

South Bohemia Region

Regional Annex to National RIS 3

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Analytical Part

1. Position of the Region

The South Bohemia Region has a relatively large share of public science and research capacities and a diversified manufacturing industry. The region is not an agglomeration or industrial centre of European importance but it attracted significant foreign investments after 1989 due to its proximity to the advanced German and Austrian regions. In the economic structure, traditional sectors (food-processing industry, beverage production, stationery production, textile industry and cabinetmaking) are intertwined with progressive sectors (automotive components, electrical and electronic equipment, energy industry, IT). In addition to industry, an important role in the region is played by the development of tourism, which has a very good potential due to the preserved environment and many cultural attractions.

The attractiveness of the South Bohemia Region for business development is significantly enhanced by its location. In addition to the proximity to Upper Austria and Bavaria, the region is part of the transit routes connecting important Central European economic centres. With the influx of foreign investment in the manufacturing industry (mainly in the expansion of the production capacity) and the diversity of the manufacturing industry, the South Bohemia Region has, in the long term, one of the lowest unemployment rates in the Czech Republic.

On the other hand, it is clear that the structure of the regional economy with a lack of significant representation of high-tech manufacturing has resulted in a relatively slow growth of the region, and therefore the share of the South Bohemia Region in the total GDP of the Czech Republic has been declining in recent years.

2. R&D in the Region, Innovative Business

In the South Bohemia Region, there are 2 public universities, 3 private universities, the Faculty of Management of the University of Economics in Jindřichův Hradec and 1 public research institution. The largest university in the region is the University of South Bohemia in České Budějovice with 8 faculties and a total of 13,000 students. Furthermore, there are several internationally recognised science and research teams and several newly built science and research institutes. These teams and centres focus mainly on basic research, which is evidenced by the fact that the expenditures on basic research are higher than the expenditures on applied research in the South Bohemia Region alone. In the future, it is therefore necessary to support the cooperation between the private and science and research sectors. This may be helped by the newly built Science and Technology Parks and Technology Transfer Centres.

The key problem is the absence of technically skilled workers. The situation needs to be addressed across all levels of the education system.

The task of the newly built innovation infrastructure is to set such a scope and quality of support services that will help both new and existing innovation companies to successfully implement their business plans and innovation activities, and thus increase the competitiveness of the entire region.

3. Public Administration and its Role in the Region's Innovation System

a, Strategy Documents, Relevant Analyses and Surveys

The most important strategy document in Support Area RDI in the South Bohemia Region is the Regional Innovation Strategy in force for the period between 2010 and 2015. In the second half of the effective period of the RIS, it is possible to conclude that the document contains many useful tools, not all of which have been turned into action plans or implemented. The greatest achievement is the construction of Phase IIA of the South Bohemian Science and Technology Park, implemented by the South Bohemia Region through its joint-stock company, JVTP, a.s. In line with the strategy, projects whose implementers are entities other than institutions of local government (especially the completion

of equipping R&D institutions from the OP RDI programmes and support tools funded under the OP EC) have also been implemented.

The Regional Innovation Strategy forms an annex to the Development Programme of the South Bohemia Region 2007 - 2013 (PA1 - Economic Development and Knowledge Economy), and is in line with the newly prepared RDP 2014 - 2020 (PA1 - Competitiveness of the Regional Economy and the Labour Market).

In the strategic plan of České Budějovice, Support Area RDI is incorporated in PA3 - Programme for Economic Development. The document is valid until 2013. Support Area RDI has not been a priority for České Budějovice, which means that not many activities have been turned into action plans or implemented. Currently, the City of České Budějovice is preparing *Integrated Territorial Development Plan (ITDP) 2014-2020*, which will be prepared based on the principle of integrated approach - it will thus include territories forming a logical unit on the basis of selected thematic priorities. The preparation of the ITDP will involve local science and research institutions, and will reflect the set specific objectives of the Regional Innovation Strategy of the South Bohemia Region, among other things.

Other documents consist of studies that map and analyse the extent of innovation infrastructure in the South Bohemia Region and support innovation tools, among other things:

- *Regional Innovation Monitor* - the Southwest Regional Innovation Report (RIM). The study was prepared by the Technology Centre ASCR for the European Commission in 2012 and describes the existing regional innovation systems and policies of the entire NUTS II Southwest Region, based on both regional RIS. A downside is the connection of the Pilsen Region and the South Bohemia Region, as their innovation policies are completely different - so far, there has been almost no coordination of documents or innovation tools. The interesting parts of the document consist in the specified best practices and the final identification of trends and opportunities of the future Smart Specialisation.
- *Strategy and Action Plan for the European Region Danube - Vltava* (Prepared under the "European Region Danube - Vltava" project - ERDV, of which the South Bohemia Region is one of the partners). Under the project, a Network Analysis and a Potential Analysis were carried out. All of the above was covered by the ERDV Strategic Framework. The document focuses on 7 regions of 3 countries, and some of the conclusions are rather general (a SWOT analysis of innovations in the potential analysis, a perspective view of the areas of Cooperation and Innovation and Growth). The benefit of the document lies in a list of existing networks across all the included regions, and the screening of joint international projects.
- *Processing Inputs for the Implementation of the TIM Concept* (Technology and Innovations Management) - prepared in the framework of the implementation of a cross-border project, Innovation Catalyst for the Mühlviertel - South Bohemia Area. The study monitors the description of offers of Austrian R&D services and possible demand for these services by SMEs in the South Bohemia Region, including support for technology transfer, description of the innovation infrastructure and subsequent comparison with the situation in Upper Austria. The work of the Austrian experts is based on active search for innovation companies and helping them meet their needs, for example through cooperation with universities (UNI) and research institutions and the preparation of their joint projects. The experts are fully covered by public money. The tool could be applied in the South Bohemia Region after finding appropriate financial resources for experts (expert funded by a public institution + a variety of regional tools supporting joint innovation projects of various sizes).
- *Mapping the Potential of Industrial Zones in the South Bohemia Region* (prepared for the South Bohemia Region in 2012) - mapping the condition of the existing industrial zones and the possible potential of new zones - a very detailed description of all the regional industrial zones, serves as an important document for foreign and domestic investors.
- *Screening of Decision Processes for Public Innovation Funding* (prepared under the supra-national INNOFUN project in 2012) - a description of innovation tools and best practice in 9 European regions involved in the project - most of the tools are related to the support of start-up and investor search, or the education of entrepreneurs in their innovative thinking.

