

### **V.3: Support of research, development and innovation in Operational Programmes “Research and Development for Innovation”, “Enterprise and Innovation” and “Education for Competitiveness”**

#### V.3.1: Operational Programme Research and Development for Innovation (as of 31 December 2007)

##### Global strategic objective OP RDI

**The global objective of OP RDI is to strengthen the research, development and innovation potential of the Czech Republic ensuring growth, competitiveness and creation of jobs in the regions for the Czech Republic to become an European important area of concentration of these activities through the higher education institutions, research institutions and other relevant entities.**

This global objective ensures an important part of the Strategic Objective of the National Strategic Reference Framework (NSRF) “Competitive Czech Economy” and is fully in line with the second guideline of the Community Strategic Guidelines (CSG) “Improving knowledge and innovation for growth”. At the same time, the global objective of OP RDI fits into the overall framework of NRP reform steps at the microeconomic level.

##### Description of Priority Axes

##### Priority Axis 1 – European Centres of Excellence

The main goal of intervention is to establish a limited number of top-ranking centres with high-quality R&D infrastructure able to become fully integrated in the European Research Area and create knowledge used by commercial entities. The centres of excellence will be built in places (or within a reasonable commuting distance) where there are workplaces attaining sustainable top-quality results and active in disciplines falling among the priority ones at the national level (with a view to the main long-term directions of research /MLDR/ in natural and technical sciences) in accordance with the Government Resolution No. 1192/2006.

##### Priority Axis 2 – Regional R&D Centres

The main goal is to build a network of well-equipped R&D workplaces focused on applied research and intensify their collaboration with the application sphere (enterprises, hospitals, etc.) The regional research centres will concentrate an important part of capacities of the applied R&D in a given discipline marked as a priority at the national level (with respect to the main long-term directions of research in natural and technical sciences). These regional centres will be able to fulfil the function of a knowledge transfer and dissemination towards the application sphere, mainly the innovative small and medium-sized enterprises (SMEs). Centres will become key partners in a long-term collaboration in R&D for the application sphere that will improve the availability of R&D results for firms and commercial partners, accelerate the transfer of knowledge, shorten innovation cycle in firms thus contributing to a higher competitiveness of regions.

##### Priority Axis 3 – Commercialization, Popularization and Internationalization of R&D

This priority axis aims to establish conditions in research organisations for successful commercialization of results of their own R&D activity, including the intellectual property rights protection system and support to foundation of new technology-oriented firms. In addition, this priority should improve the system for R&D results awareness building, contribute to its promotion and popularization, and develop further the system of evaluation (especially through the use of foreign experiences), and contribute to raising the effectiveness of the R&D support from public funds. And last but not least, this third priority

pursues the goal of contributing to intensification of the international collaboration in R&D and enhanced capacity of Czech teams for international collaboration.

The priority axis 3 is divided into three mutually related spheres of support with need of a differentiated approach (commercialization and intellectual property rights protection; promotion, popularization and evaluation; international collaboration). It is expected that the individual spheres of support in priority 3 will be fulfilled crucially by synergic projects generated mainly in Priority Axes 1 and 2, while not being limited to the support beneficiaries from priorities 1 and 2. Therefore, the implementation phase closely relies on the interaction in realization of those three priority axes.

At the same time, synergic projects with selected areas of OP EI support are envisaged.

#### Priority Axis 4 – Infrastructure for research and development at higher education institutions connected with education and direct impact on the growth in human resources for research and development activities

This priority mainly aims to encourage the development of high-quality infrastructure for research and development at higher education institutions, in which the students participate and which is therefore directly connected with the education of future professional workers in research and development. This will ensure adequate human resources in the future for research, development and innovation activities in MLDR 1 to 7. Investment into R&D infrastructure of higher education institutions will contribute to higher quality of research and development at higher education institutions, help create conditions for better interlinking of theoretical education with practical skills in research and development activity and obtain human resources and space capacities for the area of research, development and mainly innovation. The graduates, at the same time, will become better assertable in practice.

#### Priority Axis 5 – Technical assistance

In the compliance with the Council's regulations, the field covered by technical assistance support aims to contribute to enhancing the quality of conducted measures, i.e. ensure effective management of the operational programme, its promotion, evaluation, thus giving a sufficient technical assistance to the Steering body and Intermediary entities of OP RDI for the purpose of a responsible and effective management of OP RDI. This priority axis covers also the evaluation of the development of R&D, knowledge based economy and innovation, with the aid of international benchmarking methods and through proposing and implementing corrective measures.

The support within the Priority Axis 5 is directed into the area of preparation, monitoring, administrative and technical assistance, evaluation, and audit and control, which are necessary for effective realization of OP RDI.

### V.3.2: Operational Programme Enterprise and Innovation

#### Priority axis 1 – Establishment of Firms

This priority axis covers two fields of intervention aimed at creating conditions for establishing new firms with an accent on innovation-oriented ones. The attention is paid to the accessibility of appropriate funds, including development of new pro-innovative financial instruments to facilitate the access of start-up entrepreneurs to capital, thus broadening the opportunities to finance their business plans and projects.

