

# European Union Funds at Public Universities in the Czech Republic – Example of Promoting Human Resources for New Research Infrastructure

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**Abstract**—The paper focuses on the implementation phase of the strategy of the European Union and the national strategy of the Czech Republic to promote academic and research staff with the potential to produce results that provide innovation useful for economic growth. It deals with the use of financial resources of the Operational Program Education for Competitiveness at the University of West Bohemia in Pilsen. The author presents an example of two strategic projects in the field of human resources – *Excellence in Human Resources as a Source of Competitiveness and New Excellence of Human Resources*. The subject of this paper is the potential contribution of newly recruited postdoctoral within these projects for the University of West Bohemia in Pilsen and its internal environment.

**Keywords**—EU funds, public universities, human resources, results of research, funding.

## I. EUROPEAN UNION FUNDS FOR REGIONAL PUBLIC UNIVERSITIES IN THE CZECH REPUBLIC

THE funds of the European Union are a major source of income at the public universities in the Czech Republic, which provides an opportunity to invest in areas representing crucial factors for the development of an economy based on knowledge and innovation. The basic program document for the EU funds in the Czech Republic during the period 2007-2013 is the National Strategic Reference Framework. Two operational programs – Research and Development for Innovation and Education for Competitiveness provide the greatest contribution to the development of the regional public universities (outside the capital city of Prague). Both the funding sources are in the mode of project management, with the grant provider the Ministry of Education, Youth and Sports [1].

The operational program Research and Development for Innovation strengthens research, development and pro-innovation activities in the Czech Republic, especially at universities and research institutions. It is designed to equip the research centers with new technology and to promote new research facilities and capacities of tertiary education. It also supports collaboration of grant recipients with the private sector. The operational program possesses 2.07 billion euros.

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The operational program Education for Competitiveness aims to support education at all levels of the educational system. It is divided into five priority axes. The second axis – tertiary education, research and development – represents an opportunity for public universities. This operational program has 1.83 billion euros from the European Social Fund [1].

Drawing up these two operational programs meant and means not only an opportunity for public universities but also a considerable commitment and increased demands on the academic, scientific and technical-administrative employees.

The project administration made public universities develop a new set of internal processes to eliminate any risk of improper administration and limit the administrative burden for academics and researchers. The public universities have intensified the workload of existing staff or recruited new ones. They also had to develop the skills of employees providing support processes.

## II. SUPPORT OF HUMAN RESOURCES AT THE UNIVERSITY OF WEST BOHEMIA IN PILSEN

The University of West Bohemia in Pilsen pays a great deal of attention to the support of human resources. In 2010 the university formally codified an internal motivation system, which was the previously set-up processes put into university legislation.

The basis of the motivation system was generally valid metrics of scientific activities and recommendation of the officials of the faculties and institutes. In principle, this is the support of human resources with a focus on achieving excellence. The motivation system consists of three parts. The first one focuses on the support of the academic and research employees having achieved outstanding, prestigious scientific outputs. They obtain the remuneration automatically after their scientific results are approved at the national level. The second part of the motivation system aims at talented students of master's and doctoral degree programs. They are granted a scholarship for excellent results in research and other creative activities. The third part is devoted to postdoctoral assistants working at the university within three years after the completion of the doctoral program [2].

The motivation system for the postdoctoral assistants directly intervened in the personnel policy of faculties and institutes and financially supported talented young academics

and researchers by giving incentive bonuses and buying scientific literature based on their requirements. Tens of postdoctoral assistants were supported annually with several million CZK [2].

The projects *Excellence in Human Resources as a Source of Competitiveness and New Excellence of Human Resources* at the University of West Bohemia in Pilsen represent major strategic projects in the field of human resources. From the internal point of view of the University of West Bohemia in Pilsen, they link to the university motivation system, strengthen it and push the support of human resources from the local to the European level.

The projects are carried out under the operational program Education for Competitiveness with a synergistic effect for new research centers built under the operational program Research and Development for Innovation. In sum, they have a budget of about 151 million CZK, which is to be spent between 2012 and 2015 [3], [4].

The main target groups are students of master's and doctoral degree programs who benefit from the activities of newly employed postdoctoral assistants. The selection procedure for postdoctoral assistants is carried out by selection committees composed of prominent scientists in the Czech Republic [3], [4].

The University of West Bohemia in Pilsen admits around 50 new postdoctoral assistants under these two projects. More than half of them must be graduates of doctoral programs at other universities in the Czech Republic or abroad. The project teams cooperate with Techmania Science Center in Pilsen in the field of science communication [3], [4].

The postdoctoral assistants are led by the best scientists at the university (mentors) and their results are regularly monitored by the board of the mentors and the projects' teams. They are trained in science communication by the professionals and are involved in educational activities for the target group. As for the research activities, they work in the research teams under the supervision of the mentors and are educated in research project management. They also participate in international and intersectoral mobility/internship which lasts from three to five months, international conferences and congresses and organizing local conferences and seminars under the financial support of the projects [3]-[5].

The postdoctoral assistants obtain temporary employment contract till 2015. The minimum gross monthly salary is 40,000 CZK; the maximum monthly salary is 57,000 CZK. The salary range exceeds the average salary of an assistant professor in the Czech Republic, which is 31,512 CZK, and partially exceeds even the average salary of an associate professor, 46,470 CZK (data from 2011) [3]-[5].

