



Final Project Report

8/05-2-2/05 Assessment of Priorities and Formulation of Recommendations for Implementation Measures towards Developing Knowledge Economy within Preparation of National Programming Documents of the Czech Republic for 2007 - 2013

**For the Ministry for Regional Development of the Czech Republic
prepared by Technology Centre AS CR**



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Recommendations for Implementation Measures towards Developing
Knowledge Economy within Preparation of National Programming
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Executive Summary

The aim of the project is to identify, evaluate and recommend suitable strategic priorities and relevant implementation measures focused on the growth of competitiveness and innovation capacity of the Czech Republic during the next programming period 2007-2013. The priorities and measures should ensure the effective utilization of structural funds, namely the European Regional Development Fund and the European Social Fund, with preferential focus on innovation and knowledge economy and thus promote development and optimal utilization of innovative economy potential in the Czech Republic.

Methodology is based on expert evaluation of information from various sources. The sources used for the preparation of the study may be assorted into several classes according to their nature:

- Documents determining the strategic orientation of EU in the next programming period 2007-2013 (i.e. Community Strategic Guidelines 2007-2013 and Integrated Guidelines for Growth and Jobs 2005-2008),
- National documents defining the strategic orientation of the Czech Republic in the next programming period 2007-2013 (primarily Strategy for Economic Growth, National Development Plan, National Innovation Policy of the Czech Republic 2005-2010, and National Research and Development Policy of the Czech Republic 2004-2008),
- Program documents of current operation programmes and analyses evaluating utilization of the EU financial aid in the present programming period (primarily the structural funds),
- Statistic data, studies and analyses focused on evaluation of the present situation in the Czech Republic in the area of research and development, innovations and enterprise (first of all the project on Community Support Framework Evaluation No. 4/04 “Barriers to the Growth of Competitiveness of the Czech Republic”),
- Detailed analysis of the most successful foreign programmes focused on areas where significant barriers of competitiveness growth have been identified in the Czech Republic (foreign good practices).

The searches and evaluation of the described information sources and analysis of the foreign good practices allowed to formulate recommendations which - in accordance with EU strategy for the new programming period 2007-2013 - propose activities focused on elimination or suppression of the competitiveness barriers in the Czech Republic. The recommendations were proposed for the fields of research and development, knowledge transfer, enterprise and human resources. Recommendations of common nature are also included.

Based on these recommendations the following strategic areas and priorities were proposed for the next programming period from 2007 to 2013 in the field of knowledge economy:



- **Enterprise** (priorities Support of enterprise development, Support of research, development and innovation in industry and enterprises, Support of new business formation, Development of entrepreneurial environment),
- **Research and development** (priorities Knowledge production and transfer, Co-operation of public and private sectors in research, development and innovation),
- **Human resources and education** (Development of lifelong education, Development of human resources for research, development and innovation).

Proposal of each priority contains brief characteristic and justification based on present situation in the Czech Republic, identified barriers and problematic areas, and simultaneously refers to the strategic documents prepared at EU and national (Czech Republic) levels. In each priority proposal, there are also introduced its global and specific objectives, implementation institutions, the most important monitoring indicators of impacts and results, relevant examples of foreign good practice, and relation between the priority and other proposed priorities.

For each priority there are proposed relevant implementation measures, which summarize activities indispensable for the accomplishment of the aims. Description of the measures includes their characteristic and orientation, aims, implementation institutions, final recipients and the most important indicators of results.

Priorities and the relevant implementation measures proposed in this study will be used for preparation of strategic documents of the Czech Republic for the next programming period of the EU structural funds (e.g. National strategic reference framework) and individual operation programmes for the area of knowledge economy.



Executive Summary in Czech

Shrnutí

Cílem projektu bylo posoudit a doporučit vhodné strategické priority a relevantní implementační opatření pro podporu konkurenceschopnosti a zaměstnanosti ČR v příštím programovací období 2007-2013. Priority a opatření by měly zajišťovat soustředění pomoci z Evropského fondu pro regionální rozvoj a z Evropského sociálního fondu s prioritním zaměřením na oblast inovací a ekonomiky založené na znalostech a tak podpořit rozvoj a maximalizovat využití kapacit inovativně založené ekonomiky v České republice.

Metodika byla založena na expertním zpracování dostupných informací z různých zdrojů. Informační zdroje, které byly využity pro přípravu této studie, je možné rozdělit do několika skupin:

- dokumenty a informace, které určují strategické zaměření EU v příštím programovacím období 2007–2013 (zejména Strategické obecné zásady Společenství 2007-2013 a Integrované zásady pro růst a zaměstnanost 2005-2008),
- dokumenty připravené na národní úrovni, které definují strategickou orientaci ČR v nadcházejícím období (především Strategie hospodářského růstu, Národní rozvojový plán České republiky 2007-2013, Národní inovační politika na léta 2005-2010 a Národní politika výzkumu a vývoje ČR na léta 2004-2008),
- programové dokumenty současných operačních programů a analýzy hodnotící využívání podpory EU (zejména strukturálních fondů) v současném programovacím období,
- statistické údaje, studie a analýzy zaměřené na posouzení situace ČR v oblasti výzkumu, vývoje, inovací a podnikání (především projekt č. 4/04 evaluace RPS „Bariéry růstu konkurenceschopnost ČR“),
- informace o programech úspěšně využívaných v zahraničí a zaměřených na oblasti, ve kterých byly v ČR identifikovány bariéry a problematické oblasti bránící růstu konkurenceschopnosti (zahraniční dobré praxe).

Výsledky rešerší uvedených informačních zdrojů a analýza zahraničních dobrých praxí umožnily formulovat doporučení, která v souladu se strategií EU pro nové programovací období 2007-2013 navrhuje činnosti zaměřené na odstranění nebo potlačení bariér a problematických oblastí v konkurenceschopnosti ČR. Doporučení byla navržena pro oblast výzkumu a vývoje, transferu výzkumných poznatků do praxe, podnikání a lidských zdrojů. V návrzích jsou zahrnuta také doporučení obecného charakteru.

Na základě těchto doporučení byly navrženy následující strategické oblasti a priority ČR v oblasti znalostní ekonomiky v novém programovacím období 2007-2013:



- **Podnikání** (priority Podpora rozvoje podnikání, Podpora výzkumu, vývoje a inovací v průmyslu a podnicích, Podpora vzniku nových firem, Rozvoj podnikatelského prostředí),
- **Výzkum a vývoj** (priority Produkce a transfer poznatků výzkumu a vývoje, Spolupráce veřejného a soukromého sektoru ve výzkumu, vývoji a inovacích),
- **Lidské zdroje a vzdělávání** (Rozvoj celoživotního učení, Rozvoj lidských zdrojů pro výzkum, vývoj a inovace).

Návrh každé priority obsahuje stručnou charakteristiku a zdůvodnění, které vychází ze situace v ČR a identifikovaných problematických oblastí a které zároveň poukazuje na souvislosti se strategickými dokumenty připravenými na úrovni EU i ČR. V návrhu priority je dále uveden její globální cíl, specifické cíle, instituce implementační struktury, nejdůležitější monitorovací indikátory dopadů a výsledků, relevantní příklady zahraniční dobré praxe a vazby na ostatní navržené priority a opatření.

Pro každou prioritu jsou navržena příslušná implementační opatření, která shrnují činnosti nezbytné pro splnění cílů dané priority. Popis opatření uvádí jeho charakteristiku a zaměření, cíle, instituce implementační struktury, konečné uživatele a nejdůležitější indikátory výsledků.

Priority a příslušná implementační opatření navržená v této studii mohou být využity pro přípravu strategických dokumentů ČR pro nové programovací období strukturálních fondů 2007-2013 (například Národní strategický referenční rámec) a jednotlivých operačních programů pro oblast znalostní ekonomiky.



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1. INTRODUCTION

Project „8/05-2-2/05 Assessment of Priorities and Formulation of Recommendations for Implementation Measures towards Developing Knowledge Economy within Preparation of National Programming Documents of the Czech Republic for 2007-2013“ was prepared by the Technology Centre AS CR on assignment by the Ministry for Regional Development CR, Section of Community Support Framework, Department 235 – Structural Funds Evaluation Unit. The project was financed from resources for technical assistance according to the measure 5.2 “Technical assistance CSF” JROP and it was produced in the sense of the presentation of the contractor at the public tender in July 2005.

2. PROJECT OBJECTIVE

The objective of the project was to assess and recommend suitable strategic priorities and relevant implementation measures in support of competitiveness and employment, which would ensure targeting of resources from the European Fund for Regional Development and from the European Social Fund with a priority in the area of innovation and knowledge-based economy in the programme period 2007-2013. This would support the development and maximize the use of capacity of the innovation-based economy in the Czech Republic.

Recommended priorities and corresponding implementation measures are directed so that their effect would, in the highest possible extent, remove obstacles and problems, which hinder maximum use of research and development, innovation and the education potential of the Czech Republic for the growth of its competitiveness. The proposed measures are also focused on securing the largest and most effective use of resources from structural funds in this area.

The proposed priorities and implementation measures will be used for the formulation of national programming documents of the Czech Republic for the next programming period 2007 – 2013.

3. PROJECT METHODOLOGY AND IMPLEMENTATION

The methodology was based on an expert evaluation of available information from different sources. Those used for the preparation of this study can be divided into five basic groups:

- documents determining strategic orientation of the EU in the next programming period 2007 – 2013 especially with regard to the renewed Lisbon strategy, and documents targeting the area of the Union support in the next programming period;
- documents prepared at the national level, which define the strategic orientation of the CR;



- programming documents of current operational programmes and analyses evaluating the use of the EU support in the present programming period;
- statistical data, studies and analyses aimed at assessing the situation of the CR in the area of research and development, innovation and entrepreneurship;
- information on programmes used successfully abroad and aimed at those areas, in which barriers and problems preventing the growth of competitiveness were identified in the CR (“foreign good practice”).

The work was carried out in 4 phases. In the first two phases of the project, an overview of relevant documents and background research of those were made. An overview of the most important documents included in the research/survey is provided at the end of this report.

In the next phase of the project, the information acquired in the research/survey was analyzed in detail and, at the same time, a synthesis was made, from which the following resulted:

- proposal of recommendations for individual areas of a knowledge economy (R&D, knowledge transfer, entrepreneurship, human resources and general recommendations);
- proposal of strategic areas, priorities and individual implementation measures in the field of innovation and knowledge economy. The results are transparently illustrated in diagrams in chapter 4.1;
- complex proposals of orientation and activities necessary for achieving objectives of individual priorities and measures. The proposals are listed in chapter 4.2.

Recommendation of strategic areas, proposal of priorities and individual implementation measures including their content were based on a deep analysis of the acquired information and its synthesis in a wider context with regard to the specific situation in the CR.

4. PROPOSAL OF STRATEGIC AREAS, PRIORITIES AND MEASURES FOR A KNOWLEDGE ECONOMY

4.1. Proposal of strategic areas, priorities and measures

Results of studies, analysis of foreign good practices, and recommendations for individual areas of a knowledge economy were used to propose strategic areas, priorities and implementation measures. The main goal was:

- to focus on research, development and innovation support in compliance with the European Commission regulation on targeting support from structural funds ;
- to retain positive aspects of the current Operational Programmes and Single Programming Documents;



- to include activities, which are not yet supported from any European or national sources;
- to create optimal links among activities (especially creation of knowledge → knowledge transfer → exploitation of knowledge);
- to avoid overlapping of individual intervention areas;
- not to omit areas which are not currently supported but which are important for the development of a knowledge economy – not to allow gaps.

For the knowledge economy, the following three basic strategic areas were proposed:

- entrepreneurship,
- research and development,
- human resources and education.

The strategic area **Entrepreneurship** includes activities aimed at improving business competitiveness and creating a business-friendly environment for the private sector.

The **Research and Development** strategic area is aimed at stimulating research activities by developing infrastructure and capacity for research and development, and cooperation of research and education institutions with businesses. This strategic area will also support creating environment that would stimulate commercialization of research and setting up spin-offs at research and education institutions.

In order to increase competitiveness of the economy it is also necessary to ensure highly qualified human resources. Activities focused on developing human resources for a knowledge economy are included in the strategic area **Human Resources and Education**. Activities targeted at improving quality of the education system, and at securing a greater number of quality research workers and qualified experts, as well as at the area of life-long learning and further professional education, are concentrated here. Strategic area Human Resources and Education does not include activities, which are covered by active employment policy.

The identified strategic areas comply with the Czech government resolution no. 245 of 2 March 2005, in which the following priority areas of the economic and social coherence for the period 2007 - 2013 were approved:

- Entrepreneurship
- Innovation and knowledge economy
- Human resources and universities.

The aim and the content of the proposed strategic areas are in accordance with the National Development Plan of the Czech Republic 2007-2013, which has the following priorities in the area of knowledge economy:

- Competitive business sector
- Support of R&D capacities, innovation



- Education.

The proposed strategic areas, priorities and corresponding implementation measures are shown in diagrams in Figures 1 to 3.

