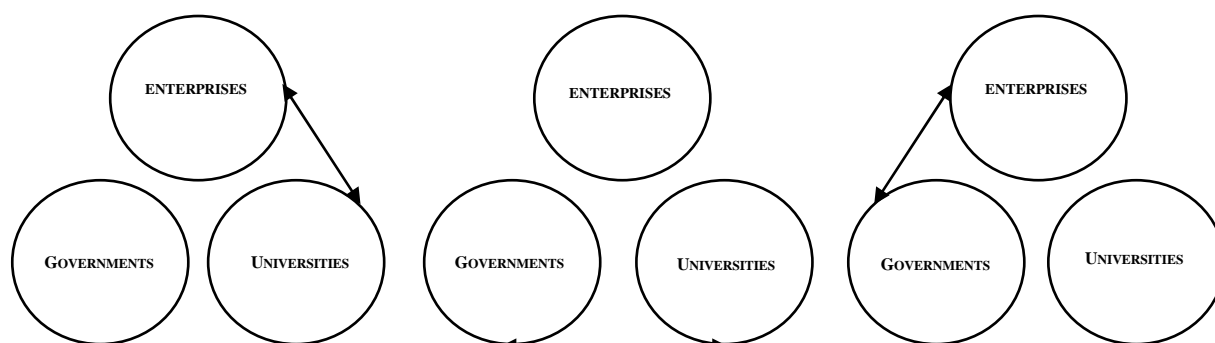


Figure 2 - Triple Helix Model – Level 2

Source: Own.

The third and highest level of the triple helix model refers to trilateral cooperation among individual vertices of the model, i.e. mutual cooperation among enterprises, universities and governments. See Figure 3. As it has been mentioned, this cooperation takes place in the form of scientific parks (centres), technological parks (centres), innovative centres (nets) (see more e.g. [8], [11], [29]), clusters (see more e.g. [2], [16]) and financial support of partnerships.

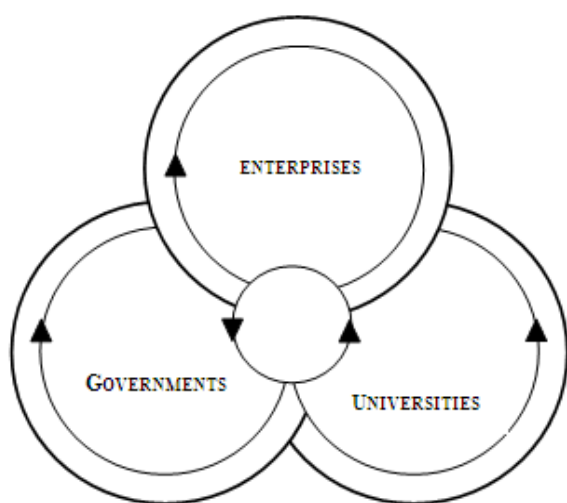


Figure 3 - Triple Helix Model – Level 3

Source: Modified according to [3, 22].

3 Triple Helix Model in the Form of Projects Co-Financed from the EU Sources in the Czech Republic

3.1 Current Project Opportunities

If we pay our attention to application of the triple helix model in the form of projects co-financed from the EU sources, we can state that in the Czech Republic it is the dominant form of partnership within cooperation on the trilateral level. And the financial support comes both from supranational

sources (the EU sources) and from the domestic sources (national or regional). [5, 21] In the programming period 2007-2013, partnership projects (in the form of the third level) are being implemented with support for one thing from the European Social Fund (ESF), and for another from the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (FP7).

As regards the ESF, these activities are financed mainly from the Thematic Operational Programs, but also from individual Regional Operational Programs (e.g. for development of innovation centres, or support of partnerships of research institutes, universities and enterprises) [21].

An important priority within the Thematic Operational Program Enterprise and Innovation is Priority 5 – The Environment for Business and Innovation, for which EUR 1,080.9 million is earmarked from the EU funds. It is focused on the support of creation and development of line and branch groupings of entrepreneurial entities, scientific and research, educational and other institutions, or on establishment and development of entrepreneurial incubators and corporate innovation centres.

Another important source is the Thematic Operational Program Research and Development for Innovations, Priority Axis 2 – Regional Scientific and Research Centres, for which EUR 685.4 million is earmarked (the support aims to strengthen cooperation between scientific and research workplaces and the application sphere), and Axis 3 – Commercialization and popularization of the science and research with the subsidy of EUR 213 million (e.g. support of development of centres for transfer of technologies).

Another possible source is the Thematic Operational Program Education for Competitiveness, Priority Axis 2 – Tertiary Education, Research and Development with the subsidy from the EU funds of

EUR 626.5 million; the means can be used for involvement of experts from the practice in creation and implementation of university study programs, for support of the workers mobility between the research institutes and the private and public sectors, or for cooperation of tertiary education institutions, research and development workplaces and the entrepreneurial and public sectors.

The last chance lies in the sources of the Thematic Operational Program Human Resources and Employment, Priority Axis 1 – Adaptability, with the subsidy from the EU funds of EUR 525.4 million, intended e.g. for continuing education of the employees.