### III. THE POSITIVE CONTRIBUTIONS OF THE HUMAN RESOURCES PROJECTS FOR THE UNIVERSITY OF WEST BOHEMIA IN PILSEN AND ITS INTERNAL ENVIRONMENT

High-quality human resources are essential for the development of any institution. Excellent human resources in

the scientific field represent a competitive advantage for the region and the national economy. The positive contribution of the newly employed postdoctoral assistants for the University of West Bohemia in Pilsen can be expected in several areas.

#### A. Scientific Outputs

Due to the demanding selection procedure, the postdoctoral assistants are expected to achieve above-average scientific results. If we consider the Faculty of Applied Sciences in 2011, which has the best scientific performance at the university measured according to the methodology of the Research, Development and Innovation Council, we find that the average scientific results per person were 4 outputs per one year with the value of 108 points. Under conditions of full employment of 50 postdoctoral assistants in the projects with at least average results approximately 200 outputs and 5400 points a year can be expected, which represents one quarter of the scientific performance of the Faculty of Applied Sciences a year [6], [7].

#### B. Financial Contribution and Professional Experience

From the financial point of view, the points evaluating the scientific results serve as one of the indicators, which are taken into account in the allocation of public financial resources which are apportioned on the basis of a formula. According to the current methodologies of calculation these resources are: contribution to the educational, scientific, research, development and innovation, artistic or other creative activity; institutional support for the development of research organizations and grants for specific university research (research based on the cooperation of students with the university staff). The precise effect depends on the calculation of these resources according to changing methodologies and the amount of individual budget chapters of the state budget of the Czech Republic. It can be assumed that the new postdoctoral assistants will positively affect performance data in science, which directly affects the allocation of the above-mentioned public financial resources for universities [8]-[10].

The selected postdoctoral assistants bring new opportunities to get grants for projects from national and international grant schemes. Their contacts and experience from their internship or previous research teams are an inestimable advantage.

#### C. Synergetic Effect with New Research Infrastructure

In the context of the development of the University of West Bohemia in Pilsen, the two human resources projects are crucial. The university is in the process of building a new research infrastructure of regional and international excellence under the operational program Research and Development for Innovation. It includes the following centres of research and development: *NTIS – New Technologies for the Information Society (European Centre of Excellence)* which is managed by the Faculty of Applied Sciences focuses on cybernetic systems, information technology, heterogeneous materials, thin-film materials and mathematical models. The Faculty of Applied Sciences also aims at improving the conditions for

students under the project *CTPVV – Centre of Technical and Natural Science Education and Research* which provides high-quality equipment [11], [12].

*RICE – Regional Innovation Centre for Electrical Engineering* under the Faculty of Electrical Engineering with four main areas of research – new drive concepts, material research, power generation and industrial systems and system identification and diagnostics [13].

*RTI – Regional Technological Institute* is managed by the Faculty of Machinery Engineering. It is a modern mechanical and technological research institute [14].

*CENTEM – New Technology and Materials Centre* is a part of New Technologies Research Centre. It has five research programs – research and modification of the morphology and surface texture of materials, advanced technologies based on polymer materials, laser technology for processing and analysis of materials, research and development of polymer composites and materials for photovoltaics, photonics and microsystems technology [15].

The research activities are strengthened by the projects: *RIPO – Enlargement of Information Support of Research and Development* (reconstruction of the library building, the server room and construction of the archive) and *SCI-INFO – Scientific Information Sources for CR* (covering the electronic information sources of high quality) [16], [17].

Creating new job positions in the research centers is one of the main monitoring indicators. Well-staffed job positions within the infrastructure are not only to meet the monitoring indicators, but also the contribution to the sustainability of the infrastructure in its operational phase.

#### D. Against Academic Inbreeding

The human resources projects also aim to solve the problem of “academic inbreeding” (employment of graduates of doctoral programs at the university that trained them), a phenomenon which decreases scientific effectiveness and productivity. The condition to fill more than 50 % of new postdoctoral positions with external graduates makes the academics think in a different way. The situation requires intensive communication in the hierarchy of the university not only before the selection procedure, but also during involvement and adaptation phases. Underestimating communication can result in disruptions to scientific teams and “drowning” investment in human resources in case new employees do not adapt to new working conditions.

The situation of the project being administered at the rectorate level is complicated by the fact that the responsibility for personnel policy at public universities in the Czech Republic belongs to the management of individual faculties and institutes under the Higher Education Act no. 111/1998 Coll., as amended [18]. Thus, any centrally managed interventions in the conditions of personnel policy or changes in internal competition attract a great deal of attention from academics and university officials and might be judged as a violation of the autonomy of faculties and institutes if it is not explained carefully.

#### E. Internationalization and Internal Processes

The projects have already contributed to the internationalization of the scientific and academic environment, having already attracted postdoctoral assistants from Slovakia, Slovenia, Nigeria and India.

The project teams approach the management of the project with a great deal of attention and give suggestions to modify the strategy in human resources, setting or redefining management and supporting processes.

#### IV. CONCLUSION

The funds of the operational programs Research and Development for Innovation and Education for Competitiveness administered by the Ministry of Education, Youth and Sports of the Czech Republic represent an opportunity for the development of regional public universities and the economy itself.

The example of the two projects at the University of West Bohemia – *Excellence in Human Resources as a Source of Competitiveness and New Excellence of Human Resources* – shows the significance of such activities supported by the funds of the European Union.

The positive contributions of the projects improve the scientific performance of the university, increase the indicators for the calculation and allocation of public financial resources, bring new contacts and experience from other institutions, cause a synergetic effect with research infrastructure projects, provide a way to deal with “academic inbreeding” and promote both the internationalization of academia and the improvement of internal supporting processes.

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