The last group of the prepared documents focuses directly on the mapping of fields that are crucial for

the South Bohemia Region:

- Under the existing RIS, no crucial fields are specified; the RIS only states fields that are represented by relevant companies in South Bohemia and fields with possible innovation potential, such as the production of motor vehicles, parts and other components, the production of metal structures and other metal products, the production and repairs of machinery and equipment, the production of medical, precision, optical and clocking devices, the energy industry, etc.
- Under the cross-border “MSB TechNet” project, a company database was prepared for the Competence Map, including the field of biotechnology and related fields. This field was selected on the basis of the focus of the STP in České Budějovice and its equipment. A potential cooperation between companies and RDI may also arise through the Central European portals www.gate2biotech.cz and www.gate2biotech.com, managed by JAIP, o.p.s., with about 60 thousand visitors per month. The University of South Bohemia also initiates the emergence of “CEBIO” - the Czech Biotechnology Platform.
- A larger field survey was carried out by JVTP, a.s. (the South Bohemia Region being a 100% owner), which is in charge of the construction of Phase II of the STP in České Budějovice. 300 out of 6,000 companies were chosen and given a questionnaire to fill in (the questions were focused on the degree of innovation, the qualifications of the staff, cooperation with universities and funding resources) - in the end, 80 companies were identified that expressed interest in working with the new STP and using its equipment. Phase II of the STP České Budějovice will be put into operation in mid-2014 and will reach the threshold leased value of approximately 2,000 m². In addition to administrative space, the STP will offer pilot plants, equipped laboratories and facilities with technical equipment connected to the warehouses.

b, Overview of Existing Support Schemes

In the South Bohemia Region, a relatively large number of support schemes is being implemented. Most activities are being prepared in a rather uncoordinated manner so far. Three companies are in charge of the implementation of the individual schemes, besides the South Bohemia Region itself. Two of the companies perform these activities for the South Bohemia Region as community services in the field of innovation (the South Bohemian Agency for Support to Innovative Enterprising, civic consulting centre - the management of Phase I of the STP, consulting for entrepreneurs, the administration of the biotechnology portal; the South Bohemian Chamber of Commerce - events for entrepreneurs). JVTP a.s. is in charge of the construction of Phase II of the STP in České Budějovice, which will be completed in mid-2014. The exact specifications of the community services are approved by the Regional Council every year.

The South Bohemia Region further implements Business Missions and the Programme of Advantageous Regional Loans in the South Bohemia Region, designated for South Bohemian entrepreneurs. If a start-up wants to obtain a loan, the South Bohemia Region takes into account the evaluation by means of the “BLUES” methodology, carried out by JAIP. For more information on support schemes see Annex 1 - Table 3.

4. Main Actors in the Innovation System - Results of the Stakeholder Analysis

a, Application Sphere in the Region

The South Bohemia Region has no agglomeration or industrial centre of European importance. The main sectors represented in the region include:

- traditional sectors with good raw material bases and clear ties to the purchasers of such basic raw materials; on the other hand, these sectors are of a rather stagnant character with

necessary elements of restructuring (for example stationery and cellulose production, wood-processing industry, graphic-arts industry and cabinetmaking, production of other non-metal mineral products, such as building materials, textile industry and food-processing industry tied primarily to agriculture, etc.);

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- progressive growth sectors in the national and global context, developed in the South Bohemia Region also in relation to foreign direct investment, with a high share in the export performance of the region (such as the production of components and parts for motor vehicles, production of metal structures and other metal products, production and repairs of machinery and equipment, production of medical, precision, optical and clocking devices, the energy industry, etc.);
- tourism - the South Bohemia Region has good natural conditions for tourism (landscape, major monuments of cultural heritage, sports and culture, preserved environment, convenient location, etc.) and prerequisites for its further development, and has a positive impact on the growth of the directly related sectors of transport, construction, culture, trade, sports, etc.

Given the history of the region and the focus of science and research capacities, it should be noted that the area of **Biotechnology** plays a very important role in the South Bohemia Region. In the preparation of the STP construction in České Budějovice, an analysis of companies operating in this field and related fields (food-processing, agricultural, medical, environmental and molecular biotechnology) was carried out, mapping the R&D activities of the companies and their interest in cooperating with South Bohemian R&D institutions. The field of biotechnology is connected to the well-functioning food-processing cluster - "**Chutná hezky Jihočesky**" (South Bohemian Tastes Good) that aims to promote regional products, and to the **Brewery Cluster**. Under the University of South Bohemia in České Budějovice, the **Czech Biotechnology Platform (CEBIO)** is emerging; its aim is to bring together as many biotechnology entities as possible in order to improve cooperation between science and research institutions and companies.

The activities of the most important South Bohemian businesses fall within the manufacturing industry. These are mainly companies that supply their products to the automotive and aircraft industries, or that manufacture mechanical engineering and foundry products and electrical products. In 2012, the **Technology and Education Consortium at the Institute of Technology and Business (ITB)** was established; it brings together universities, secondary schools and companies with a focus on technology, and its main aim is to improve the quality of the study programmes so that the graduates are better suited for the requirements of the labour market.

Other important sectors in the South Bohemia Region include energetics (in connection with the location of the Temelín Nuclear Power Station) and renewable energy sources. In addition to major enterprises, we should mention the **Czech Biogas Association, civic consulting centre** that is based at the České Budějovice STP and that is the national technology platform for the production and use of biogas. The CzBA brings together more than 60 members including leading science and research institutions, suppliers and manufacturers of technologies, operators of biogas plants and other experts not only from the Czech Republic. The ENKI Science and Technology Park (ENKI STP) and associated companies focus on solar and landscape energy.

Companies focused on IT are gathered together in the **Czech Cloud Cluster** under TC Písek, the **Czech IT Cluster** and the **IT Club under the South Bohemian Chamber of Commerce**.

b, Science and Research Institutions in the Region

In the South Bohemia Region, there are two public universities (+ the Faculty of Management of the University of Economics), three private universities and one public research institution. In the area of RDI, the following are important:

The largest university in the region is the **University of South Bohemia in České Budějovice (USB)** with eight faculties (the Faculty of Economics, the Faculty of Philosophy, the Faculty of Education, the Faculty of Science, the Faculty of Theology, the Faculty of Health and Social Studies, the Faculty of Agriculture and the Faculty of Fisheries and Protection of Waters). It is clear that the USB is made up of faculties of very different focuses and that the science and research work is rather diverse there.

According to the CERGE study, international recognition is achieved mainly by the science teams under the fields of the ecology of communities, biophysics and molecular and evolutionary biology at the Faculty of Science, and under the field of fish genetics at the Faculty of Fisheries and Protection of Waters. The above corresponds to the proportions of students in doctoral study programmes and graduates thereof. The science and research activities of the university are characterised by the close cooperation of the university with the institutes of the Academy of Sciences of the Czech Republic, in particular with the Biology Centre; this cooperation strengthens the research and educational character of the scientific fields at the USB.

With the support of the OP RDI programme, the **South Bohemian Research Centre of Aquaculture and Biodiversity of Hydrocenoses** under the University of South Bohemia was established. The centre's mission is to implement a total of six research programmes focused on the quality of fish meat: the technology of caviare production; innovation of methods of production of fish species that are important in terms of economy and sports; the development and innovation of systems of continuous monitoring of water quality, using fish and crayfish as bio-indicators within the management of water reservoirs; innovation of the monitoring of the presence of contaminants in the environment; the assessment of the impact on exposed organisms with the possibility of elimination in waste-water treatment processes, and the creation and use of a knowledge base for the development of experimental techniques.

Under the CEBIO Czech Biotechnology Platform, the establishment of the Technology Institute of the University of South Bohemia in České Budějovice is planned; the Technology Institute will focus on 2 areas - the traditional field of Biotechnology and a newly prepared area of Mechatronics that is to lay the foundations for new technical fields. In this respect, the USB cooperates with the CTU in Prague and the regional application sphere.