As regards the FP7, it is intended to support research activities, particularly those carried out by enterprises (including small and medium-sized ones), research centres and universities. It consists of four basic programs. The biggest volume of sources is available in the program of Cooperation – more than EUR 32 billion, focussed on support of research activities within international cooperation. Then there is a program called Ideas, which aims to support the basic research. Its budget amounts to EUR 7.5 billion. The program of People has a budget totalling EUR 4.7 billion, and it is focussed on supporting mobility of research workers and development of their careers. The last program, Capacities, is intended to support research infrastructure, development of research potential in regions, to support involvement of small and medium-sized companies and to strengthen their capacity. Its budget amounts to EUR 4.2 billion. [7]

3.2 Application Problems

Problems of the projects co-financed from the ESF are similar across all the operational programs. On the basis of information provided by the Ministry for Regional Development of the Czech Republic [6] and of structured interviews with project investigators, we can identify the following problem areas:

- information disarrangement – there are a lot of operational programs, they have different rules of processing applications and project solutions, which are also located in different places, so it is complicated to find them and to choose a suitable source;
- demanding application process – the range of applications is vast, the applicant has to provide a number of documents, they often have to make preparatory steps, and in the case their application is not successful, they incur expenses of no use;
- non-transparent process of application evaluation – unsuccessful applicants are given the basic feedback only, while comprehensive information concerning the reasons why their application has been rejected could contribute to an increase in the success rate of the submitted projects;
- changing rules – the rules of individual operational programs are permanently updated, while the investigators are obliged to observe not only the basic handbooks, but also a number of other rules presented in various forms (specialized handbooks, methodical letters, newsletters, etc.);
- administrative demands – it is required to provide detailed documentation of the project (particularly financial documents), which exceeds the requirements of the accounting act; at the same time, the documentation requirements are often duplicate or multiple;
- absence of preventive checks – the element of prevention is not systemically integrated in the process of application preparation and project implementation; although it is possible to consult individual steps, it is not possible, for example, to perform a preventive check before submission of an application or tender approval;
- obligation to run a tender process – purchasing is compulsorily carried out through tendering, whose process is complicated, connected with vast documentation and with permanently changing rules; the absence of preventive checks results in the risk of a challenge to the tender process, where the project investigator is subsequently forced to take over funding;
- change management – implementation of changes within the competence of the project investigator is limited, and the process of changes that have to be approved by the grant provider is complicated and time-consuming;
- complicated checking mechanism – the checking process involves a number of entities, whose mutual coordination is insufficient; another problem is a long period between the check and its feedback;
- formal orientation of the checking process – project monitoring and checks are focussed mainly on observation of formal rules, while only minimum attention is paid to fulfilment of real project objectives;
- strict and rigid financial management of the projects – in the case of administrative mistakes in transfers of small amounts, there are strict sanctions in place, and the process of a follow-up check and taking remedial action is usually

several times as expensive as the amount of the erroneous transaction itself;

- sustainability of project outputs – when the project implementation is finished, there is an obligation to ensure sustainability of its outputs for a period of 5 years, but this is connected with the problem of securing a sufficient volume of financial resources.

From the point of view of the FP7 projects, it is possible to see the key problems in the administrative demands, fragmented orientation of individual partial programs and support areas, a reserve in the level of aiming at innovation, and also in complexity and demands in the areas of coordination, communication and management of multicultural and dislocated project teams.

4 Conclusion

Cooperation within the triple helix model in its highest form representing mutual cooperation of enterprises, universities and governments is, in the Czech Republic, implemented mainly in the form of partnership projects supported from the EU sources, namely the ESF and the FP7.

It is the fact that a number of beneficial projects with a positive effect on the quality of the created infrastructure and the provided services, the level of research and innovation, the environment, and development across the entire society have already been and will have been implemented by the end of the programming period.

However, it is also the fact that utilization of these programs and projects, as it is specified in the paper, is connected with a number of problems resulting in lower effectiveness of utilization of the means the Czech Republic has at its disposal. The programming period 2007-2013 is coming to its end. It is necessary to consult the above risks and problems both on the national and the European levels to improve setting of the rules for the following programming period 2014-2020.

As for the projects supported from the ESF, in the next period it is necessary to decrease the number of operational programs, unify and simplify the rules for applicants and beneficiaries across all operating programs, centralize information sources, and improve timing of calls. Another area that should be improved is the area of information and communication, where the electronic forms of communication and documentation should be used to the maximum possible extent, the teams on the side of providers should be stabilized to strengthen the partnerships and mutual feedback, and it would be useful to introduce the elements of prevention. It

is necessary to increase transparency of application evaluation, e.g. it would be useful to introduce a two-round system of evaluation, it is also necessary to prepare feedback for unsuccessful applicants, and it would also be useful to establish an independent institution to which the applicants and investigators could turn in the case of disputes with the provider. At the same time, it is necessary to increase the pressure on evaluation of the projects from the point of view of efficiency, economy, and effectiveness, which should also be supported by the fact that the checks are not focussed on technicalities, but mainly on the subject matter of the project, or that a quality system of checks, which are now non-systematically carried out by several entities, is in place.

In the case of the FP7, it is necessary to implement the following changes: clearer agenda, simplification – simpler rules, simpler audits and control, subprograms reduction, better strategy for innovations, increase of commercialization of innovations. It is also being considered that the FP7 projects are connected with some other projects, namely the Competitiveness and Innovation Framework Programme (CIP) and the European Institute for Innovation and Technology (EIT).

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