FIG. 1. STRATEGIC AREA „ENTREPRENEURSHIP“

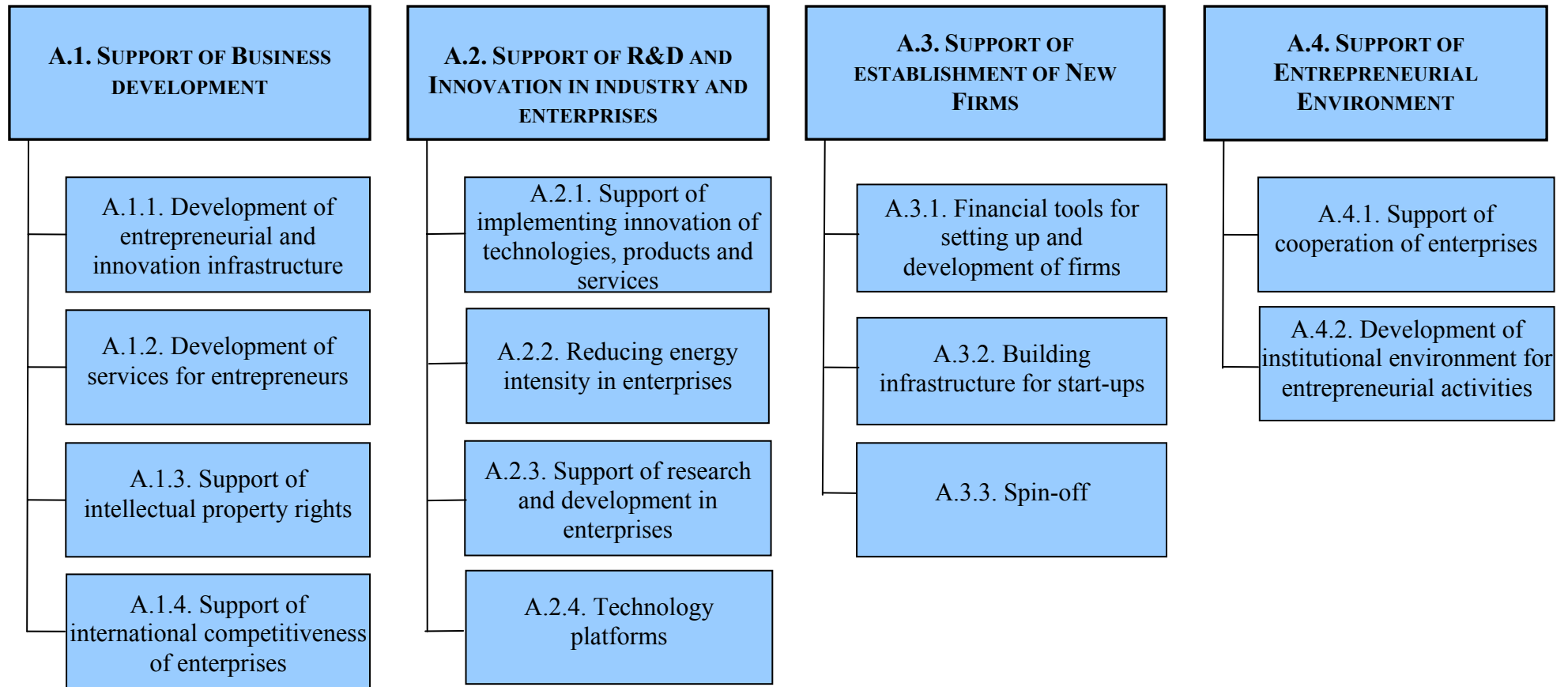


FIG. 2. STRATEGIC AREA „RESEARCH AND DEVELOPMENT“

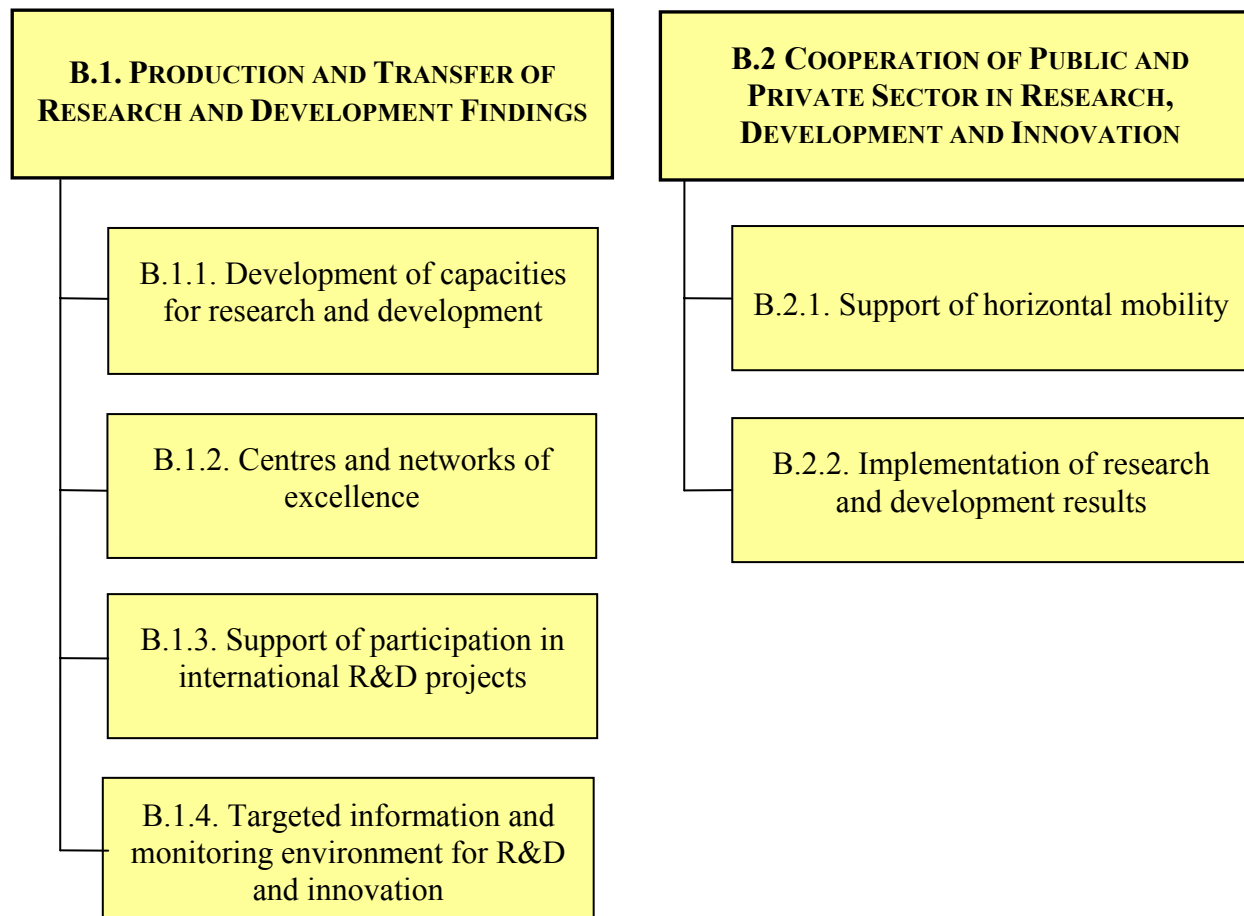
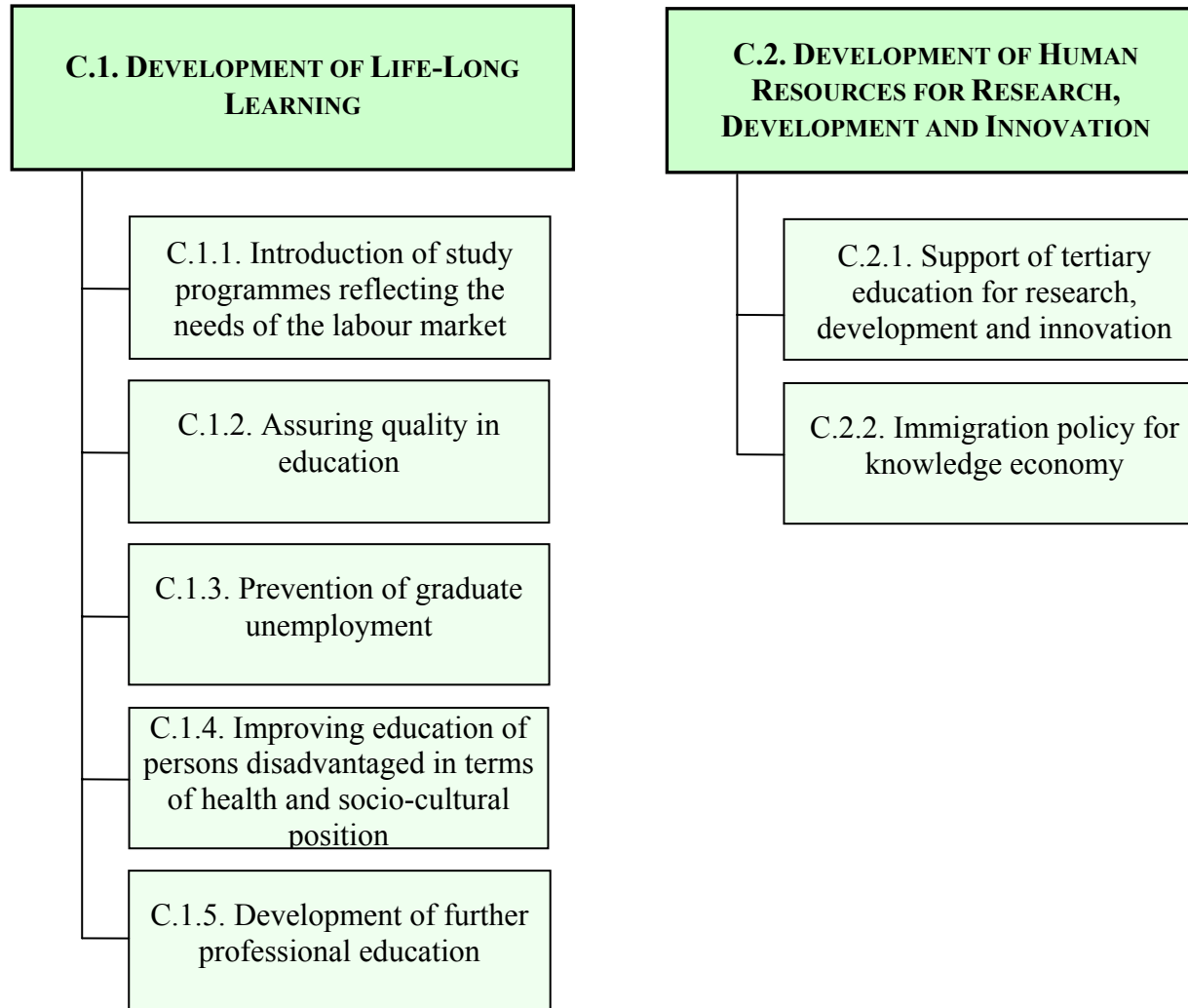


FIG. 3. STRATEGIC AREA „HUMAN RESOURCES AND EDUCATION“





4.2. Focus and objectives of priorities and implementation measures

4.2.1. Priority A.1.Support of Business Development

Aim and characteristics of the priority:

The priority “Support of Business Development“ is aimed at support of activities, which simplify doing business, increase competitiveness and strengthen position of businesses. First measure supports building and development of entrepreneurial and innovation infrastructure. The second measure is aimed at improving advisory services for businesses in connection with activities supported in this priority and in other priorities. Separate measures are proposed for stimulation of patent activities of research, education and business entities, and for increasing international competitiveness of enterprises.

Priority proposal rationale:

Situation in the CR

The Czech Republic lags behind in competitiveness. According to the “World Competitiveness Yearbook” published by the Institute for Management, Switzerland (IMD) in 2005, which compares altogether 60 countries in economic performance, business, infrastructure and effectiveness of governance, the Czech Republic was ranked 36th and its level reached approximately 60% of the level of the most advanced economy of the USA. According to the European Innovation Scoreboard, which compares countries in the spheres of research, development and innovation, the position of the CR is also not very favourable comparing to the advanced countries. In the overall evaluation of innovation environment, the CR falls with its score far behind the EU-15 average and especially far behind the leading Japan.

Position of the CR in patent activity is very unsatisfactory – the number of applications at the European Patent Office does not even reach 10% of the European average; furthermore, the number of applications from 2000 to 2002 fell by nearly 20%. The number of applications at the Industrial Property Office (Czech Patent and Trademark Office) has been declining in recent years.

The situation is not satisfactory in manufacturing infrastructure of business entities. A substantial part of small and medium-sized entrepreneurs still uses out-of-date machine equipment and technology, which hampers innovation and decreases product competitiveness. The CR also lags behind in connection of small and medium-sized entrepreneurs to high-speed Internet in comparison with the EU-15 average. Entrepreneurs also less use ICT for their business development; electronic business and e-learning is particularly lower compared to the EU-15 average and advanced countries.

In the area of business and innovation infrastructure the situation is also unsatisfactory. Although support of business infrastructure is included in the current Operational Programmes, its capacity as well as the level of services provided is debatable. There has not



yet been created a quality, professional and capacity network of organisations providing support services for businesses (e.g., advisory services) and there has not been established a corresponding system of accreditation in the CR.

Identified barriers

The report “Barriers to the Growth of Competitiveness of the CR” and other analyses of the environment in the CR identified the following most significant obstacles and problem areas:

Science and technology parks (STP) and technology-transfer centres:

- inadequate link of business infrastructure (e.g. STP) with research,
- insufficient scope of services provided,
- soft criteria (based on general terminology) for STP certification,
- lack of qualified workers in technology transfer.

Services for entrepreneurs:

- insufficient capacity and quality of advisory services,
- consulting firms do not provide complex services to companies (there is insufficient personal capacity in advisory firms),
- absence or lack of counselling focused, for example, at:
 - start-up of business activity and foundation of firms,
 - use of financial resources (investment activity, venture capital financing, utilization from financial resources from Structural funds, etc.),
 - activities related to research and development and to implementing innovation,
 - technology transfer and intellectual property protection,
 - acting at the single European market and at world markets,
- small awareness of entrepreneurs of possibilities of using advisory services.

Patent activity:

- great financial burden of patent protection abroad,
- business orientation on short-term profits and lack of interest of managers to invest in protection of intellectual property,
- insufficient awareness of industrial law among researchers and wider professional community; low motivation to patent new inventions,
- shortage of qualified patent agents,
- legislative failures in the area of intellectual property protection (e.g., poor enforcement of ownership rights, slow bankruptcy proceedings).

The report “Barriers to the Growth of Competitiveness of the CR” also identified significant obstacles in international cooperation area, including participation in international projects.



Link to strategic documents of the EU and the CR

Community Strategic Guidelines and Integrated Guidelines for Growth and Jobs recommend in connection with business development for example:

- to support development of business and innovation infrastructure in order to simplify entrepreneurial activity and implementing innovation (e.g., technology transfer centres, STP, advisory and information centres in the area of innovation, etc.),
- to provide support services to business (especially to SME), which support growth of competitiveness (technology transfer, business incubators and related services, etc.),
- to provide support also in traditional areas such as management, marketing, technical support, human resources and other professional and business services,
- to support providing of appropriate information and support services, which encourage foundation of new businesses,
- support growth of business competitiveness and economy in the global market.

The development of business services is included in the National Development Plan of the CR 2007-2013 under the priority axis “Competitive business sector”. National innovation policy of the CR for the years 2005 – 2010 emphasizes, among others, the need to secure accessible counselling services and educational and training programmes.

Support of intellectual property protection is included in the National Innovation Policy (measures no. 8 to 11) as well as in other fundamental strategic documents, which were compiled for preparation of the new programming period 2007-2013 (Economic Growth Strategy, National Development Plan). Development of international competitiveness and international market entry of businesses is also dealt with in the export policy of the Ministry of Industry and Trade (MIT) which features, for example, professional counselling, promotion and presentation of Czech products and subjects abroad.

Global objective of the priority:

Global priority objective is to support activities, which simplify entrepreneurial activities, help research and innovation activities, increase competitiveness and strengthen position of business.

Specific objectives:

- development of enterprises and innovation infrastructure,
- development of services for entrepreneurs,
- growth of activities of SMEs, research and education institutions in the area of intellectual property protection,
- development of international competitiveness of enterprises.



Institutional and sector structure

- public administration institutions (e.g., CzechTrade and its regional offices, CzechInvest and its regional offices, Industrial Property Office) – competency at the level of managing body, final beneficiary, intermediary, project foundation initiator,
- institutions representing entrepreneurs (e.g., Economic Chamber of the CR, regional economic chambers, Confederation of Industry of the CR) – competency of final beneficiary, counselling,
- innovation infrastructure institutions (e.g., Association of Innovative Entrepreneurship CR, Science and Technology Park Association CR, technology transfer centres, BIC, science and technology parks, business incubators, RDA) – competency of final recipients/ beneficiary, counselling, facilitation,
- universities and education institutions – competency of final recipients/ beneficiary, counselling.

Key indicators of impacts and results

- increase of innovation capacity of SMEs (increase in number of employees in R&D in SME in %),
- increase in business competitiveness (increase in turnover of supported companies in %),
- increase in number of SME connected to high-speed Internet (in %) – EIS-2005,
- expenditure in information and communication technologies (EIS-2005),
- increase in quality and capacity of counselling services for entrepreneurs (increase of number of certified advisors in %),
- growth in the number of patent applications of SME and research and education institutions abroad and in the CR (in %),
- increase in production value added in supported businesses (%),
- export volume in high-tech fields (EIS-2005).

Relation to other priorities and link to individual measures

Measure *A.1.1 Development of entrepreneurial and innovation infrastructure* supports acquiring of modern production and business infrastructure in companies. Building of infrastructure for research and development¹ in businesses is supported in measure *A.2.3 Support of research and development in enterprises*. Measure *A.1.1* also supports foundation

¹ Acquiring R&D infrastructure in research and educational institutions is part of measure *B.1.1. Development of research and development capacities*



and operation of technology transfer centres and STP. Foundation and operation of incubators is supported in a separate measure *A.3.2 Building infrastructure for start-ups*. Measure *A.1.1 Development of business infrastructure* is also related to measure *A.1.2 Development of services for entrepreneurs* (this link is described in more details in the following paragraph).

Measure *A.1.2 Development of services for entrepreneurs* is aimed at support of counselling activities in a range of areas which are linked to implementing innovation, R&D results implementation in practice, technology transfer, intellectual property protection, etc. Organizations, which will support this type of services, will be subject to accreditation in particular areas. Support for use of these services will be provided in the form of grant to businesses (business will be granted a subsidy to advisory services delivered by accredited counselling firms).

This measure is conceived generally and counselling services supported within this measure will be possible to use for all activities, which are part of other measures. The advantage of such approach is also a possibility to monitor quality of provided services in the form of accreditation of consulting agencies for particular fields of consulting (e.g., advisory services for implementing R&D and innovation results, facilitation of capital access for start-up and development of firms, etc.).

Measure *A.1.3 Support of intellectual property rights* is focused on increasing patent activities of SME and research and education institutions, including establishment of a grant to cover part of costs connected with submitting application abroad and in the CR. Although measure *A.2.1 Support of implementing innovation of technologies, products and services* also provides support for submitting application, this is only in relation to implementation of innovation activities of the business sphere.

Measure *A.1.3* does not only support patent activity of businesses, but also research and educational institutions. For this reason it is essential to ensure the link between this measure and activities of research and educational institutions, which are aimed at implementing R&D results in practice, and which are supported under priority *B.2*. This concerns particularly measure *B.2.2 Implementation of research and development results* (e.g., use of subsidy for patent activity linked to start-up of a spin-off or linked to commercialization of research results).

Measure *A.1.4 Support of international competitiveness of enterprises* is aimed at reinforcing competitiveness of companies in the global marketplace. Activities related to participation in international research and development projects are supported within measure *B.1.3 Support of participation in international research and development projects*. Under the measure mentioned, SME can also get a subsidy towards their budget in an international research project.



4.2.1.1. Measure A.1.1. Development of entrepreneurial and innovation infrastructure

Characteristics

The measure is focused on development of business (entrepreneurial) and innovation infrastructure in the CR. Under this measure, subsidies will be provided to cover part of costs of equipping SME with modern manufacturing infrastructure. Furthermore, foundation and operation of technology transfer centres and science and technology parks will be supported. Part of the measure will also be support of training including increasing qualification of SME workers and organizations providing counselling, and further professional education in the area of business and innovation infrastructure.

Global objective

Global objective of the measure “Development of entrepreneurial and innovation infrastructure” is to form optimum conditions for development and growth of businesses with innovative potential, and extension and enhancement of linkages of industry and enterprises to research and development.