The most important public research institution in the South Bohemia Region is the **Biology Centre of the Academy of Sciences of the Czech Republic, public research institution (BC)** that was formed by merging five South Bohemian institutes of the Academy of Sciences (the Institute of Entomology, the Institute of Hydrobiology, the Institute of Parasitology, the Institute of Plant Molecular Biology and the Institute of Soil Biology) in 2005. According to the Hirsch index, a recognised scientific metric system, many scientists of the BC are, in their respective fields, among the most cited and respected in the world. Thanks to their excellent knowledge, they also boast numerous government and academic awards. A successful participation in international competitions has been made possible by global prestige in specific areas of biological, environmental and biotechnology research, such as the study of gene cascades, the molecular mechanisms of the "biological clock", the interactions between parasites, vectors and hosts, and the use of various organisms (the Arabidopsis plants, the vinegar fly - *Drosophila melanogaster* or ticks) as models in biology. The BC has a unique know-how and excellent results in many fields of biotechnology, from plant virology and the study of tropical diseases and biopesticides to the analysis of fish stock in water reservoirs. The BC is more and more focused on increasing the knowledge potential of the population of the South Bohemia Region, especially on non-formal education at all levels of the education system, science communication and two-way dialogue with the public in the South Bohemia Region.

Another public university in the South Bohemia Region is the **Institute of Technology and Business (ITB)** in České Budějovice (so far the youngest public university in the Czech Republic). The ITB is a public university that is not divided into faculties. Currently, the ITB offers four Bachelor 's study fields (Transport, Mechanical Engineering, Civil Engineering and Economics) and one Master's field (Logistics Technologies). Research, development and creative activities are performed in the context of the studies. The university has recently opened a Centre of Technical Studies under the Secondary School of Mechanical and Civil Engineering in Tábor that offers the field of Mechanical Engineering as a Bachelor's degree (specialisation in Advanced Materials).

Other R&D institutions in the South Bohemia Region include the **Institute of Botany of the Academy of Sciences of the Czech Republic, public research institution** in Třeboň that is primarily engaged in basic research in the field of plant ecology and the taxonomy, ecology and physiology of cyanobacteria and algae. At the same time, it is involved in applied research projects. There is an analytical laboratory specially equipped for chemical analyses of surface water, ground water and waste water and for analyses of soil and sediments; the laboratory is available to both science departments and external customers.

In Třeboň, there is also a **Detached Centre of the Institute of Microbiology, public research institution of the ASCR** that focuses on the study and use of photosynthetic microorganisms, green algae, cyanobacteria and photosynthetic bacteria. With the support of the OP RDI programme, the **Algatech Centre for Algal Biotechnologies** was built. The aim of the project is to develop new cultivation equipment and procedures for processing algal biomass to produce biofuels, animal feed, food supplements and valuable substances.

The last of the institutes of the Academy of Sciences represented in the South Bohemia Region is the **Global Change Research Centre, public research institution (GCRC)** with branches in České Budějovice and Nové Hrady. The most important institution in České Budějovice is the **Biodiversity Research Department**, whose main goal is to conduct fundamental research in fields including evolutionary ecology (in particular the evolution of life strategies), population dynamics (in particular the predator-prey and plant-pollinator systems) and the stability of ecological communities using theoretical, experimental and field approaches, especially in the context of current climate changes. Other important institutes include: The Laboratory of Metabolomics and Isotope Analyses and the Department of Carbon Storage in the Landscape. The **Institute of Nanobiology and Structural Biology of the GCRC** in Nové Hrady includes the excellent **Department of Cell Biology** that focuses on understanding the functioning of the brain and the **Department of Structure and Function of Proteins** with a focus on clarifying the relationships between the structure and functions of proteins, the dynamic changes related to the functional processes at the level of proteins and the interaction of common factors and subunits in the protein complexes. The Nové Hrady Institute also includes: The Department of Crystallogenes and Biomolecular Crystallography and the Department of Nanobiotechnology

c) Regional Innovation Infrastructure

Currently, **Phase I of the South Bohemian Science and Technology Park** in České Budějovice is in operation. The project implementer is the University of South Bohemia in České Budějovice. The South Bohemian Agency for Support to Innovative Enterprising has been entrusted with the park management. The project has a floor area of 620 m² and serves as a Business Incubator, Business Innovation Centre and Technology Transfer Centre. A follow-up investment project whose output will be Phase II of the South Bohemian Science and Technology Park with a floor area of 2,000 m² is currently under construction. Among other things, both centres offer equipped laboratories mainly focused on the field of biotechnology. Potential clients are and will be research teams with technical solutions applicable in practice, start-ups linked primarily to the University of South Bohemia and the Biology Centre of the ASCR. Phase I and Phase II of the STP are co-funded by the South Bohemia Region (Phase I is also co-funded by the Statutory City of České Budějovice).

Technology Centre Písek, approved in November 2013, has an area of 7,300 m² of office space and 300 m² within the business incubator. In addition to office space, the Technology Centre Písek includes laboratories, plants for light manufacture and special high-security areas. A significant part of the centre is formed by one of the most advanced data centres in Europe, focused mainly on the provision of advanced ICT services and Cloud Computing.

The **ENKI Science and Technology Park** is primarily focused on applied research in the fields of solar and landscape energy, pond management, water management in the landscape and the use of natural and artificial wetlands.

The **Nové Hrady Academic and University Centre** is a joint project of the Institute of Nanobiology and Structural Biology of the Global Change Research Centre and the University of South Bohemia in České Budějovice. The centre, which focuses on applied research in the field of biotechnology, includes a science and technology park with several companies that use the premises and equipment of the centre.

In addition to the physical infrastructure, there are organisations in the region that deal with the issues of R&D support, technology transfer, investment promotion and SME promotion.

The South Bohemian Agency for Support to Innovative Enterprising, civic consulting centre

(JAIP) was founded by the South Bohemian Chamber of Commerce with a view to cover the promotion of research, development and innovation in the South Bohemia Region. The agency brings together representatives of companies and institutions that deal with the issues of research, development and innovation, facilitates communication and creates a platform for cooperation among the academia, public authorities and the business community. The main mission of the agency, providing assistance to the South Bohemia Region in R&D, is to design and apply a policy of support to innovative enterprising, technology development and research and development base with regard to the national framework and the regional specifics.

The South Bohemian Science and Technology Park (JVTP, a.s.) is an organisation founded by the South Bohemia Region, and its mission is to ensure the construction, equipment and operation of Phase II of the STP in České Budějovice.

The **South Bohemian University and Academic Technology Transfer Centre** was founded in 2012. The main task is to interconnect the offer of R&D results of the University of South Bohemia and the Biology Centre of the ASCR with meeting the technology demand of entities in the application sphere. The centre provides a comprehensive portfolio of services in the area of commercialisation of intellectual property from mapping the research potential of both partners to the application of the research results in practice through direct business activities. The main field-specific area is biotechnology in the broad sense. The main partners in the application sphere are predominantly agricultural enterprises, hospitals, local authorities and their organisations especially in the South Bohemia Region and the neighbouring regions.

The **South Bohemian Chamber of Commerce (SBCC)** was established to support business and to protect the interests of its members. The basic services of the SBCC include the monitoring of grants and grant consultancy, the organisation of specialised and information seminars (mostly on the topic of business management, legislative and tax changes, etc.) and consultancy for start-ups.

The Regional Development Agency (RDA) - its main objective is to promote and coordinate the economic, social and cultural development of the South Bohemia Region. The shareholders of the agency are the Union of Towns and Municipalities of the South Bohemia Region (30 % of shares), the South Bohemia Region (30 %), the South Bohemian Chamber of Commerce (20 %) and the Regional Agrarian Chamber (20 %). Currently, the RDA is involved in 2 international projects with innovation potential. In the past, it cooperated in the preparation of the RIS of the South Bohemia Region.