### Priority axis 2 – Development of Firms

This priority axis covers two spheres of intervention focusing on the implementation of business development plans of competitive small and medium-sized enterprises that have difficulties in obtaining external bank financing due to low levels of personal capital or limited ability to provide a guarantee for a loan. The emphasis is put not only on improving the technical facilities of firms by purchasing new modern technologies, but also on strengthening the sector of information and communication technologies (ICT) and utilisation of ICT in firms and development of selected strategic services.

### Priority Axis 4 - Innovation

Priority Axis 4 has two spheres of intervention focusing on encouraging the technical and non-technical innovation in enterprises, including the development of their cooperation activities with research and development institutions and the development of their own internal capacities for R&D, particularly in the SMEs sector, in order to increase their innovative activities and the number of enterprises that carry out in-house research and development. In this context, the Priority Axis 4 concentrates mainly on commercialisation of R&D results, which can tailor, accelerate and improve innovative processes towards a higher competitiveness of the sectors of industry and services. Within this priority, the attention is paid also to activities related to the intellectual property rights protection.

### Priority axis 5 – Environment for Enterprise and Innovation

Priority Axis 5 has three spheres of intervention and focuses on creation of an environment that encourages the establishment and development of innovative companies. It aims to build the necessary infrastructure for new entrepreneurs (mainly in case of innovative-oriented projects) in the form of business incubators, and to extend and increase the quality of co-operation between the business sphere and educational and research and development institutions to support and accelerate innovative processes in enterprises. This priority axis supports all forms of effective co-operation between enterprises (especially SMEs) and other entities.

### V.3.3: Operational programme Education for Competitiveness

#### Priority Axis 2 – Tertiary Education, Research and Development

##### 1. Description of starting position

The scope and importance of the tertiary education system is sharply growing as a result of the ever-increasing requirements on the population's intelligence, which naturally changes also its function and mission. The former model with an aspect of rigidly selective preparation available only to a limited number of applicants is already surpassed and the tertiary education has become accessible to a lot more people with very diversified abilities, motivation or expectations. This shift brings along, among other things, the necessity to match the education to the needs of a large part of population. At the same time it is, however, necessary to offer education for a much wider range of different social positions. The whole system of education is a significant factor determining the development of the country's potential in research, development and innovation. These very diverse demands may be only fulfilled by a system that is adequately interlinked with research, as well as richly diversified and penetrable. The large diversification of the system automatically entails stronger demand for a widely conceived professional level and performance of pedagogic and academic workers and workers in research and development. Such system poses new challenges also for the level of management, the information and advisory support, and, for example, quality management, too.

It is evident that the tertiary education system in the Czech Republic is not yet adequately diversified (especially in terms of its form) to provide commensurate education to all those interested in the study in accordance with their qualification. Insufficiently developed is particularly the domain of the first stage tertiary education (ISCED 5b, tertiary education colleges and first degree of higher education – Bachelor's Degree) that is commonly focused mainly on the actual needs of the labour market. As well, it must be stressed that in many areas the existing system of tertiary education insufficiently reflects the requirements of the employer sphere both in the structure of the graduates' competence and their quality. For example, still insufficient is the number of graduates in technical and natural sciences study programmes. Hot problem is also the insufficient direct connection of the pedagogic activity of academic workers with their activity in research and development and their co-operation with partners from public and private spheres.

Another issue is not too suitable setting up of the system in order to motivate individuals to start working and stay in the research and development activities and to become more involved in the resulting innovation activities. Considering the intensive internationalization and globalization, the system of tertiary education and research and development is facing the necessity of increasing the quality and attractiveness of this space for both domestic and foreign workers to utilise the human resources potential in areas having fundamental impact on building a knowledge-based society.

And last but not least, the relation between institutions of tertiary education and R&D institutions on one side and the sector of production or services on the other turns out to be unsatisfactory. A strong stimulation to partnership and intensive mutually beneficial co-operation of the above entities is missing. As a consequence, the transfer of knowledge and R&D results in educational and research institutions aimed at their more effective use in practice is limited. The tertiary education, research and development, and the sector of production and services still do not constitute a complex effective system that would encourage the formation and transfer of innovative solutions through various forms.

## 2. Global objective and specific targets

**The global objective of this priority axis is the innovation in the field of tertiary education towards its connection with the research and development activity, higher flexibility and creativity of graduates applicable in a knowledge-based economy and development of complex and effective instruments that would support the innovation process as a whole.**

### Area of support 2.3 Human Resources in Research and Development

Supported activities:

- Support to building high-quality R&D teams and their further development
- Preparation of involvement of both individuals and teams in the international networks and projects in research and development.
- Stimulation of intersectoral mobility, especially the mobility between research institutions and private and public sector.
- Further education of R&D workers in R&D management, popularization and communication, translating of results of research and development into practice, transfer of technologies and mastering knowledge in protection, evaluation and management of intellectual property rights of workers in research and development.
- Other specific vocational education of R&D workers
- Activities leading to the popularization of research and development and its results for the society.