Principal operational objectives

- support of access of firms to modern manufacturing infrastructure – expansion of investment access of SME in connection to creation and maintenance of jobs, implementing sustainable production procedures and investment to modern management technique,
- support of implementing information technology and services in business entities, implementation of management systems, etc.
- improving access to high-speed Internet and increasing use of information technology in business entities,
- support of foundation and operation of (new as well as existing) innovation centres and technology transfer centres including participation of capital providers,
- support of facilitation of access of companies to financial resources in activities related to technology transfer,
- cooperation of technology transfer centres, incubators, STP and other organisations,
- extension of collaboration of technology transfer centres and their networks with similar centres and networks abroad,
- support of increasing qualification of workers of businesses participating in technology transfer as well as workers of organisations providing services in technology transfer,



- support of foundation and operation of new as well as existing science and technology parks, formation of appropriate financial tools (models) for STP operation, building and reconstruction of operational premises (e.g., regeneration of brownfields),
- increasing workers' qualification in firms in relationship with STP operation.

Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should participate at implementing the measure at the level of managing body, intermediary, and final beneficiary. Implementation of the measure should integrate especially institutions dealing with technology transfer (e.g., technology transfer centres) and institutions, which create infrastructure for entrepreneurial activities (business incubators, science and technology parks, Association of Innovative Entrepreneurship CR, Science and Technology Park Association CR), universities and research institutions (both public and private).

Final recipients

- municipalities, groups of municipalities, regions,
- development companies, i.e., legal entities whose main line of business includes trades in direct connection to development and rent of business real estates at the CR territory,
- businesses acting in fields of processing industry or strategic services and technology centres, businesses of innovation character, spin-off firms,
- small and medium-sized enterprises.

Key indicators of results

- established innovation centres, technology transfer centres, and science and technology parks (number and sq. m),
- supported innovation centres, technology transfer centres, and science and technology park (number),
- built enterprise space and objects (number and sq. m),
- newly created jobs (number),
- supported SME connected to high-speed Internet (number),
- supported SME using information technology (number),
- educational programmes in ICT (number).

Indicators will be monitored according to type, field and region.



4.2.1.2. Measure A.1.2. Development of services for entrepreneurs

Characteristics

The measure will support counselling activities for businesses (especially SME) in connection with implementing innovation, increasing competitiveness and entrepreneurial activities (e.g., increase of innovation activities of businesses and decrease in innovation risk rate, growth of absorption capacity of companies, increase in company readiness for venture capital entry, and start-up of new firms). Part of the measure will also be a support of increasing knowledge of workers of organizations providing advisory services.

Global objective

Global objective of the measure “Development of services for entrepreneurs” is developing quality and professional network of organizations with regional scope of action that will provide counselling services for businesses including formation of corresponding system of accreditation in areas related to implementing innovation, increasing competitiveness and entrepreneurial activities.

Principal operational objectives

- increasing quality and capacity of advisory services for entrepreneurs,
- increasing innovation activities of businesses and decrease in the risk rate of innovations,
- increasing readiness of businesses for venture capital accession,
- start-up of new firms (including spin-off),
- increasing knowledge of workers of organizations providing counselling services.

Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should participate at implementing the measure at the level of managing body, intermediary, and final beneficiary. Institutions representing entrepreneurs and providing counselling (chambers of commerce, Confederation of Industry of the CR), and counselling institutions (BIC, RDA) should participate at implementing the measure.

Final recipients

- businesses, especially SMEs,
- people interested in setting up a business (potential entrepreneurs),
- research institutions (both public and private),
- public administration institutions (including regional and local authorities),



- business unions and professional associations,
- advisory organizations,
- employees of advisory organizations.

Key indicators of results

- establishment of consulting firms (number),
- educational programmes for workers providing counselling services (number),

Indicators related to counselling institutions activity:

- start-up of new firms (number of),
- SME patent applications abroad and in the CR (number),
- number of venture capital and early-stage capital investments in firms – according to field, region and value of investment.

4.2.1.3. Measure A.1.3. Support of intellectual property rights

Characteristics

The measure is aimed at increasing patent activity of Czech subjects abroad and in the CR. It will provide subsidies to cover part of costs related to patent application at Industrial Property Office of the CR and abroad (EPO, USPTO, JPO and others). Part of the measure will also be support of education and legal awareness of workers of universities, research institutions and SMEs, as well as increasing qualification of industrial law advisers and workers of organizations, which provide counselling in the field of intellectual property protection.

Global objective

Global objective of the measure “Support of intellectual property rights” is increasing patent activity of research and educational institutions and small and medium-sized enterprises in the CR.

Principal operational objectives

- growth of patent applications abroad and in the CR,
- increasing knowledge on intellectual property protection of workers of research and educational institutions and SME,
- increasing knowledge of workers of counselling institutions whose operation is related to intellectual property protection or transfer of research findings into practice (for example, workers of technology transfer and incubators).



Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should participate at implementing the measure at the level of managing body, intermediary, and final beneficiary. Furthermore, institutions dealing with intellectual property protection (Industrial Property Office) could act at the final beneficiary level. Educational institutions (public, nongovernmental non-profit organizations, private), counselling institutions (BIC, RDA, chambers of commerce, Confederation of Industry of the CR) and universities should participate at implementing this measure.

Final recipients

- public and private educational institutions,
- public and private research institutions,
- small and medium-sized enterprises.

Key indicators of results

- submitted applications at Industrial Property Office and abroad, particularly at European Patent Office (EPO), in the USA (USPTO) and in Japan (JPO) – number,
- patents granted at Industrial Property Office and abroad, particularly at European Patent Office (EPO), in the USA (USPTO) and in Japan (JPO) – number (EIS-2005),
- triadic patents² (number) – EIS-2005,
- Community trademarks (number) – EIS-2005,
- Community industrial designs (number) – EIS-2005,
- use (citation) of Czech patents abroad (number).

Application as well as patents granted will be monitored according to their type (patents, utility models, industrial designs, topographies of semiconductor products, trademarks), sectors (Industrial Classification of Economic Activities – CZ-NACE) and regions (seat of an institution or an individual).

4.2.1.4. Measure A.1.4. Support of international competitiveness of enterprises

Characteristics

The measure is aimed at strengthening competitiveness of Czech businesses in the global marketplace. In this measure, increasing international competitiveness of small and medium-

² So called “triadic patents“ represent patents, or patent applications, of the same invention submitted in Europe (EPO), USA (USPTO) and Japan (JPO)



sized enterprises will be supported (for example, support for implementing internationally-recognised standards, development of services for international trade and development of international cooperation of companies, presentation at foreign trade fairs, counselling projects aimed at improving SME position on global markets).

Global objective

Global objective of the measure “Support of international competitiveness of enterprises” is strengthening international competitiveness of Czech businesses and increasing participation and success rate of Czech businesses on international market.

Principal operational objectives

- implementing internationally recognised standards,
- development of advisory services to exercise at international market,
- increasing collaboration of firms to strengthen competitiveness and participation in international market,
- development of promotion and presentation of Czech firms in foreign markets.

Institutions of the implementation structure

The Ministry of Industry and Trade CR and CzechTrade (regional information points of CzechTrade agency) should participate at implementing the measure at the level of management body, intermediary, and final beneficiary. Institutions representing entrepreneurs and providing counselling (chambers of commerce, Confederation of Industry of the CR), and counselling institutions (BIC, RDA) should participate at implementing the measure.

Final recipients

- small and medium-sized enterprises,
- advisory and consulting institutions.

Key indicators of results

- businesses with established international standards (number),
- businesses using counselling services (number),
- businesses participating in collaboration leading to increasing international competitiveness and participation in international markets (number),
- businesses promoting themselves abroad (number).



4.2.2. Priority A.2. Support of Research, Development and Innovation in Industry and Enterprises

Aim and characteristics of the priority:

Priority “Support of Research, Development and Innovation in Industry and Enterprises” supports activities related to R&D and innovation in business sector. The first measure is aimed at supporting innovation activities of the business sector; in the second measure, innovation projects aimed at reducing energy intensity and use of renewable energy resources will be supported. The next measure of this priority will stimulate research and development activities of businesses, especially by expanding R&D infrastructure for applied and industrial research and support collaboration of businesses with research and education institutions. The last measure is focused on support of creation and development of technology platforms in selected and perspective fields.

Priority proposal rationale:

Situation in the CR

The Czech Republic lags behind in the ratio of innovative small and medium-sized enterprises compared to the EU-15 average. Also the proportion of value added from high-tech companies drags considerably behind compared to the EU-15 average and countries comparable in size in the EU-15. It also turns out that Czech business entities invest substantially less to their own research and development compared to the advanced EU countries. The number of research workers in business sector is considerably lower than in the advanced EU countries as well.

High energy intensity is also typical for the CR, which among others indicates a relatively low level of advancement in certain industries. Although the situation somewhat improved³, the Czech Republic still at present considerably exceeds energy intensity of advanced countries. The impact of high energy intensity is an increase of total production costs of businesses and this decreases competitiveness of Czech products and, at the same time, has negative impact on the environment.

Foundation of technology platforms is just starting in the Czech Republic. According to available data, some research institutions and companies have already joined European technology platforms, which were found within the Sixth EU Framework Programme for Research and Technological Development. However, compared to several EU-15 members as well as some new member countries, the situation in the area of technology platforms is unsatisfactory in the CR so far. Furthermore, presently there is not a programme to support technology platform foundation in the CR.

³ In early nineties, the Czech economy was among the most energy intensive economies in the world



Identified barriers

The report “Barriers to the Growth of Competitiveness of the CR” and other analysis focused on analysing situation in R&D and innovation identified the following problem areas and obstacles:

In the sphere of innovation:

- high financial intensity and risk of innovation,
- deficiency of financial resources and capacities of businesses to conduct innovation activities,
- low interest of the banking sector in financing risk (innovation) projects,
- high financial cost of patenting abroad, which reflects in the very low number of Czech patents at EPO and USPTO,
- insufficient support in the area of intellectual property protection,
- lack of adequately qualified workers for knowledge-intensive entrepreneurial activities, low level of further education particularly in high-tech industries.

In the sphere of corporate research and development:

- a very low number of employees in corporate research,
- low research expenditure of the private sector; furthermore, 60% of this expenditure is created by branches of foreign companies,
- R&D costs are the main costs of innovation in a very small number of businesses,
- high costs of acquiring equipment for research and development,
- high costs for development of human resources in R&D.

Low expenditure on research and development are the results of privatization, unfinished restructuring as well as insufficient demand for innovation. Currently, there is no effective support of private research and innovation firms on the part of the state; cooperation of research organisations and universities with the business sphere is also insufficient, which is, among others, reflected in difficult implementation and commercialization of research results in practice.

In light of energy intensity, the following is typical for the CR:

- little use of renewable energy resources and energy savings,
- persisting high rate of heavy industry in the economy,
- obsolete equipment especially in small and medium-sized enterprises,
- use of obsolete, energy intensive technologies.

One of the main reasons of this unsatisfactory situation is the high cost related to purchase and implementation of less energy intensive technologies.



Link to strategic documents of the EU and the CR

According to the Community Strategic Guidelines and Integrated Guidelines for Growth and Jobs, for development of R&D and innovation activities of the business sphere it is especially important:

- to improve investment of private sector to research and development,
- to support SME activities in the area of research and technology development,
- to support innovation of products, processes and services, which results in growth of competitiveness and creation of new jobs,
- cooperation of research and private sector in the area of R&D and innovation,
- improvement in financial resources availability for R&D and innovation activities,
- accessible and clearly defined intellectual property rights,
- promotion of business culture and creation of environment supportive to small and medium-sized enterprises, among others also by strengthening innovation potential of SME,
- decreasing energy intensity by improving energy effectiveness and gaining energy from renewable resources.

Foundation of technology platforms is supported by the European Commission. One of its main objectives defined in the Communication from the Commission “Science and technology, the key to Europe's future” (COM (2004) 353) is starting European technology initiatives also by setting up technology platforms associating businesses, research institutions, financial institutions and administration bodies at the European level.

Activities focused on developing R&D and innovation activities are one of the main goals of the National Development Plan of the CR 2007-2013, including creation of new programmes for supporting industrial research and development in SME and their cooperation with research and educational institutions.

Also the National Innovation Policy of the CR for 2005-2010 underlines the development of innovation activities, namely the financial side of innovation as well as human resource development and matters of cooperation of research and business sector in implementing innovation activities. The meaning of support of intellectual property rights in connection with innovation activities is also stressed in the National Innovation Policy. The area of innovation and intellectual property rights is also included in the Strategy of Economic Growth.

Under one of the objectives of the National Innovation Policy for of the CR for 2005-2010 – “Strengthening research and development as a source of innovation” – it is taken into account to increase public expenditure on R&D especially in areas of industrial research every year.

Collaboration of public and private sector in R&D and establishment of technology platforms, including financing start-up of joint projects within the framework of technology platforms, is supported by the National Development Plan of the CR 2007-2013, whereas co-financing of projects should be shared by public resources as well as resources from EU Structural Funds.



A programme for support of establishment of technology platforms in selected industries was also defined in the National Innovation Policy of the CR for 2005-2010 in its objective “To establish well-functioning public private partnerships”.

Global objective of the priority:

Global objective of the priority is stimulation of R&D and innovation activities of business sphere including foundation of technology platforms and reducing energy intensity of industry.

Specific objectives:

- increasing innovation activities of businesses and implementing technology, innovation in products and services,
- reducing energy intensity of industry,
- development of research and development activities of business entities,
- foundation and start-up development of technology platforms.

Institutional and sector structure

- public administration institutions (e.g., Ministry of Industry and Trade, CzechInvest, regional Office of CzechInvest, Czech Energy Agency, Industrial Property Office) – competency at the level of managing body, final beneficiary, intermediary, project foundation initiator,
- institutions representing entrepreneurs (e.g., Economic Chamber of the CR, regional chambers of commerce, Confederation of Industry of the CR) – competency of final beneficiary, counselling, facilitation,
- financial institutions (e.g., Czech-Moravian Guarantee and Development Bank) – competency of final recipient, counselling,
- institutions supporting quality standards implementation (e.g. The Czech Society for Quality) - competency of final recipient/beneficiary, counselling,
- umbrella institutions for research organisations (e.g., Association of Research Organisations) - competency of final recipient/beneficiary, counselling,
- innovation infrastructure institutions (e.g., Association of Innovative Entrepreneurship CR, Science and Technology Park Association CR, technology transfer centres, BIC, science and technology parks, BIC, RDA) – competency of final recipients/beneficiary, counselling, facilitation,
- universities – competency of final recipients/beneficiary, counselling,
- research organisations (public and private).



Key indicators of impacts and results

- increase in the number of innovating firms (%),
- increasing qualification of workers in R&D and innovation (number of trained workers),
- reducing energy intensity of industry (%),
- increase of R&D expenditures in the business sector (%),
- ratio of med- and high-tech R&D (%) - EIS-2005,
- R&D expenditure of corporate sector (BERD) - EIS-2005,
- ratio of firms, which gained public support (%) - EIS-2005,
- business expenditure on innovation (EIS-2005),
- number of businesses innovating products, technology and services using their own resources (EIS-2005),
- number of businesses innovating products, technology and services in cooperation (EIS-2005),
- number of businesses exercising non-technology innovation,
- sales of new to market products (EIS-2005),
- sales of new to firm products (EIS-2005),
- employment in med- and high-tech manufacturing (EIS-2005),
- employment in high-tech services (EIS-2005).

Relation to other priorities and link to individual measures

Measure **A.2.1 Support of implementing innovation of technologies, products and services** will support intellectual property rights of SME in relation to implemented innovation activities (submitting applications abroad and in the CR, purchase of licences, know-how, etc). Research and education institutions can get a subsidy for submitting patent application according to measure **A.1.3 Support of intellectual property rights**.

Measure **A.2.2 Reducing energy intensity and using renewable energy resources in enterprises** is linked to priority **C.1 Development of life-long learning** and particularly to measure **C.1.5 Development of further professional education**, in which activities aimed at increasing knowledge related to reducing manufacturing energy intensity and use of renewable energy resources should be supported.

Measure **A.2.3 Support of R&D in enterprises** is focused solely on corporate sector. Activities aimed at R&D support in public and private research and educational institutions are part of priority **B.1 Production and transfer of research and development findings**, particularly measure **B.1.1 Development of research and development capacities**.



Measure **A.2.4 Technology platforms** is aimed at foundation and initial development of technology platforms in selected and perspective fields, whereas a very important aspect is connecting the research sphere with the corporate sector and integrating capital providers (large corporations in particular field play a major role in those activities). On the contrary, measure **A.4.1 Support of cooperation of enterprises** is focused on foundation and initial development of regional professional clusters of businesses and industrial poles of excellence. Measure **B.1.2 Centres and networks of excellence** then supports foundation of knowledge economy centres at prime research and education institutions in a region and formation of their networks.

Priority **A.2 Support of R&D and Innovation in Industry and Enterprises** (especially in measures **A.2.1** and **A.2.3**) is linked to priority **B.2 Cooperation of Public and Private Sector in Research, Development and Innovation**, which supports mobility of research workers between the business sphere and research and educational institutions (including implementation of large R&D solutions of projects in corporations) and creation of environment supportive of research results commercialization and cooperation of all participants in research and educational institutions. When proposing operational programmes, one must above all consider the link between measure **B.2.1 Support of horizontal mobility** and measure **A.2.1 Support of implementing innovation of technologies, products and services** and **A.2.3 Support of R&D in enterprises** (e.g., cooperation of research workers and PhD students from R&D institutions and universities with businesses on their research and innovation activities). The link between measure **B.2.2 Implementation of R&D results** and the measures mentioned in priority **A.2** is also important (e.g., use of research and educational institutions equipment for research activities of businesses, implementation of results from public research and educational institutions in business sphere).