The **CzechInvest Investment and Business Development Agency** is a public allowance organisation subject to the Ministry of Industry and Trade of the Czech Republic.

d, Entities in Public Administration

It is clear in the table of innovation tools implemented in the South Bohemia Region that most of the key support activities are co-financed by the **South Bohemia Region**. These are mainly Phase I and Phase II of the STP in České Budějovice and the support of other tools through community services in the area of innovation provided by JAIP, o.p.s. and the SBCC.

To a lesser extent, the **Statutory City of České Budějovice** is also involved in the support of innovation. In addition to the co-funding of the construction of Phase I of the STP and a contribution to the activities of the SBCC, the city supports individual projects such as the Conference on Biotechnology 2013, Presentation of České Budějovice as a City of Science, Science in Photographs, etc.

The employer association is the **South Bohemian Society for Human Resource Development (SBSHRD)** that was, like JAIP, founded by the South Bohemian Chamber of Commerce, and its optional body is the Council of Economic and Social Agreement of the South Bohemia Region.

Given the importance of tourism in South Bohemia, we should also mention the **South Bohemian Office for Tourism**, which is an allowance organisation of the South Bohemia Region that provides support to tourism in the South Bohemia Region.

Given the significant representation of traditional fields in the South Bohemia Region, an important role is also played by the **Regional Agrarian Chamber of the South Bohemia Region (RAC SBR)** that brings together seven district agrarian chambers of the South Bohemia Region; through them, it covers around 700 physical and legal entities operating in agriculture, forestry, fishing and the food-processing industry in the South Bohemia Region.

5. SWOT analysis

Strengths and weaknesses

Strengths	Weaknesses
Position of the Region	
<ul style="list-style-type: none"> • A diversified manufacturing industry. • A strong agri-food complex (tradition in the field of agriculture, the food-processing industry, forestry, fishing, brewing). • Attractive environment for leisure activities (sports, adventure tourism, culture). • Favourable geographical location in relation to the rich European markets. 	<ul style="list-style-type: none"> • The focus of production in many enterprises lies in products with a low added value. • An underdeveloped transport (road, rail) and logistic infrastructure including its management systems, inhibiting the development of the region.
Enterprise and innovation	
<ul style="list-style-type: none"> • The existence and trend of placement of new research, development and application centres of major technology companies. • An increasing demand for the application of biotechnology in companies (the food-processing industry, environmental care, health care). • The existence of companies with technical profiling with advanced technologies and processes with a significant growth potential. • Strong integration and cooperation ties between technically oriented companies and the European transformation and innovation environment. • Emerging networks and innovation infrastructure (Science and Technology Parks, Technology Transfer Centres, the Design and Innovation Centre, the Technology Consortium with leading industrial companies in the South Bohemia Region), tradition in cross-border cooperation within the Euroregions. • The existence of industrial zones and development areas for investors around the region (including the development area of the Airport České Budějovice). 	<ul style="list-style-type: none"> • A low number of companies implementing advanced technological innovations. • Fragmented and underdeveloped services for start-ups (especially for young technology companies). • A low degree of initiative on the part of the population. • Low information linking of SMEs in the context of entire business chains
R&D	
<ul style="list-style-type: none"> • The presence of the faculties of the University of South Bohemia and research institutions with cutting-edge research in the area of biological sciences. • Emerging applied research in response to major social challenges (climate change, environmental risks). 	<ul style="list-style-type: none"> • Lack of communication and awareness of the academia and the research community towards enterprises and vice versa, and the resulting lack of cooperation. • A limited capacity of applied and industrial research. • Poorly identified priorities of targeted research in the region. • Lack of popularisation of RDI activities in the region and science communication with the general public.
Human resources and education	

<ul style="list-style-type: none"> • A competitive workforce in terms of costs. • Excellent internationally recognised research teams and tertiary education in science (especially biology and ecology). 	<ul style="list-style-type: none"> • Lack of graduates and qualified workers in technical fields. • Selective migration (loss of talent). • Lack of highly qualified personnel in RDI. • A low interest in the studies of science and technology among students of primary and secondary education. • Lack of personnel in R&D with professional knowledge of management, marketing, B2B, innovation and technology transfer.
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Opportunities and threats

Opportunities	Threats
Political/legislative influences	
<ul style="list-style-type: none"> • Strengthening the support of foreign and Czech company investments in products and services with a higher added value. • Removing the barriers to a unified European market and the transition to the euro. • Reducing bureaucracy, simplifying the administration system and increasing transparency in the allocation of funds and in the implementation of public contracts. • A reform of the accounting law in connection with innovation in companies. • A change in the immigration law for educated and technically adept foreigners. • Increasing the attractiveness of business plans for potential investors in terms of legal and financial conditions. 	<ul style="list-style-type: none"> • Increasing the tax burden of companies to increase the motivation of foreign companies to diminish or transfer their operations to countries with lower costs of inputs. • A deepening political instability leading to a further deterioration of the predictability of the business environment in the Czech Republic. • Geopolitical changes increasing the risk of political barriers to trade. • An inconsistent interpretation of laws and other legislation.
Economic/financial impacts	
<ul style="list-style-type: none"> • Improved cutting-edge research through the entry into the European Research Area or project partnerships under Horizon 2020. • Motivation of the transfer of research centres of foreign companies to the Czech Republic (financial, adequate facilities and high-quality human resources). • The use of the geographical location of the region to increase cooperation of the corporate and science and research sectors with cross-border regions. • Improving the quality of human resources and the innovation infrastructure in companies and the research sectors using the possibilities offered by the Structural Funds in the new EU programming period 2014 - 2020. 	<ul style="list-style-type: none"> • Failure to create the conditions for long-term sustainability of projects funded by the Structural Funds and the need to refund grants (especially the OP RDI projects).
Social/demographic influences	

<ul style="list-style-type: none"> • A controlled migration policy (support of the influx of foreigners with higher levels of education, especially technical education). 	<ul style="list-style-type: none"> • Lack of increase in workforce productivity leading to an outflow of foreign direct investment and foreign companies. • Distrust of the business community in terms of cooperation with other partners. • A shortage of skilled employees in companies (retirement of experienced employees, poorly qualified young people, outflow to other regions/countries).
Technological aspects	
<ul style="list-style-type: none"> • A greater attractiveness of science and technology at all levels of education. • The development of new technologies and the resulting new companies and sectors. 	<ul style="list-style-type: none"> • A slow response to globalisation and lack of new technologies in traditional sectors, leading to a deterioration of such companies.

6. Methodology of the Preparation of the Regional Annex

The main objective of the analytical part of the Annex is to evaluate the current situation in the South Bohemia Region and the opportunities for further development in the support area of innovation. The basic information was the statistical data of the CZSO. These were not only publicly available data but also a database obtained for the purposes of a survey of innovation companies conducted by JVTP, a.s.

The analysis of the science and research potential of the region describes the representation of universities and academic institutes. The critical evaluation of the individual disciplines is based on the CERGE comparative study, among other things.

Several sources were used to map important regional entities in the application sphere. The Sector Database of Suppliers on the CzechInvest website played an important role; in the case of most companies, the database contains information on their classification in the supply chain and on whether they are final suppliers or suppliers of components. The mapping was complemented with information obtained from the SBCC representatives. Information about companies in the field of biotechnology was obtained on the basis of a field survey, conducted under the MSB TechNet cross-border project, which served as an input into the Competence Map of the "Super Region" of Upper Austria - South Bohemia. Excursions and meetings with management took place with most of the important companies.

In assessing the potential of the South Bohemia companies, various awards won by the companies were also taken into account - such as CZECH TOP 100, Štíky českého byznysu (Tigers of Czech Business) in the South Bohemia Region, awards won by employers in the region and the Cross-Border Cooperation Award. The SWOT analysis was commented on by stakeholders and SBCC members.

7. Proposal of Domains of Smart Specialisation in the Conditions of the South Bohemia Region

The basic selection criterion in the area of smart specialisation was the identification of an area which reflects the current (the existing) competitive advantage of the region. The competitive advantage may be based on the cost benefit and geographical location (so far the predominant sources of competitive advantage in the case of the Czech economy), or on knowledge and innovation in a particular sector of economic activity. In terms of smart specialisation, the competitive advantage which is based on the innovation capacity of the region is decisive.

BIOTECHNOLOGY for sustainable community development

All national and regional economies will, sooner or later, have to respond to global trends associated with the environmental sustainability of economic development¹. The required responses to these trends represent a significant development potential for companies and regions that are able to come up with suitable solutions and technologies. For companies, to address these complex challenges will mean to implement fundamental organisational, technical and social innovations.

It follows from the analysis that the South Bohemia Region has specific assets and strengths that offer the potential for the use of these trends and the resulting changes to develop the local economy. These are mainly the following assets and strengths:

- a significant specialisation of the South Bohemia Region lies in **Biotechnology**, especially **green** (plant and animal) and **white** (industrial and environmental). This specialisation complements the knowledge domain of “Biotechnology and Biomedicine” at the national level, which includes red biotechnology (pharmaceutical and medical biotechnology and biotechnology used for diagnostic purposes),
- numerous successful and innovation companies in traditional sectors (linked to the food-processing industry and agriculture, including fishing). A detailed screening of commercial companies can be found in the 2012 Biotechnology Yearbook (available at www.gate2biotech.cz),
- high-quality research at the Biology Centre of the ASCR, public research institution and the University of South Bohemia in České Budějovice with a number of research achievements in fields that stimulate the development of biotechnology. The equipment of both phases of the South Bohemian Science and Technology Park is also primarily oriented at the field of biotechnology,
- the newly established CEBIO Czech Biotechnology Platform aims at increasing the competitiveness of all the entities involved through the interconnection of the application and research spheres.

The development of biotechnology for sustainable development can be linked with a number of sub-objectives that together may significantly shift the socio-economic development of the entire region:

- by combining biotechnology, agriculture and the production of food and beverages, the region can position itself as a pioneer and subsequently the leader in the field of healthy (and at the same time tasty) nutrition,
- by combining the region’s profile as a “green” region attractive in terms of a healthy lifestyle with a clean and picturesque cultural landscape and tourist attractions, it is possible to respond to the natural trend of outflow of top talent to larger centres or abroad. Moreover, through a significant unique specialisation based on high-quality research, successful companies and an environment attractive for living, some top talent may be acquired from elsewhere,
- the above combinations of sub-assets create new opportunities for the development of specific forms of tourism and the balancing of development in major centres and rural areas.

¹ The main trends are especially (i) an increasing pollution of air, water and soil; (ii) the growing population and the resulting demands on the sufficiency of agricultural production; (iii) global warming and the related macro-regional climate changes and the frequency of major economic damages. These three global mega trends are serious in themselves. However, the greatest challenges for the global economy and society are related to the interaction of the mega trends. For example, regional climate change (warming associated with more frequent and stronger droughts) associated with the growing demands on the extent and quality of agricultural production.

MECHANICAL ENGINEERING AND MECHATRONICS

Mechanical engineering is one of the main sectors in the South Bohemia Region with a long-standing tradition, high efficiency and a critical mass of companies with strong innovation potential. It follows from the analytical data that the dominant focus lies in conventional and unconventional technologies of processing materials for the production of machining centres, hydraulic components for the transport and aircraft industry and automotive components. On the basis of consultations with representatives of the business sector, it is possible to specify the priority areas of needs, which are innovations in design activities using advanced materials and technologies; thermal energy, energy machinery and equipment; the treatment and energy recovery of residual municipal waste; new technologies and innovations in materials engineering.

Major players in the sector have already entered into a Sector Agreement.

Mechanical engineering is closely linked to the area of mechatronics. Based on the demand and needs of regional companies (in close cooperation with Robert Bosch and the CTU in Prague), a new four-year Bachelor's programme of Mechatronics has been opened at the University of South Bohemia in České Budějovice.

Special continuity can be seen in the interconnection of Mechatronics with the field of food-processing and other biotechnologies that are among the profile fields of the South Bohemia Region.

ELECTRICAL ENGINEERING

Electrical engineering and electro-energetics are among the key sectors in the South Bohemia Region with a very strong growth potential (another field being considered for the conclusion of a regional Sector Agreement). The priority areas of needs defined on the basis of available analytical data and consultations with representatives of the business sector are the development and implementation of new technologies in production, including the streamlining of production processes, new technologies and innovations in materials engineering. The key area in the field is a sufficient number of qualified employees, from secondary vocational education to top researchers in the field.

NATIONAL SPECIALISATION

In terms of smart specialisation, there are companies operating in other fields of the manufacturing industry in the South Bohemia Region; however, these do not form a critical mass in the region. If such companies consider getting involved in a specific vertical tool, it is possible to add them under national knowledge domains identified as follows: materials research; information and communication technologies; electronics and photonics; advanced manufacturing technology; biotechnology and biomedicine, industrial design.

Horizontal tools and type activities undertaken in Key Support Areas A - C are suitable for companies across all sectors.

Proposal Part of Regional RIS 3

Vision

The South Bohemia Region is attractive for living and working especially for talented people, and offers attractive conditions for business, investment and innovation, both in traditional sectors and in new sectors that use the knowledge base of the emerging local science and research sphere.

Key Change Areas

Key Change Area A - High-Quality Human Resources

The main objective of the area of High-Quality Human Resources is to improve the qualifications of human resources so that they are adequately prepared for the demands of the regional labour market, which will reduce unemployment and at the same time increase the competitiveness of companies that acquire such human resources.

Last but not least, the area of human resources aims to attract new and retain the existing top researchers in regional science and research institutions and companies.

The Change Area seeks to address the following issues:

- lack of high-quality human resources, especially in technical and science-oriented fields,
- low motivation of students to study science and technology,
- insufficient work with preschool children in awakening their interest in nature and technology,
- outflow of skilled workers and researchers outside the region and abroad,
- graduates of technical universities who do not return to the region,
- lack of professional and technical skills of graduates when they start their jobs,
- a long adaptation process of graduates starting in various companies.

These facts are supported by the structure of study fields of graduates in the South Bohemia Region and a survey among representatives of South Bohemian companies.