4.2.2.1. Measure A.2.1. Support of implementing innovation of technologies, products and services

Characteristics

The measure is focused on reinforcing innovation activities particular at small and medium-sized enterprises. Under this measure grants, subsidies, loans and guarantees will be provided for expenditures on innovation of products, technologies and services. Part of the measure will also be intellectual property protection (support of patent activities of SME related to implemented innovation activities, purchase of patents and know-how). This measure will also support increasing qualification of SME workers connected to realized R&D results and innovation activities.

Global objective

Global objective of the measure is strengthening and development of innovation activities of business entities especially small and medium-sized enterprises.



Principal operational objectives

- increasing competitiveness of businesses (especially SME),
- increase in business innovation activities (especially SME),
- increasing qualification of workers in businesses in relation to implementation of innovation, realized R&D, management of innovation, and implementation of innovative and more productive forms of corporate management.

Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should participate at implementing the measure at the level of managing body, intermediary, and final beneficiary. Financial institutions (Czech-Moravian Guarantee and Development Bank) should be involved in providing financial products to entrepreneurs. Institutions dealing with innovation infrastructure (e.g., Association of Innovative Entrepreneurship CR, Science and Technology Park Association CR, BIC, RDA), intellectual property protection (Industrial Property Office), and institutions supporting implementation of quality standards (Czech Society for Quality) and educational institutions should participate at implementing the measure.

Final recipients

- businesses (especially SME),
- innovative businesses and businesses taking part in realizing R&D results.

Key indicators of results

- innovated products, technologies and services (number),
- firms who innovated their products, technologies or services (number),
- allocated grants (including microgrants) for innovation support (number),
- loans (including microloans) provided on conducting innovation (number),
- guarantees provided on loans related to innovation expenditure (number),
- realized purchases of patents, licences, industrial designs and know-how for implementing innovation (number),
- graduates of professional courses and studies (number),
- established training programmes and courses for innovation education (number),
- firms' innovation expenditures (EIS-2005),
- sales of new to market products (EIS-2005),



- sales of new to firm products (EIS-2005),
- firms, which innovated their products, technologies or services in cooperation – number of (EIS-2005).

4.2.2.2. Measure A.2.2. Reducing energy intensity and using renewable energy resources in enterprises

Characteristics

The measure will support innovation projects leading to reducing energy intensity of processes related to production, transformation and distribution of energy, new technologies for processing energy materials, establishing combined production of energy and heat (cogeneration) and introducing production of electricity or heat from renewable energy resources.

Global objective

Global objective is to reduce energy intensity of the Czech economy by using innovation, advanced technologies and renewable energy resources.

Principal operational objectives

- reducing energy intensity of processes connected to energy production, transformation and distribution in businesses by means of innovation,
- implementing new technologies in utilisation of energy resources,
- implementing combined electricity and heat production,
- implementation of electricity production from renewable resources,
- reconstruction of current electricity and/or heat production equipment with the goal to utilize renewable resources,
- replacement of energy ineffective technologies and energy intensive technological equipment of industrial corporations,
- increasing utilization of and implementation of eco-innovations.

Institutions of the implementation structure

The Ministry of Industry and Trade CR, Investment and Business Development Agency CzechInvest, and Czech Energy Agency should stand as the managing body, intermediary, and final beneficiary. Technology transfer centres should participate at implementing the measure.



Final recipients

- businesses, especially SMEs,
- energy media manufacturers (SMEs).

Key indicators of results

- energy savings, result (GJ/year),
- energy made of renewable or secondary sources of energy (MW installed per year or MWh produced per year),
- installed energy units utilizing renewable resources (number).

4.2.2.3. Measure A.2.3. Support of research and development in enterprises

Characteristics

This measure is focused on developing research infrastructure in businesses (especially SME), facilitation of the implementation R&D results in practice, support of transfer of R&D results, and cooperation of businesses with research and educational institutions. The measure will support acquisition of assets related to realization of research and development, increase of R&D capacities, and renting research, manufacturing and office space for industrial R&D.

Global objective

Global objective of the measure is stimulation of research and development activities of businesses and support of implementation of applied and industrial research and development results in practice.

Principal operational objectives

- increase in number of research projects conducted in business entities,
- increase in private sector R&D expenditure,
- improvement of cooperation of private sector and R&D and educational institutions,
- growth in number of conducted transfers of R&D into practice,
- improving quality of business assets and equipment related to realization of R&D activities,
- improvement in availability of research, manufacturing and office space for applied and industrial R&D.



Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should act as the managing body, intermediary, and the final beneficiary. Organizations covering industrial research (Association of Research Organizations) and supporting technology transfer (technology transfer centres) should be involved in implementing the measure.

Final recipients

- businesses (especially innovative SME).

Key indicators of results

- new and newly equipped R&D sites in the business sector (number),
- research projects realized in practice (number),
- executed transfers of R&D results (number).

4.2.2.4. Measure A.2.4. Technology platforms

Characteristics

The measure is aimed at supporting foundation and initial development of technology platforms in perspective fields, and at support of connecting public and private sector in R&D. The measure will also support creation of financial tools related to foundation and initial development of technology platforms, linking national technology platforms in international scale, increasing qualification in research and innovation related to technology platforms operation and professional education in particular field.

Global objective

Global objective of the measure is to initiate and support foundation and early development of technology platforms in perspective technological fields including improvement of connection between public, private and financial sector in the area of entrepreneurship and R&D.

Principal operational objectives

- foundation and initial development of technology platforms in selected perspective fields,
- formation of financial tools supporting foundation and initial development of technology platforms,



- linking national technology platforms in international scale,
- increasing qualification in research and innovation related to technology platforms operation,
- increasing level of professional education in the field.

Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should stand as the managing body, intermediary, and final beneficiary. The following should be involved in implementing the measure: financial institutions (Czech-Moravian Guarantee and Development Bank), innovation infrastructure institutions (Association of Innovative Entrepreneurship CR, Science and Technology Park Association CR, technology transfer centres, BIC, RDA), institutions representing entrepreneurs (chambers of commerce, Confederation of Trade CR), umbrella organizations for research institutions (Association of Research Organizations), research organizations and universities.

Final recipients

- public and private research and educational institutions,
- enterprises,
- business and innovation infrastructure (science and technology parks, BIC, business incubators, technology transfer centres, counselling institutions, etc.),
- associations, trade and industry unions, economic chambers.

Key indicators of results

- technology platforms established (number),
- entities engaged in technology platforms (number),
- research projects found on grounds of technology platforms operation (number).



4.2.3. Priority A.3. Support of Establishment of New Firms

Aim and characteristics of the priority:

The priority “Support of Establishment of New Firms” is focused on several important aspects of foundation and initial development of new firms. The first measure of the priority is aimed at creation of financial tools for foundation and initial development of firms (especially pre-seed and seed capital funds), the second measure supports building and operation of infrastructure, which helps development of firms during the first stages of their existence by creating “non-market” environment. A separate measure is dedicated to foundation of spin-off firms from research and educational institutions.

Priority proposal rationale:

Situation in the CR

The main source of financing foundation and development of firms in the CR are bank loans. However, banks tend to avoid high-risk operations and business plans, for which are, among others, considered firms in initial stages of development (pre-seed and seed capital investments), and innovation activities and high-tech business plans during the first years of operation.

Public sources provide guarantees, loans and support in form of grant schemes. However, most guarantee programmes and small loans are not customized enough for specific projects (e.g., it turns out that there is a need to support sophisticated innovation project by additional services) and for risk investment conditions in innovation businesses. The venture capital market lags behind in the CR compared to the advanced countries; it is insufficiently developed and is relatively low in terms of the demand. Firms’ concerns related to capital investments resulting in loss or restriction of their influence on company’s operation also has a negative impact.

Although support for infrastructure development is included in current operational programmes, capacity and services offered in incubators generally do not correspond to expected requirements. In terms of services, for example, companies miss mediation of contacts with research institutions, support of technology transfer, financial counselling and advice aimed at intellectual property protection.

Compared to advanced countries, there is a relatively small number of innovation firms from high-tech sectors in the Czech Republic. This problem also concerns spin-off firms, which are found from public research and educational institutions. Unfavourable environment also plays an important role in this situation – it does not motivate research institutions and university workers to entrepreneurial activities based on exploitation of their research results. Foundation and development of spin-off firms also interferes with lack of disposable financial resources, available advisory services, and educational and training programmes.



Barriers identified in this sphere

The issue of firms' establishment was analyzed in detail in the study "Barriers to the Growth of Competitiveness of the Czech Republic" and the following most significant obstacles and problem areas were identified:

- lack of capital for foundation of firms and for their initial development,
- insufficient access to financial resources, particularly for start-ups,
- minimum investment and undeveloped Business Angels network, which is also related to absence of individuals, who dispose of financial capital needed and, at the same time, have experience in doing business in innovation firms,
- insufficient venture capital financing,
- absence of supporting programmes for founding spin-off firms at research and educational institutions,
- lack of quality business incubators that also provide quality complex business services,
- insufficient resources for financing business incubators operation.

Minimum investments of venture capital and capital for initial development are also related to unsuitable tax system (multiple taxation of venture capital funds) and legislative barriers (e.g., complex and lengthy processes of setting up new firms, lengthy bankruptcy proceedings).

Link to strategic documents of the EU and the CR

The priority "Support of Establishment of New Firms" is in compliance with basic strategic documents of the EU and major documents of the CR. Community Strategic Guidelines and Integrated Guidelines for Growth and Jobs suggest:

- to facilitate and support foundation and development of new businesses using different tools,
- to improve access to financial resources, primarily utilization of non-grant tools (e.g. venture capital, guarantee mechanisms, small loans to SMEs),
- to provide supportive services to businesses (esp. SMEs) to increase their competitiveness, including business incubators and related services,
- to promote entrepreneurial culture and formation of environment supporting small and medium-sized enterprises including providing relevant information and supporting services, which enhance foundation and development of new firms,
- to support foundation of spin-off firms from research and educational institutions (e.g. by increasing awareness, training and providing management and technology support to starting entrepreneurs).

Proposed activities are in compliance with the principal national documents. Support of non-grant tools, loans (including microloans) and guarantees is included in the National



Development Plan of the CR 2007-2013. National Innovation Policy of the CR for 2005-2010 proposes creation of support programme, which would make it possible to use private venture capital funds as well as European Investment Fund, or EU funds respectively, apart from public resources of the CR. The National Development Plan as well as the National Innovation Policy stress the need to support infrastructure, which would facilitate foundation of new firms, and the necessity to support foundation of spin-off firms at research and educational institutions.

Global objective of the priority:

Global objective of the priority is stimulation of new firms' foundation by creating appropriate financial tools and relevant infrastructure.

Specific objectives:

- simplification of foundation and development of firms by means of existing as well as newly formed financial tools,
- facilitation of foundation and development of firms by means of existing as well as newly established business incubators,
- stimulation of foundation and simplification of development of spin-off firms realizing results from public R&D.

Institutional and sector structure

- public administration institutions (e.g., Ministry of Industry and Trade, CzechInvest, its regional offices) – competency at the level of managing body, final beneficiary, intermediary, project formation initiator,
- financial institutions (e.g., Czech-Moravian Guarantee and Development Bank) – competency of final recipient/beneficiary, counselling,
- innovation infrastructure institutions (e.g., Association of Innovative Entrepreneurship CR, Science and Technology Park Association CR, technology transfer centres, business incubators, science and technology parks, BIC, RDA) – competency of final recipients/beneficiary, counselling, facilitation,
- universities – competency of final recipients/beneficiary, counselling,
- research organizations (public and private).

Key indicators of impacts and results

- share of small and medium-sized enterprises in GDP,
- increase in number of spin-offs (%),



- increase in value-added from implementation of R&D results at supported spin-off firms (%),
- growth of turnover in supported businesses (%),
- early-stage capital investment (EIS-2005),
- created jobs (number),
- success-rate of spin-off firms in the first years of existence.

Relation to other priorities and link to individual measures

All measures in the priority *A.3 Support of Establishment of New Firms* are aimed at foundation of firms. Therefore, it is necessary to ensure sufficient linkages of individual measures. This particularly concerns use of financial resources by firms in incubators, which are supported under measure *A.3.1 Financial tools for setting up and development of firms* (measure *A.3.2 Building infrastructure for start-ups*), and spin-off firms founded at research and educational institutions (measure *A.3.3 Spin-off*).

The priority and its measures have important links with priority *B.2 Cooperation of Public and Private Sector in Research and Development* and its measure *B.2.2 Implementation of research and development results*. In this measure, creation of spin-off firms is supported by formation of environment, which will motivate research workers to commercialization of research results including foundation of spin-off firms. In terms of establishment of spin-off firms, it is necessary to ensure and support sequence of the following actions:

- motivation of research workers to commercialization of research results including foundation of firms – measure *B.2.2 Implementation of research and development results*,
- support of pre-start phase of spin-off foundation (advising, feasibility study of research workers plans, commercial potential analysis of the idea, analyses of market, competition, etc.) – measure *B.2.2 Implementation of research and development results*,
- access to pre-start and start capital to facilitate foundation of a firm – measure *A.3.1 Financial tools for setting up and development of firms*,
- facilitation of spin-off firm's existence at a research or a educational institution from which it originates for a limited period of time (*B.2.2 Implementation of research and development results*), including utilization of R&D equipment and other infrastructure (measure *A.3.3 Spin-off*) and using relevant financial tools (*A.3.1 Financial tools for setting up and development of firms*),
- admission of a founded firm in an incubator and using advantageous services provided in an incubator including favourable lease of equipment of research and educational institutions (measure *A.3.2 Building infrastructure for start-ups*),
- facilitation of access to capital for development of spin-off firms (measure *A.3.1 Financial tools for setting up and development of firms*), preferential access of a firm



to STP after it leaves an incubator, maintaining relationship with research sites (measure *A.1.1 Development of entrepreneurial and innovation infrastructure*).

In terms of development of firms it also important to use adequate consulting services supported under measure *A.1.2 Development of services for entrepreneurs*.

4.2.3.1. Measure A.3.1. Financial tools for setting up and development of firms

Characteristics

The measure will focus on reinforcement of existing and formation of new financial tools for foundation and development of firms. It will support providing of small loans and state guarantees for bank loans, formation of new financial tools facilitating access to pre-seed and seed capital and creation of programme/fund of venture capital. The measure will also support formation of tools, which will help to increase effectiveness of infrastructure supporting establishment of firms. Part of the measure will support increasing business readiness for venture capital entry including increasing workers qualification.

Global objective

Global objective of the measure “Building infrastructure for start-ups” is facilitation of foundation and development of firms by means of existing as well as newly created financial tools.

Principal operational objectives

- improving SME access to small loans and to state guarantees for bank loans,
- formation of funds for microloans,
- creation of financial tools facilitating SME access to pre-seed and seed capital,
- creation of new programme/fund to facilitate access of businesses (particularly SMEs) to venture capital,
- increasing company readiness (particularly SMEs) for venture capital entry,
- increasing workers’ qualification in businesses (especially SMEs) related to venture capital entry.

Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should participate at implementing the measure at the level of managing body, intermediary, and final beneficiary. Financial institutions (Czech-Moravian Guarantee and Development Bank) should be involved in providing financial products to entrepreneurs.



Institutions dealing with innovation infrastructure (e.g., Association of Innovative Entrepreneurship CR, Science and Technology Park Association CR) should participate at implementing the measure.

Final recipients

- people interested in entrepreneurial activities (potential entrepreneurs),
- businesses, especially SMEs,
- employees of businesses.

Key indicators of results

- newly established firms (number),
- firms using funds for loans and microloans (number),
- firms utilizing pre-seed and seed capital funds (number),
- newly created programmes/funds of venture capital (number),
- venture capital investments to firms (investment value in CZK),
- early-stage capital investments to firms (investment value in CZK) – EIS-2005,
- workers trained in capital financing field (number).

4.2.3.2. Measure A.3.2. Building infrastructure for start-ups

Characteristics

The measure is aimed at support of foundation and operation of business incubators. It will support formation of financial tools for incubator establishment and operation, providing advantageous services to incubated firms, and securing active relationships of incubators with research institutions, universities, and businesses in the region. Part of the measure will also support increasing professional knowledge of workers of incubated firms and incubator employees. The measure will as well support formation of networks of venture capital providers and Business Angels.

Global objective

Global objective of the measure is facilitation of foundation and development of firms using existing as well as newly established business incubators.



Principal operational objectives

- creation of financial tools to support foundation and operation of incubators,
- arranging advantageous, better quality, and more complex services provided to incubated firms,
- monitoring and continuous evaluation of incubators operation and comparing them to the level of incubators abroad,
- linking business incubators with research institutions, universities and businesses in region,
- increasing professional knowledge of incubated firms' workers and workers handling incubator operations,
- establishment of venture capital providers networks and Business Angel networks, support of their association (e.g., professional).

Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should act as the managing body, intermediary, and final beneficiary. Institutions dealing with innovation infrastructure (e.g., Association of Innovative Entrepreneurship CR, Science and Technology Park Association CR, technology transfer centres, business incubators, science and technology parks, BIC, RDA) should be involved in implementing the measure.

Final recipients

- small and medium-sized enterprises,
- SME employees,
- people interested in entrepreneurial activities (potential entrepreneurs),
- founders of business incubators (non-profit organisations, entrepreneurs, regional administration, etc.),
- business incubators,
- business incubators' employees.

Key indicators of results

- supported incubators (number) and their success rate – according to the number of firms incubated and according to region,
- firms in business incubators (number) – according to industry and region,
- firms newly registered in incubators (number) – according to industry and region,



- firms, which successfully left incubators (number),
- projects supported by Business Angels venture capital providers' networks (number).

4.2.3.3. Measure A.3.3. Spin-off

Characteristics

The measure is aimed at formation and development of spin-off firms. The measure will provide subsidies for reimbursement of part of costs related to setting-up a firm and its start-up, modern production infrastructure, assistance services necessary for implementing R&D results into practice, etc. Part of the measure will also support education of workers of spin-offs in fields concerned.

Global objective

Global objective of this measure is establishing favourable conditions for foundation and development of spin-off firms realizing especially public R&D results in practice.

Principal operational objectives

- setting up new spin-off firms,
- effective development of spin-off firms during the first stages of existence,
- support for use of equipment for R&D, office space, information and communication technology, networks, databases, libraries and other facilities of universities and research institutions,
- improving access to new financial programmes (tools) for spin-offs (for example, pre-seed and seed capital funds),
- increasing qualification of spin-off firms' workers in relevant fields.

Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should act as the managing body, intermediary, and final beneficiary. Financial institutions (e.g., Czech-Moravian Guarantee and Development Bank), institutions dealing with innovation infrastructure (e.g., Association of Innovative Entrepreneurship CR, Science and Technology Park Association CR, technology transfer centres, BIC, RDA), institutions representing entrepreneurs (chambers of commerce, Confederation of Industry CR), umbrella organizations for research institutions (e.g., Association of Research Organizations), research organizations, and universities should be involved in implementing the measure.



Final recipients

- citizens from research or educational institutions first entering business,
- spin-off firms,
- research institutes, universities.

Key indicators of results

- spin-off firms found (number),
- supported spin-off firms in stage of their development (number),
- success of spin-off firms in first years of existence.



4.2.4. Priority A.4. Support of Entrepreneurial Environment

Aim and characteristics of the priority:

The priority “Support of Entrepreneurial Environment” is aimed at improving environment for entrepreneurial activities. The first measure will support formation and operation of regional clusters, the second measure is then aimed at improving environment for entrepreneurial activities.

Priority proposal rationale:

Situation in the CR

Cooperation of firms is quite low in the Czech Republic up to now, and their collaboration with research and educational organizations, financial institutions, and public administration bodies is poor as well. The share of cooperative and innovative small and medium-sized enterprises in the Czech Republic lags behind the EU average.

Several faults come to light also in institutional environment for businesses. Apart from a number of legislative insufficiencies (e.g., multiple taxation of venture capital funds, lengthy bankruptcy proceedings, non-transparent laws, and frequent amendments of laws and regulations, etc.), the relatively high administrative burden of entrepreneurs also has a negative impact.

Identified barriers

The study “Barriers to the Growth of Competitiveness of the Czech Republic” identified as one of the significant obstacles also insufficient cooperation between businesses and between businesses and research and educational institutions. This study also recommends to carry out certain modifications of the current Clusters programme, particularly in the following areas:

- consider change of certain constraining conditions of the Clusters programme (minimum number of participants, industry restrictions, etc.),
- reinforce action of the programme in human resources area (link on research institutions and universities), support increasing qualification of cluster workers,
- reinforce the programme in the sphere of linkage between research and industry, expand support to cluster participation in national and international networks.

This study also identified several institutional obstacles, such as:

- insufficient link of policies, conceptions or strategies for individual spheres of economy and society,
- unsatisfactory cooperation of public administration at central and regional level, insufficient development of human resources in public administration in relation to innovation,
- poor monitoring and evaluation of innovation environment in the CR.



Link to strategic documents of the EU and the CR

Community Strategic Guidelines and Integrated Guidelines for Growth and Jobs support reinforcement of cooperation between individual businesses and between businesses and public research/university institutions, and establishment of regional and transregional centres (poles) of excellence. Poles of excellence should form a point of contact for small and medium-sized enterprises involved in high technologies for cooperation with research and technology institutions.

Community Strategic Guidelines also recommend the member countries to significantly strengthen institutional capacity and institutional structure for elaboration and implementation of effective strategies within the frame of Cohesion Policy. Community Strategic Guidelines also recommend partnership of public and private sector as one of suitable tools for investment financing.

Support of cooperation of businesses is included in priority “Competitive business sector” in proposal of the National Development Plan of the CR 2007-2013. The National Cluster Strategy 2005-2008 proposes to use for clusters resources from the Ministry of Industry and Trade, Ministry of Regional Development, Ministry of Labour and Social Affairs and Czech regions. The National Innovation Policy proposes to adapt conditions of the “Clusters” programme with the aim to increase its attainability.

In its priority “Modernization of Public Administration”, the proposal of the National Development Plan of the CR 2007-2013 supports development of human resources in public administration, improvement of communication in public administration, improvement of communication in their relation to entrepreneurs and citizens, and using the principle of partnership.

Support of development of institutional environment for entrepreneurial activities is included in the National Innovation Policy in its objectives to “Create functional cooperation of public and private sector” and “Refine performance of public administration in research, development and innovation”. Support of development of institutional environment is also determined in the Strategy of Economic Growth in pillars Institutional Environment for Entrepreneurial Activities, and Research, Development and Innovation.

Global objective of the priority:

Global objective of the priority is to improve entrepreneurial environment and cooperation of businesses.

Specific objectives:

- support of business cooperation with the aim to increase growth of their economic performance,
- foundation and development of industrial poles of excellence,
- improvement of conditions for entrepreneurial activities,



- improving the quality of cooperation between state administration and the private sector.

Regional and sector structure:

- state administration bodies (e.g., Ministry of Industry and Trade, CzechInvest, regional offices of CzechInvest, Czech Statistical Office) – competency at the level of managing body, final beneficiary, intermediary, project creation initiator,
- institutes of local authorities (regions) – competency of final beneficiary, counselling, facilitation,
- innovation infrastructure institutions (e.g. Association of Innovative Entrepreneurship CR, Science and Technology Parks Association CR, technology transfer centres, business incubators, science and technology parks, BIC) – competency of final recipients/beneficiary, counselling, facilitation,
- universities – competency of final recipients/beneficiary, counselling,
- research organizations (public and private) – competency of final recipients/beneficiary, counselling,
- organizations covering research institutions (e.g., Association of Research Organizations) – competency of final recipient/beneficiary, counselling,
- institutions representing entrepreneurs (e.g., The Economic Chamber of the CR, regional economic chambers, Confederation of Industry of the CR) – competency of final beneficiary, counselling.

Key indicators of impacts and results

- growth of number of clusters (%),
- increase in number of clusters participating in international cooperation (%),
- increase in number of industrial poles of excellence (%),
- public administration partnership with private entities (number of entities).

Relation to other priorities and link to individual measures

Measure *A.4.1 Support of cooperation of enterprises* is aimed particularly at development of clusters and poles of excellence. Important businesses play main role in these groupings (e.g., in a region), around which rise groups formed by entrepreneurial entities and public research and educational institutions. On the contrary, measure *B.1.2 Centres and networks of excellence* in priority *B.1 Production and Transfer of Research and Development Findings* supposes that project initiator and proposer is a research or educational institution, and the main goal of these groupings should be creation of a “knowledge centre” at regional or transregional level.



Measure **A.4.2** *Development of institutional environment for entrepreneurial activities* focuses on developing entrepreneurial environment; therefore, many linkages to other measures can be found in this strategic area. When preparing programmes, it is necessary to consider particularly activities proposed in measure **B.1.4** *Targeted information and monitoring R&D and innovation environment* (e.g., activities aimed at monitoring environment, control of indicators, cooperation of public and private sector, etc.).

4.2.4.1. Measure A.4.1. Support of cooperation of enterprises

Characteristics

The measure is aimed at cooperation of businesses by developing industry clusters. The measure will provide subsidies to reimburse part of costs related to searching suitable firms for clusters, evaluation of feasibility and asset of a cluster, foundation and initial development of clusters. Part of the measure will also be integrating clusters to international networks, human resource development, and support of foundation and early development of industrial poles of excellence.

Global objective

Global objective of the measure “Support of cooperation of enterprises” is to increase economic growth and competitiveness of the economy by developing clusters at regional, national and international level.

Principal operational objectives

- formation of a financial tool for support of foundation and initial development of clusters,
- integrating clusters to national and international networks,
- improving linkages between research and industry,
- human resource development in connection to universities and research institutions, support of qualification increase of cluster workers (managers),
- support of foundation and development of industrial poles of excellence.

Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should participate at implementing the measure at the level of the managing body, intermediary, and final beneficiary. Institutions dealing with innovation infrastructure (e.g., Association of Innovative Entrepreneurship CR, Science and Technology Park Association CR, BIC), research and development (public and private research institutions), local administration bodies (regions), universities, and institutions representing entrepreneurs



(e.g., chambers of commerce, Confederation of Industry CR), should primarily be involved in implementing the measure.

Final recipients

- public administration bodies (regions, municipalities),
- public and private research and educational institutions,
- entrepreneurial entities,
- non-state non-profit organizations,
- advisory and consulting institutions.

Key indicators of results measure

- newly established clusters (number),
- clusters involved in national and international networks (number),
- education programmes for cluster workers (number),
- established industrial poles of excellence (number).

4.2.4.2. Measure A.4.2. Development of institutional environment for entrepreneurial activities

Characteristics

The measure is aimed at development of institutional environment for entrepreneurial activities in the Czech Republic. The measure supports improving the quality of public administration operation and its cooperation with the private sector, and monitoring and evaluation of innovation environment in the Czech Republic.

Global objective

Global objective of the measure “Development of institutional environment for entrepreneurial activities” is developing and improving the quality of institutional environment for doing business in the Czech Republic.

Principal operational objectives

- improvement of conditions for entrepreneurial activities,
- improving the quality of public administration operations and its cooperation with the private sector,



- development of monitoring and evaluation of innovation environment in the Czech Republic.

Institutions of the implementation structure

The Ministry of Industry and Trade CR and Investment and Business Development Agency CzechInvest should act at the level of the managing body, intermediary, and final beneficiary. Monitoring and evaluation of innovation environment could be provided by the Czech Statistical Office. Public administration institutions at all levels and educational institutions should be involved in implementing the measure.

Final recipients

- public administration bodies,
- counselling institutions,
- business entities.

Key indicators of results measure

- supported projects of collaboration of the public administration (at all levels) with non-governmental institutions and the private sector (number),
- supported projects of cooperation of the public administration at inter-regional and international level (number),
- educational programmes created (number),
- formation of a system of monitoring and evaluation of the innovation environment in the Czech Republic.



4.2.5. Priority B.1. Production and Transfer of Research and Development Findings

Aim and characteristics of the priority:

The priority “Production and Transfer of Research and Development Findings” is focused on development of R&D activities of research and educational institutions. The first measure supports expanding capacities for research and development, the second measure foundation and development of centres and networks of excellence, and the third measure is focused at increasing participation of Czech teams in international research projects and increasing international competitiveness of the research. The final measure is aimed at improving environment for research and development.

Priority proposal rationale:

Situation in the CR

In the long term, the CR records insufficient public and private sector investment in research, development and innovation. Compared to the EU advanced countries, there is also a considerably lower number of researchers in the CR.

The Czech Republic participates in international R&D collaboration by means of several bilateral and multilateral programmes. According to the contribution volume, financial resources obtained as well the number of projects, the EU framework programmes are the most significant for international cooperation of Czech research and development. Participation of Czech teams in these programmes is not, however, sufficient according to the number of participants as well as the volume of financial resources obtained.

Identified barriers

Analysis of research environment, which was part of the study “Barriers to the Growth of Competitiveness of the CR”, and other analyses proved a number of obstacles restraining the effectiveness of research and development in the CR. Among the most significant barriers and problem areas could be classed the following:

- insufficient and obsolete experimental and technological equipment of research and development sites,
- low number of researchers,
- lack of qualified researchers particularly in technical and science fields,
- low intensity of cooperation between research and industry,
- low number of publications, low number of citations of Czech publications in most scientific disciplines,



- a very low number of patents at EPO and USPTO.

There are several obstacles to improvement of participation of the CR at international research collaborations. In consequence, these restrain the possibility of wider utilization of research results for the benefit of national economic competitiveness. This especially concerns the following barriers:

- high cost of project preparation for European programmes,
- research institutions do not provide administrative and managerial base to their research teams (inadequate workload of research workers with duties that are not directly related to their creative research pursuits),
- lack of consultants who would effectively increase the likelihood of success during project preparation (the “art of project writing” is not covered),
- inexperience of research SMEs with using European funds for financing R&D and innovation,
- insufficient coordination between national and international research,
- there are no transparent and favourable sequences between national and European rules of project financing (e.g., problem of financing VAT related to costs of the 6th Framework Programme projects).

Several problems can be found in present institutional environment for research and development in the CR. Research effectiveness is negatively influenced by, for example:

- high rate of institutional financing, significant part (approximately 40%) of public funds for R&D is spent on basic research,
- little emphasis on innovation outputs of R&D,
- de-motivating compensation packages in research,
- insufficient system of research appraisal, no connection between evaluation of achieved results and distribution of financial resources.

Link to strategic documents of the EU and the CR

According to the Community Strategic Guidelines and Integrated Guidelines for Growth and Jobs and in relation to the renewed Lisbon Strategy, for developing R&D it is necessary to support, for example:

- increasing and improving investment to R&D,
- building and expanding capacity for research and development, and research infrastructure,
- exploitation of synergy of research institutions, public and private sector; support interaction among the participants,
- formation of centres and poles of excellence, and linkages of new firms to research and educational institutions,



- support regional, crossborder and international initiatives aimed at reinforcement of research cooperation and capacity,
- increase the number of quality researchers,
- increase the number of students of S&T disciplines.

Support of building research infrastructure is included in the National Policy of Research and Development of the CR for 2004-2008. One of the objectives should also be increasing the level of inter-branch as well as inter-departmental cooperation, cohesion of research with potential users of its results, success in international competition, effective use of unique costly devices and equipment, and young professionals opportunity to assert themselves. Reinforcement of competitiveness of the economy by developing R&D capacity including effective use of EU funds is embraced in priority “Support of R&D and innovation capacities” of the National Development Plan of the CR 2007-2013.

The Economic Growth Strategy recommends increasing participation of subjects from the CR in the 7th Framework Programme EU, and improving information and counselling services of sectoral and regional contact organizations. The National Research and Development Policy for years 2004-2008 also recommends strengthening information and counselling services for subjects applying for participation in the EU framework programmes.

Support of development of institutional environment is, among others, also determined in the Strategy of Economic Growth in the pillars Institutional Environment for Entrepreneurial Activities, and Research, Development and Innovation. The Pillar Research, Development and Innovation proposes improving the service of public administration in research, development and innovations.

Global objective of the priority:

Global objective of the priority is to stimulate R&D activities of research and educational institutions and to improve effectiveness of research and development in the CR including strengthening of its international competitiveness.

Specific objectives:

- expanding capacities for R&D,
- development of centres and networks of excellence,
- improving international R&D competitiveness,
- improvement of institutional environment for R&D in the CR.

Institutional and sector structure

- institutions of the state administration (Ministry of Education, Youth and Sports) – actions at the level of managing body, final beneficiary, intermediary, project creation initiator,



- institutions financing research projects (GACR),
- universities – competency of final recipients/beneficiary,
- research organizations (public and private), scientific companies – competency of final recipients/beneficiary,
- umbrella organizations for research organizations – competency of final recipient/beneficiary, counselling (e.g., Association of Research Organizations),
- innovation infrastructure institutions (e.g., Association of Innovative Entrepreneurship CR, Science and Technology Parks Association CR, technology transfer centres, BIC, science and technology parks, business incubators) – competency of final recipients/beneficiary, counselling, facilitation.

Key indicators of impacts and results

- increase in the number of R&D workers (%),
- increase in the number of students and PhD students participating in R&D activities (%),
- public R&D expenditure (EIS-2005),
- developing partnerships in R&D (number of entities involved in centres and networks of excellence),
- increase in the number of projects submitted by Czech teams to international R&D programmes (%),
- formation of a monitoring and appraisal system.

Relation to other priorities and link to individual measures

Measure ***B.1.1 Development of capacities for research and development*** provides support for expanding R&D capacities and infrastructure purely for research and educational institutions. Support for acquiring R&D infrastructure in the business sector is included in measure ***A.2.3 Support of research and development in enterprises***.