Key change area A: High-quality human resources		
Strategic objectives in the key change area A:		Indicators of strategic objectives / key change areas:
<ul style="list-style-type: none"> - A.1. Improving the quality and availability of human resources. 		<ul style="list-style-type: none"> - a change in employers' satisfaction with the quality of graduates of technical schools - the number of excellent R&D workers in the region
Strategic Objective A.1. - Improving the quality and availability of human resources.		
Specific objectives	Specific objective indicators	Typical activities / projects / operations
<ul style="list-style-type: none"> • <i>A.1.1. Increasing interest in education in technical and science-oriented fields</i> 	<ul style="list-style-type: none"> • <i>The proportion of graduates of science and technology at the level of secondary and tertiary education</i> 	<ul style="list-style-type: none"> • <i>technical and science-oriented kindergartens</i> • <i>technical and science-oriented clubs at elementary schools</i> • <i>improving career guidance in schools</i> • <i>long-term work with talents with a view of their application in the region (scholarship aid)</i> • <i>a science centre for children, pupils and students focused on hands-on activities and interactive exhibitions</i> • <i>excursions of pupils and students of elementary and secondary schools to companies</i> • <i>suburban science camps and summer schools</i> • <i>roadShow in elementary and secondary schools (science popularisation shows)</i> • <i>technical competitions and Olympiads</i>

<ul style="list-style-type: none"> • <i>A.1.2. Increasing the relevance of education to the needs of the regional labour market</i> 	<ul style="list-style-type: none"> • <i>A change in the share of unemployed graduates in selected fields</i> • <i>The proportion of successful graduates of lifelong learning and retraining in the labour market/the unsuccessful ones</i> 	<ul style="list-style-type: none"> • <i>creation of new/modified training courses in collaboration between schools and companies</i> • <i>support of teachers' internships in companies</i> • <i>involvement of top experts in educational processes</i> • <i>shadowing of managers in companies</i> • <i>support of students' work experience in companies and support in students' acquisition of the necessary skills (Professional Council, Technology and Education Consortium)</i> • <i>development of human resources in companies - professional and specific training of human resources</i> • <i>retraining courses required by the labour market</i> • <i>Technology Institute of the University of South Bohemia in České Budějovice</i> • <i>lifelong learning and inclusive education</i> • <i>the establishment of a system of quality assessment of schools and teacher training</i>
<ul style="list-style-type: none"> • <i>A.1.3. Attracting new and retaining the existing top researchers</i> 	<ul style="list-style-type: none"> • <i>The number of R&D contracts with a minimum duration of 2 years</i> • <i>The number of recurring contracts</i> • <i>An increase in publications in reviewed journals (at least by 15 %).</i> • <i>The amount of money gained from the participation in international projects</i> 	<ul style="list-style-type: none"> • <i>recruitment actions of science and research institutions and companies</i> • <i>creating a career system for R&D employees</i> • <i>developing an environment for cutting-edge research (innovated/modernised laboratories and workplaces)</i> • <i>scholarship programmes for postdoctoral scholars</i>
<ul style="list-style-type: none"> • <i>A.1.4. Developing entrepreneurship in the system of secondary, tertiary and lifelong education</i> 	<ul style="list-style-type: none"> • <i>The share of graduate start-ups/the total number of graduates.</i> 	<ul style="list-style-type: none"> • <i>motivation for entrepreneurship at all levels of education (educational programmes/courses)</i> • <i>training and international professional education of employees in R&D in management, marketing, B2B, innovation and technology transfer.</i> • <i>raising awareness of successful innovation and science and research activities in the region (lectures at all levels of education)</i>

<ul style="list-style-type: none"> • <i>A.1.5. The development of research and education infrastructure</i> 	<ul style="list-style-type: none"> • <i>The number of projects/educational programmes newly implemented on the acquired equipment</i> 	<ul style="list-style-type: none"> • <i>the development of an environment allowing for enhancing the quality of education (infrastructure, instrumentation and material equipment)</i> • <i>the development of an environment allowing for cutting-edge research (infrastructure, instrumentation and material equipment)</i>
<p>Strategies and regional documents that are used as a basis for strategic and specific objectives:</p> <ul style="list-style-type: none"> - The Development Programme of the South Bohemia Region - PA1 - The RIS of the South Bohemia Region - not explicitly mentioned; however, a change in this respect is implied 		
<p>Conditions of and barriers to the implementation of interventions in the key change area:</p> <ul style="list-style-type: none"> - <i>The absence of laws to define professional education</i> - <i>Poorly defined competences of managers of educational institutions for strategic changes in the curriculum</i> 		

Key Change Area B - Cooperation and technology transfer

The main objective of the area of Cooperation and Technology Transfer is the establishment of partnerships and the support of cooperation between companies and science and research institutions that will contribute to an increase in the companies' competitiveness. In the case of results of the mutual research and development activities, it is necessary to ensure a sufficient patent and legal protection.

The change area aims at addressing the following issues:

- lack of cooperation between academic institutions and entities of economic practice: poorly set legal mechanisms of cooperation, lack of mutual trust and different expectations,
- insufficient knowledge and use of patent and legal protection in relation to the results of research and development activities,
- insufficient scope and quality of services for technology transfer,
- non-functional platforms for long-term mutual cooperation between companies and academic institutions,
- a discrepancy between the focuses of the academic and the business sector in technical fields,
- insufficient interdisciplinary interconnection of institutions and companies,
- lack of corporate involvement in R&D programmes,
- lack of personnel in R&D with professional knowledge of management, marketing, B2B, innovation and technology transfer.

The above facts are based for example on the indicator of R&D Expenditures in the Regions of the Czech Republic by the type of R&D activity. Based on the specific focus of science and research institutions primarily on biotechnology, it may be said that the expenditure on basic research has outweighed the expenditure on applied research in the South Bohemia Region in recent years. The available statistical sources indicate a very low involvement of the application sphere in research and development programmes (Alfa, TIP, 7th Framework Programme).

Key change area B: Cooperation and technology transfer		
Strategic objectives in the key change area B:		Indicators of strategic objectives / key change areas:
<ul style="list-style-type: none"> - B.1. The development of cooperation between research organisations and other entities 		<ul style="list-style-type: none"> - the volume of funds obtained from projects based on partnerships between companies and R&D institutions or partnerships between R&D institutions and foreign partners - the number of joint patent applications - PCT, EPO, USPTO - revenues of R&D institutions from contractual research
Specific objectives	Specific objective indicators	Typical activities / projects / operations
<ul style="list-style-type: none"> • <i>B1.1. Strengthening cooperation between companies and R&D institutions</i> 	<ul style="list-style-type: none"> • <i>The number of companies involved in platforms and clusters</i> • <i>The volume of funds obtained from projects based on contractual research (from supported and follow-up projects)</i> 	<ul style="list-style-type: none"> • <i>innovation vouchers</i> • <i>support services of STP and TTC</i> • <i>a comprehensive offer of regional science and research capacities (catalogs of equipment and expert services)</i> • <i>Knowledge Transfer Partnership</i> • <i>the development of field-specific platforms and cluster initiatives</i> • <i>the promotion of individual sectors (e.g. the Biotechnology Portal)</i> • <i>intensification of inter-regional, cross-border and international cooperation (technology and innovation fairs in cross-border cooperation)</i> • <i>the support of shared infrastructure (co-working centres, training centres, centres of strategic services)</i> • <i>setting up an incentive system for R&D institutions inciting collaboration with the application sphere</i> • <i>professional training of workers in the field of R&D in management, marketing, B2B, innovation, technology transfer, the popularisation of science and science communication</i> • <i>the support of Contractual and Applied Research between research organisations and the business sector.</i>
<ul style="list-style-type: none"> • <i>B1.2. Strengthening transnational cooperation and increasing the mobility of researchers</i> 	<ul style="list-style-type: none"> • <i>The number of internships with a minimum duration of 6 months</i> • <i>The number of successful</i> 	<ul style="list-style-type: none"> • <i>international research internships</i> • <i>increasing the absorption capacity of the region in European science and research programmes (e.g.</i>