The goal of measure ***B.1.2 Centres and networks of excellence*** is to create centres and networks, which will - to a great extent - constitute centres of knowledge economy at regional as well as transregional level, where we can suppose a common use of R&D infrastructure by research institutions as well as the business sphere in the particular region.

Participation of Czech teams in international R&D projects will be supported in measure ***B.1.3 Support of participation in international research and development projects***. The support will be provided for project preparation and administration and it will be possible to use it by research and educational institutions as well as by SMEs.

Measure ***B.1.4 Targeted information and monitoring environment for research, development and innovation*** is related to measure ***A.4.2 Development of institutional***



environment for entrepreneurial activities. When proposing programmes, it is therefore necessary to consider these linkages (e.g., while monitoring indicators, conducting research and analyses, when preparing programmes of cooperation of public and private sector, etc.).

4.2.5.1. Measure B.1.1. Development of capacities for research and development

Characteristics

The measure is aimed at increasing research and development capacities. Supported areas will be particularly building, reconstruction and expansion of objects for R&D, and purchase/acquisition and appreciation of equipment for research and development activities. New jobs creation in R&D and participation of PhD and final-year-students to research activities will also be supported in relation to expanding R&D capacity.

Global objective

Global objective of the measure is to develop capacities in research and development including research, technology and other infrastructure.

Principal operational objectives

- development of capacities in research and development,
- new jobs creation in R&D,
- participation of students and PhD students in R&D.

Institutions of the implementation structure

The Ministry of Education, Youth and Sports should participate at implementing the measure at the level of managing body, intermediary as well as the final beneficiary. Institutions involved in research and development (public and private research institutions), institutions covering research organizations (e.g., Association of Research Organizations), and universities should participate at implementing the measure.

Final recipients

- public and private universities,
- public and private research sites.

Key indicators of results

- newly established/reconstructed R&D capacities (number, sq. m),



- students and PhD students involved in R&D activities related to supported projects (number),
- to consider monitoring results of newly established R&D capacities (e.g., number of patent applications and number of publications).

4.2.5.2. Measure B.1.2. Centres and networks of excellence

Characteristics

The measure is focused on supporting foundation and operation of centres of excellence, and creating networks of significant R&D sites, which will constitute knowledge economy centres at regional, transregional and national level.

Global objective

Global objective of this measure is to support creation and operation of centres and networks of excellence in perspective technological industries with high growth potential, and to initiate and support long-term cooperation between the academic sphere and the business sector.

Principal operational objectives

- foundation and development of centres and networks of excellence,
- development of research and development capacities and region's activities, and transfer of new research findings into practice,
- establishing long-term and effective linkages between academic sphere, business sector and public administration at regional level,
- internationalization of centres and networks of excellence, and establishment of effective linkages of centres and networks of excellence with similar institutions abroad.

Institutions of the implementation structure

The Ministry of Education, Youth and Sports should participate at implementing the measure at the level of managing body, intermediary as well as the final beneficiary. Institutions involved in research and development (public and private research institutions), science communities, universities, and institutions covering research organizations (e.g., Association of Research Organizations) should take part at implementing the measure.

Final recipients

- public universities and research institutes,



- private universities and research institutes,
- important companies with activities in research and development.

Key indicators of results

- newly established centres and networks (number),
- public research and educational institutions engaged in centres and networks (number),
- business entities engaged in centres and networks (number).

4.2.5.3. Measure B.1.3. Support of participation in international research and development projects

Characteristics

The measure is aimed at increasing participation of Czech research teams in international projects. Support will be provided for preparation of international projects and acquiring well-timed and comprehensive information necessary for preparation of quality projects. Synergy of resources for participation in international projects will also be supported (e.g., co-financing of research projects under the 7th Framework Programme from the Structural funds).

Global objective

Global objective of this measure is to improve participation of Czech teams in international R&D programmes and to increase international competitiveness of Czech research and development.

Principal operational objectives

- improvement and expansion of activities of organizations, which provide information support for participation at international research programmes (e.g., EU framework programmes),
- support of preparation and participation of Czech teams in international projects,
- co-financing of participation of Czech subjects at European research programmes.



Institutions of the implementation structure

The Ministry of Education, Youth and Sports should participate at implementing the measure at the level of managing body, intermediary as well as the final beneficiary. Institutions covering research organizations and universities should take part at implementing the measure.

Final recipients

- organizations focused on providing information and support of participation in international research programmes (particularly the EU framework programmes),
- counselling organizations,
- research and educational institutions,
- SMEs.

Key indicators of results

- international research projects co-financed from EU funds (number),
- R&D projects submitted by Czech teams to international R&D programmes (e.g., 7th FP, Eureka, COST, and others) – number,
- Regional Contact Organizations, Sector Contact Organizations and other organizations providing support for participation of Czech teams in international projects – number,
- R&D projects, in which the preparation for international programmes was supported (particularly 7th FP EU) – number.

4.2.5.4. Measure B.1.4. Targeted information and monitoring environment for research, development and innovation

Characteristics

The measure is aimed at improving environment for research and development in the CR. Providing targeted information about research results for specific interested parties, and monitoring and evaluation of research and development environment will be supported.

Global objective

Global objective of this measure is to form environment, which will stimulate activities of research and educational organizations and create conditions for successful implementation of research results in practice.



Principal operational objectives

- statistical monitoring and evaluation of research environment, particularly monitoring the European Innovation Scoreboard and the TrendChart indicators, extension of monitoring to regional level,
- continuous monitoring and appraisal of research programmes,
- conducting targeted researches and analyses focused on the situation and trends in research, development and innovation,
- international benchmarking of the CR in areas of research, development and innovation,
- creating a database of R&D results suitable for commercialization orientated at relevant target groups,
- providing information and promotion of R&D on a regional and national scale,
- cooperation of public administration and the research sector in R&D.

Institutions of the implementation structure

The Ministry of Education, Youth and Sports of the CR should act during implementation of the measure at the level of managing body, intermediary as well as the final beneficiary. Institutions providing financial support for research and development (GACR), Science and Technology Parks Association CR, technology transfer centres, universities and research organizations should be involved in implementing the measure.

Final recipients

- state administration bodies,
- research and educational institutions,
- counselling institutions, business entities.

Key indicators of results

- programmes of R&D monitoring and appraisal (number),
- programmes of public sector and R&D partnerships (number),
- programmes aimed at providing targeted information, promotion and supply of R&D results available for commercialization (number).



4.2.6. Priority B.2. Cooperation of Public and Private Sector in Research, Development and Innovation

Aim and characteristics of the priority:

The priority “Cooperation of Public and Private Sector in Research, Development and Innovation” supports activities related to implementation and commercialization of results of research and development arisen at public research and educational institutions, and horizontal mobility of research and professional workers between the spheres of research, education and business.

Priority proposal rationale:

Situation in the CR

A serious deficiency of research and development in the CR is the insufficient linkage and cooperation of the business sphere with research and educational institutions, which hampers the effective transfer of research and development results into practice and their commercialization. In advanced countries R&D findings are often transferred into practice by spin-off firms founded at research and educational institutions. However, all statistical data show that a minimum number of these firms are founded in the CR.

Another serious problem of the Czech knowledge economy is the lack of research workers and qualified professionals in the business sector, which limits the research and innovation activities of Czech businesses. One of the causes of this situation is also insufficiently developed horizontal mobility of research workers between academic sites and entrepreneurial entities. The mobility of research workers, university teachers, students and professionals between the academic sphere and the business sector helps to remove obstacles between these innovation process participants.

Identified barriers

The study “Barriers to the Growth of Competitiveness of the CR“ identified several obstacles, which hinder commercialization of public research results. Among the most significant barriers and problem spheres could be included, for example, the following:

- low interest of research, education as well as business sphere in mutual collaboration,
- insufficient demand of Czech firms for research results,
- research institutions do not cooperate in accordance with requirements of businesses or do not conduct useful research from the businesses’ perspective,
- in some cases – too high price of services of research organizations,
- lack of technology transfer agencies or their insufficient services,
- institutional culture orientated mainly on academic research.



Furthermore, negative impact in terms of spin-off firm foundation shows in the following:

- absence of programmes supporting foundation of spin-off firms from research and education institutions,
- lack of capital for foundation of spin-off firms and their initial development,
- insufficient counselling services and absence of relevant educational and training programmes,
- low motivation of research workers, teachers and students to start their own business.

Link to strategic documents of the EU and the CR

According to the Community Strategic Guidelines and Integrated Guidelines for Growth and Jobs, in order to increase cooperation of research and educational institutions with the business sphere and to implement research results in practice, it is necessary to:

- increase and make more effective public R&D expenditure with the aim to improve connection between the public research and the private sector,
- reinforce cooperation of businesses with public research and educational institutions,
- support transfer of knowledge,
- support mobility of researchers,
- support foundation and development of new innovative businesses including spin-off firms (e.g., provide information and supporting services, reinforce entrepreneurial knowledge),
- support link of new firms to R&D institutions.

Assuring horizontal mobility of research/university institutions and innovative businesses is included in the specific objectives of the National Development Plan CR 2007-2013 as well as in a number of other national documents (e.g., National Innovation Policy for 2005-2010, National Research and Development Policy for the Years 2004-2008, and Economic Growth Strategy).

Strengthening competitiveness of the Czech economy by reinforcing R&D and innovation capacities in relation to the business sphere and forming conditions for cooperation between educational, research institutions and businesses is the goal of the priority “Support of R&D and Innovation Capacities” of the National Development Plan CR 2007-2013. Support for commercialization of research and development results and foundation of spin-off firms from research and educational institutions is included in all important strategic document of the CR – in the Economic Growth Strategy, the National Development Plan of the CR 2007-2013, the National Research and Development Policy for the Years 2004-2008 as well as the National Innovation Policy for 2005-2010.



Global objective of the priority:

Global objective of the priority is to stimulate cooperation of the public and the private sector in research, development and innovation, and to commercialize research and development results.

Specific objectives:

- improving horizontal mobility of researchers and professionals,
- implementation and commercialization of research and development results in practice, and formation of environment supportive to foundation of spin-offs.

Institutional and sector structure

- state administration institutions (the Ministry of Education, Youth and Sports) – competency at the level of managing body, final beneficiary, intermediary, project creation initiator,
- universities – competency of final recipients/beneficiary,
- research organizations (public and private), science communities – competency of final recipients/beneficiary, counselling,
- umbrella organizations for research institutions (e.g., Association of Research Organizations) – competency of final recipient/beneficiary, counselling,
- innovation infrastructure institutions (e.g., Association of Innovative Entrepreneurship CR, Science and Technology Parks Association CR, technology transfer centres, BIC, science and technology parks, business incubators) – competency of final recipients/beneficiary, counselling, facilitation.

Key indicators of impacts and results

- volume of research activities of universities, which were financed by the private sector (EIS-2005),
- increase in horizontal mobility of R&D workers (%),
- increase in the number of spin-off firms (%).

Relation to other priorities and link to individual measures

Measure **B.2.1 Support of horizontal mobility** supports mobility of researchers and PhD students. From this point of view, a link to measure **C.1.3 Prevention of graduate unemployment** is evident (e.g., formation of linkages of educational institutions with potential employers of PhD students and graduates, creation of joint projects of businesses with R&D and educational institutions). Important connection are also those with measures **A.2.1**



Support of implementing innovation of technologies, products and services and A.2.3 Support of research and development in enterprises (realization of joint projects of firms and public research and educational institutions in areas of R&D and implementation of innovation, commercialization of research results, etc.).

Measure **B.2.2 Implementation of research and development results** supports implementation of R&D results and creation of environment in public research and educational institutions, which will support commercialization of research results and foundation of spin-off firms (e.g., counselling leading to commercialization of R&D results and foundation of firms, education programmes for workers and students, cooperation of research and educational institutions at developing spin-off firms, etc.). In terms of commercialization of research results, transfer of findings into practice, and cooperation of research and educational institutions with the business sector in R&D, it is necessary to ensure the follow-up between this measure and several other measures in priorities *A.2 Support of R&D and Innovation in Industry and Enterprises* and *A.3 Support of Establishment of New Firms*. This concerns particularly the following measures:

- *A.2.3 Support of research and development in enterprises* – cooperation of R&D and educational institutions at R&D activities of the business sector, transfer of research findings, providing support to businesses for utilization of R&D infrastructure in research and educational institutions, etc.
- *A.3.1 Financial tools for foundation and setting up and development of firms* – access of emerging spin-off firms to capital funds,
- *A.3.2 Building infrastructure for start-ups* – placement of founded firms to incubators, using advantageous services,
- *A.3.3 Spin-off* – providing support for foundation of a spin-off firm, early development of a spin-off at research or educational institution, utilizing R&D equipment and other infrastructure at schools and research institutions, etc.

Questions of linkages between measures related to establishment of spin-off firms are analyzed in more detail in the description of priority *A.3 Support of Establishment of New Firms*.

4.2.6.1. Measure B.2.1. Support of horizontal mobility

Characteristics

The measure will support horizontal mobility of R&D workers and PhD students between the research and educational institutions and the business sphere. Part of the measure supports joint R&D projects of academic sites and companies, and ensuring special study programmes at universities target-oriented on the application of R&D results in commercial practice. A specific part of the measure supports horizontal mobility of young research workers and PhD students who become employees of small and medium-sized enterprises.



Global objective

Global objective of the measure is to stimulate cooperation of R&D and educational institutions with the business sector, focusing on the horizontal mobility of R&D workers and PhD students.

Principal operational objectives

- development of horizontal mobility of researchers and PhD students,
- increasing cooperation of R&D institutions, universities and firms in research and development, creation of common projects including horizontal mobility of the workers,
- development of special study programmes at universities targeted at application of R&D results in practice (cooperation with professionals from the practice).

Institutions of the implementation structure

The Ministry of Education, Youth and Sports should participate at implementing the measure at the level of managing body, intermediary and final beneficiary. Institutions dealing with research and development (public and private research institutions), umbrella organizations for research institutions (e.g., Association of Research Organizations), and universities should take part at implementing this measure.

Final recipients

- public and private universities,
- public and private research institutions,
- small and medium-sized enterprises.

Key indicators of results

- R&D workers involved in horizontal mobility (number),
- PhD students involved in horizontal mobility (number),
- businesses using horizontal mobility (number).

4.2.6.2. Measure B.2.2. Implementation of research and development results

Characteristics

The measure focuses on creating favourable conditions in research and educational institutions for commercialization of research results and for foundation and start-up of spin-



off firms. The measure will also support increasing entrepreneurial skills of researchers, university teachers and students.

Global objective

Global objective of the measure is to improve realization of research and development results in practice and to create favourable conditions for establishment of spin-offs at educational and research institutions.

Principal operational objectives

- formation of favourable conditions at universities and research institutions for commercialization of R&D results and foundation and start-up of spin-off firms,
- cooperation of research and educational institutions at developing spin-off firms in the first phases of their existence (utilization of R&D and other infrastructure),
- counselling (internal) leading to commercialization of R&D results and establishment of spin-off firms (analysis of commercial potential of an invention, market analysis, feasibility studies, etc.),
- establishment of educational and training programmes for students and researchers, which would be aimed at increasing entrepreneurial skills, intellectual property protection, commercialization of R&D results, foundation of spin-off firms, etc.,
- support of innovation in non-industrial sectors of the economy (for example, health care, education, culture, finance) including activities in the business sector.

Institutions of the implementation structure

The Ministry of Education, Youth and Sports should act at the level of managing body, intermediary and final beneficiary. Institutions dealing with research (public and private research institutions), universities, umbrella organizations for research institutions (e.g., Association of Research Organizations), and institutions dealing with intellectual property (Industrial Property Office) should take part at implementing this measure.

Final recipients

- public and private universities,
- public and private research institutions.

Key indicators of results

- programmes of universities and research institutions for support of establishment of spin-offs (number),
- established spin-off firms (number),



- educational programmes at universities focused on increasing entrepreneurial skills of students (number),
- educational programmes focused on doing business and increasing entrepreneurial skills of workers at universities and research institutions (number).



4.2.7. Priority C.1. Development of Life-Long Learning

Aim and characteristics of the priority:

Priority “Development of Life-Long Learning” addresses in a complex fashion the issues of life-long learning. The first measure of this priority focuses on the sphere of the implementation study programmes responding to the needs of the labour market; the second measure is concerned with assuring quality in education (especially by increasing qualification of the teaching staff or improving equipment of training facilities); the third measure focuses on preventing graduate unemployment; the fourth measure addresses the issues of improving education of persons disadvantaged in terms of health and socio-cultural position in a knowledge economy; and the fifth is concerned with the development of further professional education.

The changing requirements of the labour market require schools to prepare and implement educational programmes focusing on developing key skills, supporting the employability and flexibility of graduates. Therefore, special emphasis will be put on improving existing study programmes, creating new ones in order to ensure better assertion of graduates on the labour market, on increasing information literacy and supporting civic, inter-cultural and environmental education. Focus on better quality initial education will be supplemented with setting particular objectives in the spheres of further professional education and integration of persons disadvantaged in terms of health and socio-cultural position into the education system in the CR.