	<p><i>projects submitted under Horizon 2020 and other European programmes</i></p>	<p><i>Horizon 2020, Eureka, Eurostars) with the support of regional authorities (consulting and information services in the preparation of projects)</i></p> <ul style="list-style-type: none"> • <i>creating short-term jobs designated for foreign experts</i> • <i>supporting the participation of leading researchers in international research consortia</i>
<p>Strategies and regional documents that are used as a basis for strategic and specific objectives:</p> <ul style="list-style-type: none"> - The Development Programme of the South Bohemia Region - PA1, the RIS of the South Bohemia Region 		
<p>Conditions of and barriers to the implementation of interventions in the key change area:</p> <ul style="list-style-type: none"> - <i>Very difficult to convince researchers who have worked in an academic environment their entire lives to cooperate with the application sphere</i> 		

Key Change Area C - Business Development

The main objective of the key area of Business Development is to create such support tools that accompany the initiator of an innovative idea from the birth of the idea to the establishment of a company and emergence of highly qualified jobs and the sale of finished products in foreign markets.

The change area aims at addressing the following issues:

- a low number of new highly qualified jobs,
- lack of support for start-ups and innovation companies,
- difficult access to funds for new innovation projects,
- little involvement of venture capital in marketable innovative ideas,
- a lower degree of entrepreneurial innovation activities in areas with a higher added value,

- difficult to promote companies in foreign markets.

After the implementation of activities focused on Key Change Area C, it should be easier and faster to get an innovative idea and product to the target market with secured funding and with the possible assistance of a strategic partner.

Key change area C: Business development		
Strategic objectives in the key change area C:		Indicators of strategic objectives / key change areas:
<ul style="list-style-type: none"> - C1 - Business development 		<ul style="list-style-type: none"> - the number of new innovation companies - the growth of revenues of companies from abroad
Specific objectives	Specific objective indicators	Typical activities / projects / operations
<ul style="list-style-type: none"> • C 1.1 Improving the quality of services for start-ups 	<ul style="list-style-type: none"> • The number of companies in the incubation programme of the STP • The number of newly created jobs 	<ul style="list-style-type: none"> • incubation programmes at the STP • consultancy in the preparation of business plan and the basic setting of the company strategy • search for strategic partners to join a company (the business angels network) • crowd-funding • competitions for the best business plan • a Microloan Fund and guarantees for innovative ideas • vouchers for start-ups to finance the initial stage in the transition from employment to entrepreneurship • basic business courses for graduates and the unemployed
<ul style="list-style-type: none"> • C 1.2. The development of innovation potential in companies including IPP 	<ul style="list-style-type: none"> • The number of international patent applications submitted by companies. • The number of companies with non-investment expenditure on R&D in the minimum amount of 3 million 	<ul style="list-style-type: none"> • a specialised consultant for companies looking for new innovation opportunities for their development (see Upper Austria - Technology and Innovation Management) • competence centres (preparation, construction, operation) • consulting services for the area of IPP • support of the commercialisation of R&D results - finishing the innovation product - "Proof of Concept" and possibly TT • the support of company investments in products and services with a higher added value • service activities for investors (HR, incentives, relationships with R&D and educational institutions, etc.) • information services for companies - departmental meetings, business forums, the monitoring of grants

		<ul style="list-style-type: none"> • <i>search for partners in innovation projects</i> • <i>the development of an environment for research, development and innovation activities in companies (equipping the premises, the support of experimental research, the introduction of innovations, etc.)</i> • <i>the processing of innovative ideas in the form of digital storytelling and pitching</i> • <i>meetings of companies and research teams in a certain field for the mutual introduction of their activities (cooperation exchanges, matchmaking)</i> • <i>the stabilisation of top technical experts in the form of financial, housing and social support.</i>
<ul style="list-style-type: none"> • <i>C1.3. Increasing the internationalisation of companies</i> 	<ul style="list-style-type: none"> • <i>The number of supported companies</i> • <i>with a x% growth of revenues from abroad</i> • <i>The number of supported companies that have expanded the export markets</i> 	<ul style="list-style-type: none"> • <i>specialised consultancy on target markets and their development trends</i> • <i>business missions</i> • <i>specialised management training and coaching</i> • <i>the evaluation of global potential and help with internationalisation.</i>
<p>Strategies and regional documents that are used as a basis for strategic and specific objectives:</p> <ul style="list-style-type: none"> - The Regional Development Programme - PA1, the RIS of the South Bohemia Region 		
<p>Conditions of and barriers to the implementation of interventions in the key change area:</p> <ul style="list-style-type: none"> - The instability of the legislative environment 		

The implementation structure in the South Bohemia Region

The Regional Innovation Committee of the South Bohemia Region:	
Members of the Regional Innovation Committee:	<p><i>South Bohemia Region</i></p> <p><i>The Statutory City of České Budějovice</i></p> <p><i>Representatives of the science and research community (the University of South Bohemia in České Budějovice, the Biology Centre of the ASCR, the Institute of Microbiology of the ASCR in Třeboň)</i></p> <p><i>Representatives of the innovation infrastructure (JAIP, o.p.s., JVTP a.s., ENKI STP, TC Písek)</i></p> <p><i>Representatives of companies (BELIS, s.r.o., Budějovický Budvar, n.p., EGE spol. s r.o., JE Temelín, INPRESS a.s., Jihostroj, a.s., KOOH-I-NOOR HARDTMUTH a.s., Madeta a.s., Motor Jikov Group a.s., Robert Bosch, spol. s r.o., Viscofan CZ s.r.o., ZVVZ a.s.)</i></p>
Establishment of the Regional Innovation Committee	<i>March 2014</i>
Innovation platform for: CE BIO Czech Biotechnology Platform	
Members of the innovation platform for biotechnology:	<p><i>The University of South Bohemia in České Budějovice</i></p> <p><i>The Biology Centre of the ASCR</i></p> <p><i>JAIP</i></p> <p>- members from the application sphere are being formed</p>
Establishment of CE BIO	<i>The establishing General Meeting took place on 4 March 2014</i>
Innovation platform for: The Technology and Education Consortium under the ITB	
Members of the technical innovation platform:	<p><i>Founding members:</i></p> <p><i>ITB</i></p> <p><i>Tábor Secondary School of Mechanical Engineering,</i></p> <p><i>Velešín Secondary Technical School of Mechanical and Electrical Engineering and</i></p> <p><i>Strakonice Tertiary Vocational School, Secondary Vocational School and Secondary Technical School of Crafts and Services</i></p> <p><i>Now expanded by further 12 schools and representatives of mechanical engineering companies (Motor Jikov Group a.s., Jihostroj, a.s., ZVVZ a.s.)</i></p>
Establishment of the Consortium	<i>Established on 22 April 2013</i>
Innovation platform for: Czech Biogas Association (CzBA)	