Priority proposal rationale:

Situation in the CR

In connection to the situation in the Czech Republic, it is necessary to support creation of a new system of study programmes, which will make it possible to reflect in a specific educational programme both the goals of the nation-wide policy and the education plans and requirements based on the specific environment of social partners of a school and its region. It is also necessary to co-ordinate, at the school level, advisory services focused on supporting career decisions and orientation on the labour market. More attention should also be paid to educational, methodological, and information support of teachers. At the same time, there is not harmonization of work of schools, educational and psychological counselling, and the labour offices in order to create a complex, complementary, and effective system of services for career consulting, which will address every individual facing a choice of profession.

In this programming period, the Czech Republic should especially focus on increasing the quality of pedagogical staff and on innovative approach in formulating study materials and background documents. Meeting these goals should lead to greater attractiveness of education for pupils, students, and provide a better connection to the ever-increasing demands of the globalising labour market.



Unemployment among graduates of tertiary education in the European Union countries is reaching significant proportions and represents a major problem in a number of countries. In the Czech Republic, too, unemployment of tertiary education graduates is becoming a serious problem. A great shortcoming of the Czech tertiary education is, in many fields, only a small or no connection to practice and the labour market. Companies often lack readiness to address practical problems by graduates. Graduates of natural sciences or technical programmes lack knowledge of industrial right protection, and their business thinking is not supported and developed. The scope of existing work experience in companies and internships of university students is insufficient, and in certain fields, the possibility of practice and internships in companies are absent altogether. The application of graduates on the labour market is not systematically monitored and information about graduates' assertion is not available to university applicants.

In the Czech Republic, we still cannot speak about the full integration of persons disadvantaged socially, culturally, and in terms of health. The integration starts with new approaches to education, which lead to their fuller integration into society and better application on the labour market. Improving conditions and greater opportunities for education of children, youth, and adults with special educational needs are essential. Professional studies on this topic illustrate that further education of pedagogic workers, preparation of teaching and information materials, organisation of seminars for parents, and similar activities help to improve situation of these individuals in several countries. Furthermore, the support should be focused on programmes of re-education and education of children and young people to whom institutional education has been ordered, programmes of social adaptation of children before completing institutional education, educational and behavioural programmes for various types of facilities of institutional or protective education, etc.

Compared to EU countries, the Czech Republic lacks educational and training centres for adults, which would provide generally recognised qualification to all adult applicants who have completed their school education, entered the labour market and for various reasons need or require further or specialised qualification during their lives. The quality and greater availability of further professional education will be enhanced by the development of further education support services, especially information and consulting services which would facilitate orientation in the offer particularly to those who need it most, i.e., to people with low qualification or another disadvantage on the labour market.

Identified barriers

The problem of life-long learning was described with the following barriers in the first programming period 2004-2006 in Operational Programme Human Resource Development (OP HRD):

Despite of the development of life-long learning in the nineties, it does not contribute enough to development of human resource qualification and flexibility in the CR. The sector of further education lacks an integrated concept and the essential legislative and institutional conditions, which would regulate and encourage its development. Nevertheless, there are



areas, like the specialized education of the state and local administration officers, for example, in which the concept and essential legislative and institutional conditions are not missing.

Life-long learning is dealing with problems, which can be described as insufficient scale of financial resources provided on its support, and small participation of the state in life-long learning. There is no system of recognized qualifications; certification of further education is not equal to the certification of the education system. The offer of education courses is very wide, but of different quality. Another subset of problems is the fact that the education and development of those providing further education – lecturers, consultants, teachers, management and methodology workers in education – is not effectively supported.

Link to strategic documents of the EU and the CR

Priority “Development of Life-Long Learning” as well as the individual measures are in accordance with the main strategic documents of the EU and the major documents of the CR. The Community Strategic Guidelines and Integrated Guidelines for Growth and Jobs recommend:

- to support access to work for all age groups and to increase the level of productivity and quality of work by investing in the human capital, to prepare effective national strategy of life-long learning for the benefit of individuals, businesses, economy as well as the society,
- to adapt education systems and professional training to new qualification requirements,
- to support coherent and complex life-long learning strategies with a special emphasis on skills, which are need in an economy based on knowledge, including support of building partnerships between regions and cities in the sphere of education and vocational training with the objective to facilitate exchange of experience and approved methods. Special attention should be paid to satisfying the needs of disadvantaged groups,
- to support development and implementation of reforms of the education and professional training systems,
- to reinforce relationships between universities, research and technology centres, and businesses, particularly by means of connecting their networks and joint activities.

The question of human resources is included in the National Innovation Policy of the CR for 2005-2010 under the objective “To provide human resources for innovation”. This document, among others, proposes to create programmes for increasing the number of science and technical disciplines graduates.

The National Research and Development Policy for Years 2004-2008 recommends to increase interest of the youth in R&D at elementary and middle (high) schools and gain more students for research (particularly by increasing financial motivation and facilitating student mobility). At the same time, the document proposes to ensure that final year students of



technical, science and economic universities get the basic information about intellectual property protection and about technology transfer.

Activities proposed in this priority are in accordance with the Economic Growth Strategy and the National Development Plan CR 2007-2013, which propose and recommend, for example, to support modernization of education systems according to the labour market conditions, development of infrastructure for education, increase in quality and effectiveness of the education system, facilitation of access to education to all social groups, reinforcement of linkages of educational institutions with research and the business sphere, reinforcing the adaptability of teachers to changes in the education system, increasing professional qualification by life-long learning, spreading the offer of further professional education programmes.

Global objective of the priority:

The global objective of the priority is to increase the qualification of the population by developing life-long learning which fully reflects the needs of the labour market.

Specific objectives:

- support the establishment of study programmes responding to the needs of the labour market into every-day school practice,
- improvement in the quality of education at all types of schools,
- preparation of graduates and students of the last year before graduation to their practical application,
- improving the level of education of persons disadvantaged in terms of health and socio-cultural position in a knowledge economy,
- a functioning system of further professional education corresponding to the needs of a knowledge economy.

Institutional and sector structure

- institutions of the state administration (the Ministry of Education, Youth and Sports) – competency at the level of managing body, final beneficiary, intermediary, project creation initiator,
- elementary and middle/high schools, and universities – competency of final recipients/beneficiary,
- research organizations (public and private) – competency of final recipients/beneficiary, counselling,
- institutions covering research organizations (Association of Research Organizations) – competency of final recipient/beneficiary, counselling,



- institutions providing social services (nongovernmental non-profit organizations) – competency of final recipient/beneficiary.

Key indicators of impacts and results

- decrease in the graduate unemployment rate (%),
- increasing teachers' (pedagogic workers) qualification (number of educated teachers),
- decrease in the unemployment rate of socio-culturally and health-wise disadvantaged groups (%),
- new jobs created (number),
- number of graduates in science disciplines (EIS-2005),
- population with finished university (tertiary) education (EIS-2005),
- number of young people with completed education at least at the secondary level (EIS-2005),
- participation in life-long education (EIS-2005),
- students in newly created/innovated programmes of further education (number),
- formation of a system of verification and recognition of qualifications.

Relation to other priorities and link to individual measures

In this priority, the measures are concerned with development of life-long learning and improvement of the education systems in relation to ensuring a sufficient number of quality professionals. For this reason it is essential to ensure sufficient interconnection between individual measures; this especially applies to the follow-up to the original education through further professional education, including integration of disadvantaged persons in terms of health and socio-cultural position, and to the improvement in linking life-long learning to the needs of the labour market.

There is a particularly important link between this priority and measure *C.2.1 Support of tertiary education for research, development and innovation*, which is related to life-long learning in the sphere of R&D.

Also links to measures in the strategic areas Entrepreneurship and Research and Development are important. Although increasing qualification in relevant activities is supported in these measures, under measure *C.1.5 Development of further professional education* it is important to create programmes in accordance with activities supported especially in the following measures:

- *A.1.3 Support of intellectual property rights,*
- *A.1.4 Support of international competitiveness of enterprises,*
- *A.2.1 Support of implementing innovation of technologies, products and services,*



- *A.2.2 Reducing energy intensity and using renewable energy resources in enterprises,*
- *A.2.3 Support of research and development in enterprises,*
- *A.3.1 Financial tools for setting up and development of firms,*
- *A.3.3 Spin-off,*
- *B.2.2 Implementation of research and development results.*

4.2.7.1. Measure C.1.1: Introduction of study programmes reflecting the needs of the labour market into every-day school practice

Characteristics

The measure is to motivate individuals to life-long learning, which normally enhances their options in finding assertion in the labour market. The measure focuses both on helping individuals in introducing study programmes into every-day school practice, and on helping institutions which create and implement the study programmes.

Global objective

Global objective of the measure is to support the establishment of study programmes responding to the needs of the labour market into every-day school practice.

Principal operational objectives

- modernisation of study programmes focused on development of key competencies,
- support of education in technical and natural sciences,
- support of increasing pupils' creativity at all school levels,
- support of increasing practical knowledge of graduates and directed towards more entrepreneurial drive of graduates/students,
- support of counselling activities at schools,
- increasing R&D awareness at elementary and secondary (high) schools.

Institutions of the implementation structure

The Ministry of Education, Youth and Sports should act as the managing body, intermediary and the final beneficiary. Universities, secondary as well as elementary schools should participate at implementing the measure.



Final recipients

- elementary, secondary and non-university type tertiary education institutions,
- schooling institutions (facilities for execution of institutional and protective education, after-school care services, clubs),
- organizations directly managed by the Ministry of Education, Youth and Sports,
- nongovernmental non-profit organizations,
- organizations of social partners.

Key indicators of results

- supported organisations creating or introducing new study programmes (number),
- supported persons in organisations creating or introducing new study programmes (number),
- pupils and students supported (number),
- newly created study programmes (number).

4.2.7.2. Measure C.1.2 Assuring quality in education

Characteristics

The measure focuses on ensuring quality education at all types of schools. That leads to a range of supported activities of individuals and institutions systemically concerned with education in the Czech Republic.

The principal measure for improving the situation in education consists especially in increasing the education level of pedagogical staff and in an innovative approach in elaborating/compiling study materials and background documents. Meeting these goals should in the future lead to greater attractiveness of education for pupils, students, and applicants. Education should address the ever-increasing demands of the globalising labour market.

Global objective:

Global objective of this measure is to improve the quality of education at all types of schools.

Principal operational objectives

- increasing qualification of teachers,
- creation of new study materials,
- establishment of new training facilities focused on science and technical fields, the needs of regions, lacking qualifications, etc.



- improvement of technical equipment, laboratories, workshops, didactic techniques, especially in connection with supporting creativity and self-activity of students.

Institutions of the implementation structure

The Ministry of Education, Youth and Sports should participate at implementing the measure at the level of managing body, intermediary as well as the final beneficiary. Universities, secondary (high) and elementary schools should be involved in implementing the measure.

Final recipients

- schooling institutions (facilities for execution of institutional and protective education, after-school care services, clubs),
- organizations directly managed by the Ministry of Education, Youth and Sports,
- nongovernmental non-profit organizations,
- organizations of social partners.

Key indicators of results

- newly established study programmes (number),
- supported students (number),
- supported teacher (number).

4.2.7.3. Measure C.1.3. Prevention of graduate unemployment – effectiveness and quality of tertiary education

Characteristics

The measure focuses on creating programmes for the prevention of unemployment of tertiary education graduates. The measure will support programmes preparing university graduates for their assertion in practice, providing specialised practical experience, and promoting possibilities of assertion of graduates. The measure will also support partnerships between schools and companies designed to create education programmes and courses for graduates.

Global objective

The global objective of the measure is to prepare graduates and students of the last year of university for practical application.



Principal operational objectives

- preparation of tertiary education graduates for practice, providing specialised practice,
- partnerships of schools and businesses and creation of joint programmes to prepare graduates for assertion in practice, assuring professional work experience and internships in businesses,
- organization of presentation of companies at universities, job opportunity fairs,
- supplementing education of students of the last year before graduation with business studies and assertion in practice,
- creation and operation of a monitoring system which will track the application of graduates of specific university fields and enable university applicants to get an idea about utilization possibilities.

Institutions of the implementation structure

The Ministry of Education, Youth and Sports should function in the measure implementation as the managing body, intermediary as well as the final beneficiary. Universities would also be involved in the implementation of the measure.

Final recipients

- public and private tertiary education institutions.

Key indicators of results

- university programmes preparing graduates for their assertion in practice (number),
- programmes providing specialized work experience and internships (number),
- company presentation days and job opportunity fairs (number),
- joint programmes of universities and businesses training students and graduates for assertion in specific companies (number),
- creation of a monitoring system which would track the application of graduates in individual university fields.

4.2.7.4. Measure C.1.4 Improving education of persons disadvantaged in terms of health and socio-cultural position in the sphere of knowledge economy

Characteristics

The measure focuses on improving the education of persons disadvantaged in terms of health and socio-cultural position in knowledge economy through introduction of innovative



methods and approaches to this issue. In part, it ties with the objectives of measure 3.1 OP HRD.

Global objective

Global objective of the measure is improving the level of education of persons disadvantaged in terms of health and socio-cultural position in a knowledge economy.

Principal operational objectives

- support of sheltered workshops,
- acquiring special didactic equipment, building specially designed school laboratories,
- supplementary training of teachers for persons disadvantaged in terms of health or cultural or social position,
- improvement of conditions for educating students with special educational needs,
- education of persons disadvantaged in terms of health in relation to their possible application in R&D and innovation.

Institutions of the implementation structure

The Ministry of Education, Youth and Sports should participate at implementing the measure at the level of managing body, intermediary as well as the final beneficiary. Universities, secondary and elementary schools, and nongovernmental non-profit organizations involved in social services should participate at implementation of the measure.

Final recipients

- schooling institutions (facilities for exercising institutional and protective education, after-school care service, clubs),
- organisations directly managed by the Ministry of Education, Youth and Sports,
- NGOs,
- organisations of social partners.

Key indicators of results

- newly introduced study programmes for disadvantaged persons (number),
- disadvantaged people supported (number),
- supported teachers (number).



4.2.7.5. Measure C.1.5 Development of further professional education

Characteristics

The measure will focus on the quality and greater availability of further professional education, which will be enhanced under this measure by development of supporting services, especially information and consulting services, which would facilitate orientation in the offer, particularly to people with low qualification or another disadvantage on the labour market.

Global objective

Global objective of the measure is a functioning system of further professional education corresponding to the needs of a knowledge economy.

Principal operational objectives

- improving access to information, orientation in the offer and the quality of further professional education services; research and development of adult education methodology,
- development of the supply of further professional education (new programmes, distance learning, e-learning, better anticipation of employers' needs),
- increasing professional and pedagogical competencies of lecturers, consultants, teachers, methodological workers and managers in the sphere of further professional education.

Institutions of the implementation structure

- state administration institutions (Ministry of Education, Youth and Sports, Ministry of Labour and Social Affairs, labour offices) – competency at the level of managing body, final beneficiary, intermediary, project creation initiator, counselling,
- universities, education institutions – competency of final recipients/beneficiary,
- institutions representing entrepreneurs (e.g., The Economic Chamber of the CR, regional economic chambers, Confederation of Industry of the CR) – competency of final recipients/beneficiary, counselling,
- public administration institutions (regions) – competency of final beneficiary, project creation initiators, counselling.

Final recipients

- schools and institutions of adult education,
- R&D institutions,
- state and local administration offices,



- employers and unions,
- professional associations and clubs,
- employers representatives.

Key indicators of results

- newly established/innovated further education products (number),
- newly established/innovated further education programmes (number),
- further education lecturers trained (number),
- successful graduates of further education programmes (number).



4.2.8. Priority C.2. Development of Human Resources for Research, Development and Innovation

Aim and characteristics of the priority:

Priority “Development of Human Resources for Research, Development and Innovation” is focused on relieving the shortages and improving the quality of human resources for research, development, and innovation. The first measure supports human resources in R&D already at the university and higher education institution level. The second measure addresses human resource development under the goals of the immigration policy.

Priority proposal rationale:

Situation in the CR

The lack of qualified workforce in research and knowledge-intensive entrepreneurial activities on the labour market is one of the main barriers to the development of knowledge economy in the Czech Republic. Due to the low level of representation of tertiary education among the adult population, and the significant and increasing regional differences, it is also necessary to support more intensively distance forms of tertiary education.

In supporting tertiary education for research, development, and innovation and in order to improve the function of the labour market in the sphere of knowledge economy, it is also essential to expand access to university and non-university higher education institutions to include those groups of persons who have not undertaken tertiary education (such as private-sector employees). Due to the insufficient performance of Czech research and development, which is due, among others, to the absence of research and development management education, it is necessary to assure further education of employees of scientific and research institutions also in the sphere of material and financial management, as well as the European issues.

The lack of workers with tertiary education-level on our labour market in specific (technical) sectors represents a significant barrier in the sphere of human resources for the development of competitiveness of the Czech economy. The lack of qualified work-force is deepened as a number of top-level experts leave the country (“brain drain”) to obtain better conditions for research and generally better material conditions abroad.

Identified barriers in this area

The issues of human resource development for research, development and innovation was analysed in the study “Barriers to the Growth of Competitiveness of the CR” and the following were identified as the most significant barriers:

- lack of qualified workforce for research on the Czech labour market,



- de-motivating salary conditions in research and imperfect system of research appraisal,
- lack of qualified workers for knowledge-intensive businesses on the labour market.

Link to strategic documents of the EU and the CR

Priority “Development of Human Resources for Research, Development and Innovation” with its two measures is in conformity with the main strategic documents of the EU as well as the major document of the CR. Community Strategic Guidelines and Integrated Guidelines for Growth and Jobs recommend:

- to assure appropriate offer of attractive, accessible and high quality education and professional training at all levels, including flexible education plans, lower number of students who abort school, and achieving a higher level of completion of higher secondary education,
- to support modernization of university education and development of human potential in research and innovation by means of post graduate studies, further professional education of research workers, involving more young people to science and technical studies,
- to support quality and attractiveness of professional education including vocational education and education focused on entrepreneurship,
- to ensure greater mobility at regional, national and international level, and develop systems of support of transparency and qualification approval,
- to invest in infrastructure for education and professional training including information and communication technology.

The issues of human resource development for research, development and innovation are included in the National Innovation Policy of the CR for 2005-2010, which recommends support of projects of educating workers in the area of research and development aimed at technology transfer, IPR, basics in entrepreneurship and management skills including utilization of financial resources from the EU structural funds, and projects focused on establishment of knowledge management centres and its tutorial at universities and research institutions.

Safeguarding human resources for research, development and innovation in the necessary structure and at all levels is one of the objectives of the Strategy of Economic Growth (e.g. publication of education programmes aimed at researchers and R&D managers). The Strategy of Economic Growth recommends to conduct active immigration policy (support inflow of qualified workers according to the needs of the domestic labour market and retain young talents in the country).



Global objective of the priority:

Global objective of the priority is to support human resource development in research, development and innovation.

Specific objectives:

- increasing professional standard of graduates for research and development and for knowledge-intensive entrepreneurial activities,
- setting appropriate conditions for receiving and retaining foreign experts, and for the homecoming of Czech experts who have been working abroad.

Institutional and sector structure

- state administration institutions (the Ministry of Education, Youth and Sports) – competency at the level of managing body, final beneficiary, intermediary, project creation initiator,
- universities – competency of final recipients/recipients,
- research organizations (public and private) – competency of final recipients/beneficiary, counselling,
- institutions covering research organizations (e.g., Association of Research Organizations) – competency of final recipient/beneficiary, counselling.

Key indicators of impacts and results

- increase in the number of researchers at universities (%),
- increase in the number of researchers in the business sector (%),
- increase in the number of researchers in high-tech sectors (%),
- increase in the number of PhD students (%),
- increase in the number of foreign researchers (%),
- increase in the share of students in tertiary education programmes (higher professional, bachelor, masters, PhD, distance) and other education at universities and higher professional education schools with majors in ICT and languages (%).

Relation to other priorities and link to individual measures

All measures in this priority are concerned with human resource development in the sphere of research, development and innovation. Linkage of individual measures is ensured by the fact that they all form a compact unit covering the issue of HRD in R&D by means of further development and improvement of tertiary education (the first measure) and formation of conditions for foreign experts (the second measure).



4.2.8.1. Measure C.2.1: Support of tertiary education for research, development and innovation

Characteristics

The measure focuses on eliminating the lack of qualified workforce in the CR by increasing the scope and improving the quality and structure of tertiary education. The measure will support increasing the number and professional level of tertiary education graduates, including distance forms of education. The measure will also include support of further education at universities and other higher education institutions. The consequence of this measure will be an increase in the professional level of workers in the private sector as well as the research sphere.

Global objective

Global objective of the measure is to increase the quality of tertiary education in the CR.

Principal operational objectives

- improving the quality of education at universities and other higher education institutions,
- increasing the number of graduates at universities and other higher education institutions,
- increasing the number of PhD graduates,
- increasing the number of graduates of distance forms of university and higher education institutions programmes,
- development of further education at universities and other higher education institutions.

Institutions of the implementation structure

The Ministry of Education, Youth and Sports should be the managing body, intermediary and final beneficiary. Universities, research organizations and institutions covering research organizations (Association of Research Organizations) should participate at implementing the measure.

Final recipients

- universities and other higher education institutions,
- university and other higher education students,
- applicants for studies at universities and higher education institutions,
- public and private research organizations,



- employees of public and private research institutions,
- private sector (particularly knowledge intensive businesses),
- employees of the private sector.

Key indicators of results

- newly established/innovated tertiary education programmes (higher education, bachelor, master, PhD) (number),
- newly established/innovated study programmes of distance learning (number),
- newly established/innovated study programmes of further education at universities and higher education institutions (number),
- students in newly established/innovated tertiary education programmes (higher education, bachelor, master, PhD) (number),
- students in newly established/innovated study programmes of distance learning (number),
- participants of study programmes of further education at universities and higher education institutions (number).

4.2.8.2. Measure C.2.2 Immigration policy for knowledge economy

Characteristics

The measure focuses on creating suitable conditions for receiving foreign experts and for Czech experts coming back after having worked abroad. The measure will support foreign graduates of Czech tertiary education institutions in remaining on the Czech labour market, increasing adaptability of immigrants with required qualification, as well as increasing the awareness of immigrants of the Czech legislation, laws, regulations as well as the cultural environment. The measure will also include support of the return of Czech experts from abroad.

Global objective

Global objective of the measure is to create suitable conditions for receiving /retaining foreign experts and for Czech experts coming back after having worked abroad.

Principal operational objectives

- maintaining foreign graduates of Czech universities on the Czech labour market,
- increasing adaptability of immigrants, especially those with required qualification,



- increasing knowledge of immigrants about Czech legislation, regulations, laws, cultural environment, etc.,
- the return of Czech experts from abroad.

Institutions of the implementation structure

The Ministry of Education, Youth and Sports should participate at implementing the measure at the level of managing body, intermediary as well as the final beneficiary. Education institutions, universities, research organizations and institutions covering research organizations (Association of Research Organizations) should take part in implementing the measure.

Final recipients

- language schools and private teachers of the Czech language,
- public and private education institutions,
- public and private research institutions.

Key indicators of results

- foreign experts who passed supported Czech language courses (number),
- foreign experts who passed supported courses introducing the Czech legislation, laws, norms, cultural environment, etc. to foreigners (number),
- Czech experts who used their come-back scholarships (number).



4.3. Utilization of financial resources from structural funds for the proposed priorities and implementation measures

In the next programming period 2007-2013, the Union support will be focused on three objectives:

- The **Convergence Objective**, for which the resources of the European Regional Development Fund (ERDF), European Social Fund (ESF) and Cohesion Fund will be available,
- The **Regional Competitiveness and Employment Objective**, for which ERDF and ESF funds will be available,
- The **Regional Cooperation Objective**, for which only the ERDF is supposed to be used.

All strategic areas as well as their priorities and the relevant implementation measures, which were proposed on the basis of the analysis of the situation in the CR and in accordance with the fundamental strategic documents of the EU and the CR, fulfil all three Objectives of the Community support. The whole Czech Republic with the exception of the capital city of Prague, which will fall under the Objective Regional Competitiveness and Employment, will be eligible for the Objective Convergence. The proposed priorities and implementation measures may be financed under these Objectives from two European structural funds – ERDF, ESF.

For the absolute majority of implementation measures in strategic areas **Entrepreneurship** and **Research and Development**, resources can be drawn from the European Regional Development Fund. The exceptions are: measures aimed at improving environment for entrepreneurial activities, research and development (measure A.4.2. Development of institutional environment for entrepreneurial activities and B.1.4. Targeted information and monitoring environment for research, development and innovation), for which resources from Technical assistance or from the ESF can be used. Another exception is the measure B.2.1. Support of horizontal mobility, for which resources of ESF can be utilized. Activities proposed in implementation measures for the strategic area **Human Resources and Education** correspond in their orientation to the conditions stated for ESF financing.

Increasing qualification in businesses and research and educational institutions is also proposed in some implementation measures in the strategic area **Entrepreneurship** and **Research and Development**, and this fulfils the conditions for ESF financing. However, this always applies to activities, which are closely related to activities supported in a given measure (a typical example is increasing qualification in relation to implementing innovation in measure A.2.1), and therefore, such activities can use ERDF financing of up to 5%. Similarly, in priorities aimed at development of human resources (particularly priority C.1. Development of Life-Long Learning) programmes for increasing education with the support from ESF may be considered.



In the Objective Regional Competitiveness and Employment, which is expected to apply to the capital city of Prague in the next programming period, the financial resources will be limited compared to the Convergence Objective. For this reason, it is not likely to be possible to draw support for certain activities from ERDF or from ESF.

When preparing programmes for regions under the Objective Regional Competitiveness and Employment, which are based on the proposals of priorities and implementation measures presented in this study, it will be necessary to carefully consider these facts and for some activities, which are essential for developing a knowledge economy in a given region, utilize different financial resources (for example, create corresponding programmes financed from the state budget or compensate for financial resources, which are “inaccessible” for the applicant for ERDF and ESF funds, from other sources).

Some of the proposed priorities and implementation measures can also be classified under the Objective Regional Cooperation. This applies especially to those areas, in which international cooperation and participation of Czech subjects in international networks are proposed. This is mainly specified in the following measures:

- A.1.1. Development of business structure – technology transfer on international scale, cooperation of technology transfer centres with similar institutions abroad,
- A.2.4. Technology platforms – linking national technology platforms with platforms abroad,
- A.3.1. Financial tools for setting up and development of firms –creation of financial tools aimed at, for example, supporting R&D in SME,
- A.4.1. Support to cooperation among enterprises - engagement of clusters of Czech entities in international groups, establishing networks,
- B.1.2. Centres and networks of excellence – linking centres with similar institutions abroad, establishing international networks, international technology and knowledge transfer,
- C.1.3. Preventing unemployment among graduates – effectiveness and quality of tertiary education – support to cooperation, and establishing networks of universities, research institutions and SME.

As briefly indicated in this chapter, utilization of financial resources for implementation measures can be regarded only as indicative, because it is based on a brief specification of priorities and activities included in the proposal for regulations on ERDF and ESF of 21 December 2005⁴. In preparing operational programmes, it will be essential to consider the above mentioned restrictions and proposals in a wider context according to the approved regulations and other documents, which will state conditions for providing support and drawing financial resources from the structural funds under individual Objectives of the Cohesion Policy of the Union.

⁴ Proposal for a Regulation of the European Parliament and of the Council on the European Regional Development Fund (ERDF) and Proposal for a Regulation of the European Parliament and of the Council on the European Social Fund (ESF) of 21.12.2005



5. CONCLUSION

The study “Assessment of Priorities and Formulation of Recommendations for Implementation Measures towards Developing Knowledge Economy within Preparation of National Programming Documents of the Czech Republic for 2007-2013” is a research project proposing the strategic orientation of the CR in the next programming period. The study does not substitute a proposal of programming documents determining conditions of the Czech Republic for drawing support from the EU structural funds in innovation and knowledge-based economy.

The main objective of this project was, above all, to take into account new directions of the EU policies defined in the Community Strategic Guidelines of the Union and in other related documents in proposals of strategic priorities and implementation measures, the aim of which is to ensure the growth of the economy based mainly on knowledge. At the same time, the study takes into account previously elaborated documents analysing obstacles to the effective growth of competitiveness of the Czech Republic. The analysis “Barriers to the Growth of Competitiveness of the CR” is an important background document, the outputs of which outline the future strategy and the potential thematic areas in the next EU programming period.



6. THE MOST RELEVANT DOCUMENTS

National strategic documents:

- Economic Growth Strategy of the Czech Republic 2005-2013
- National Development Plan of the Czech Republic 2004-2006. Ministry for Regional Development of the Czech Republic (2003)
- National Development Plan of the Czech Republic 2007-2013 (drafts)
- CR 2004-2006. Community Support Framework. Ministry for Regional Development of the Czech Republic (2003)
- National innovation strategy of the Czech Republic. The Office of the Czech Republic Government (2004)
- National innovation policy of the Czech Republic for 2005-2010, adopted by the Government of the Czech Republic in July 2005
- National research and development policy of the Czech Republic for 2004-2008, adopted by the Government of the Czech Republic in January 2004
- National Research Programme I, adopted by the Government of the Czech Republic in April 2003
- National Research Programme II, adopted by the Government of the Czech Republic in March 2005
- Long-term Principal Research Directions, adopted by the Government of the Czech Republic in June 2005
- National Lisbon Programme 2005 – 2008 (National Reform Programme of the Czech Republic). The Office of the Czech Republic Government (2005)
- Strategy of Sustainable Development of the Czech Republic. Ministry of the Environment of the Czech Republic (2004)

Operational Programmes and Single Programming Documents:

- Operational Programme Industry and Enterprise
- Operational Programme Infrastructure
- Operational Programme Human Resources Development
- Operational Programme Rural Development and Multi-functional Agriculture
- Joint Regional Operational Programme
- Single Programming Document 2
- Single Programming Document 3



EU documents:

- Communication from the Commission: Third progress report on cohesion: Towards a new partnership for growth, jobs and cohesion, COM(2005), 192 final
- Communication from the Commission: More Research for Europe. Towards 3% of GDP, COM(2002), 499 final
- Facing the Challenge (Report from the High Level Group chaired by Wim Kok). EC, November 2004.
- Integrated Guidelines for Growth and Jobs (2005-2008), COM (2005) 141.
- Communication from the Commission: Cohesion Policy in Support of Growth and Jobs: Community Strategic Guidelines, 2007-2013, COM(2005) 0299
- Communication to the Spring European Council Working Together for Growth and Jobs – A New Start for the Lisbon Strategy, COM (2005) 24
- Commission staff working paper: Working together for growth and jobs. Next steps in implementing the Lisbon Strategy, SEC(2005) 622/2
- Communication from the Commission Science and Technology, the Key to Europe's Future – Guidelines for future European Union Policy to Support Research, COM (2004) 353
- Communication to the Commission: Building the ERA of Knowledge for Growth, COM (2005) 118.
- Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, COM (2004) 590.
- Communication to the Commission: Europe and Basic Research, COM (2004) 9
- Council Resolution of 26 June 2001 on Science and Society and on Women in Science (2001/C 199/01)
- The broad guidelines of the economic policies of the member states and the community (for the 2003-2005 period)
- Communication from the Commission: Investing in research: an action plan for Europe, COM(2003), 226 final/2
- Lisbon action plan incorporating EU Lisbon Programme and recommendations for actions to member states for inclusion in their national Lisbon processes. Companion document to the Communication to the Spring European Council. SEC(2005) 1992
- Green Paper on Innovation
- The First Action Plan for Innovation in Europe
- Innovate for a Competitive Europe. A New Action Plan for Innovation



- Research for the Secure Europe – Report of the Group of Personalities in the field of Security Research. European Commission (2005)
- Frontier Research: the European Challenge, High-Level Expert Group Report (executive summary). European Commission (2004).
- Focus on the Structure of Higher Education in Europe 2004/2005. National Trends in the Bologna Process. Eurydice (2005)
- Innovation policy in six candidate countries: The challenges (Czech Republic). ADE (2001)
- Communication from the Commission: The role of the universities in the Europe of knowledge. COM (2003) 58 final
- Communication from the Commission to the Council and the European Parliament: Common Actions for Growth and Employment: The Community Lisbon Programme, COM (2005) 330 final
- Communication from the Commission: State aid action plan. Less and better targeted state aid: a roadmap for state aid reform 2005-2009. COM (2005), 107, final
- Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions: More research and innovation – investing for growth and employment. A common approach. COM (2005) 488
- Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions: Implementing the Community Lisbon Programme – modern SMEs policy for growth and employment. COM (2005) 551

EU documents – funds:

- Proposal for a Council regulation laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund. COM (2004) 492 final
- Proposal for a regulation of the European Parliament and the Council on the European Social Fund. COM (2004) 493 final
- Proposal for a Council regulation establishing a Cohesion Fund. COM(2004) 494 final
- Proposal for a regulation of the European Parliament and of the Council on the European Regional Development Fund. COM (2004) 495 final
- Proposal for a regulation of the European Parliament and of the Council: establishing a European grouping of cross-border cooperation (EGCC). COM (2004) 496 final



CSF evaluation reports:

- 1/04: Analysis and evaluation of weak points in the implementation system and of breakdown risks. Ministry for Regional Development of the Czech Republic (2005)
- 3/04: Analysis and evaluation of the external environment of CSF implementation system. Ministry for Regional Development of the Czech Republic (2005)
- 4/04: Barriers to the growth of competitiveness of the CR. Ministry for Regional Development of the Czech Republic (2005)
- 5/04: Identification, Analysis and Evaluation of Arrangement of EU assisted development programmes and programmes assisted exclusively by Czech means, with a view to proposing a more coordinated and rational system. Ministry for Regional Development of the Czech Republic (2005)
- 6/04: Evaluation of Indicators and Appropriateness of Their Adjustment. Ministry for Regional Development of the Czech Republic (2005)

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