Members of the innovation platform for biogas:	<i>The CzBA brings together more than 60 members including leading science and research institutions, suppliers and manufacturers of technologies, operators of biogas plants and other experts not only from the Czech Republic</i>
Has the CzBA been established?	Yes
<i>etc... for other innovation platforms</i>	
The expected executive unit for the coordination and implementation of the regional RIS 3: <i>has not yet been proposed, will be based on projects proposed in the Action Plan and approved by the Regional Innovation Committee</i>	
Regional S3 Manager	<i>Ing. Michaela Novotná</i>
Is the Regional S3 Manager part (e.g. employee) of a regional organisation?	<i>An employee of the South Bohemian Agency for Support to Innovative Enterprising, civic consulting centre - JAIP, o.p.s.</i>

Action plan for project implementation

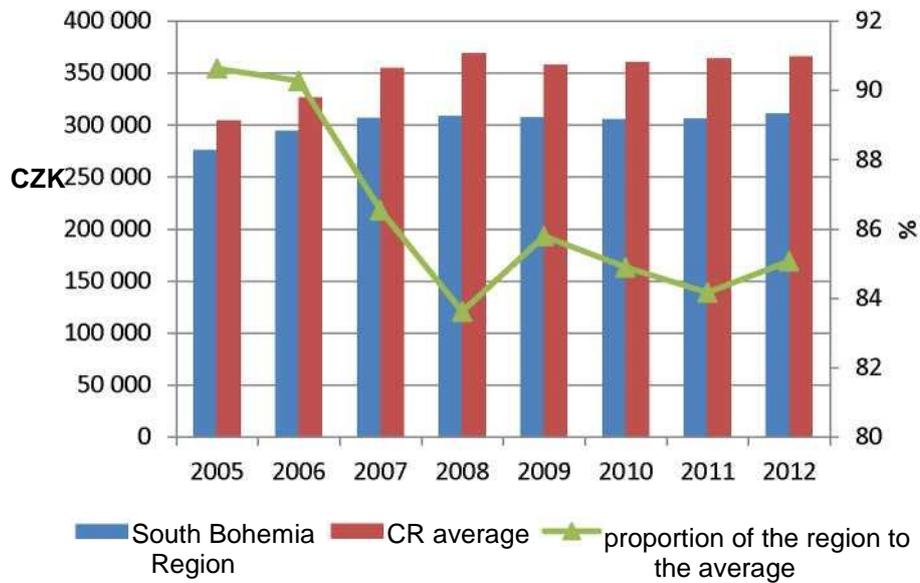
The achievement of strategic objectives and activities identified as key objectives and activities in the Regional Innovation Strategy will take the form of implementing Tools/Projects.

The Supported Projects will be entered in the Project Action Plan that will be approved by the Regional Innovation Committee of the South Bohemia Region 1x per year and recommended for approval by the Council of the South Bohemia Region.

Each project in the Action Plan will be accompanied by a detailed project fiche that will contain an accurate description of the project, the project outcome including the measurement indicators, responsibility for implementation, responsibility for funding, budget, plan of activities etc.

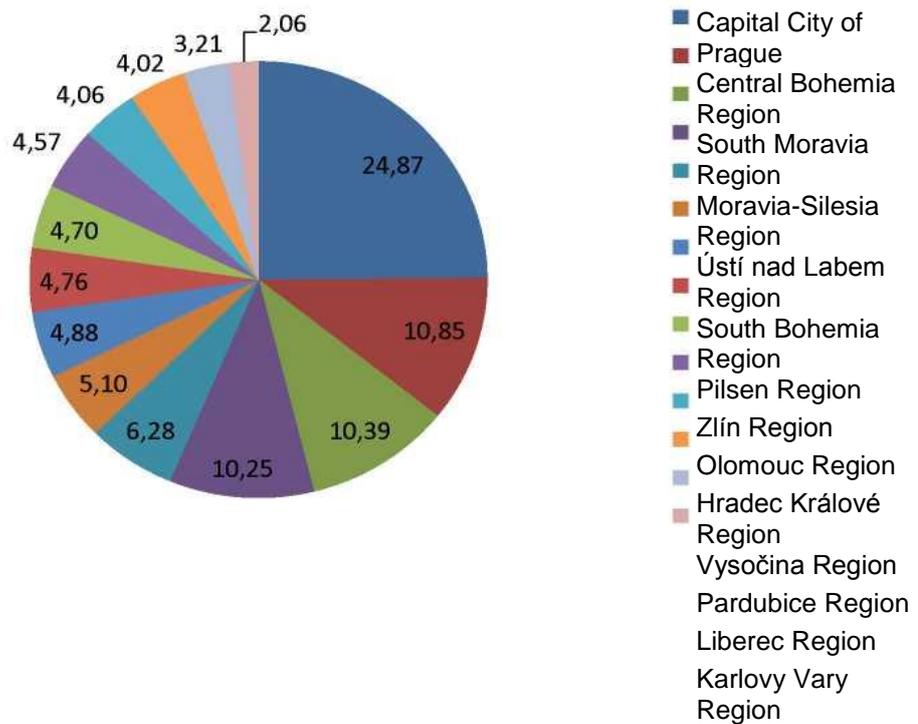
Annex 1 - List of charts and tables

Chart 1: Formation and development of gross domestic product per capita in the South Bohemia Region between 2005 and 2012



Source: CZSO

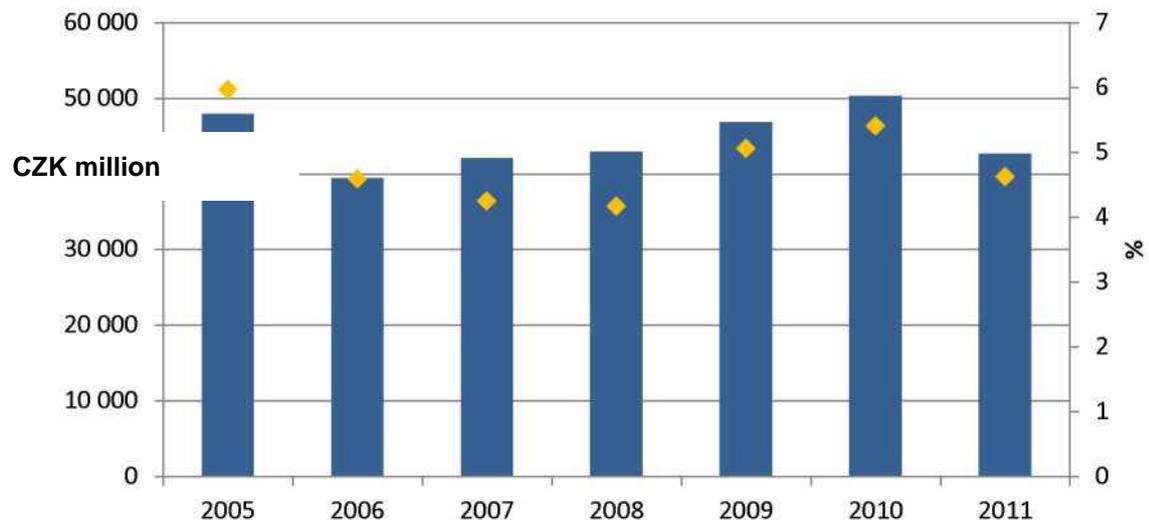
Chart 2: Share of regions in the formation of GDP of the Czech Republic in 2011 - calculated based on current prices in CZK million



Source: CZSO

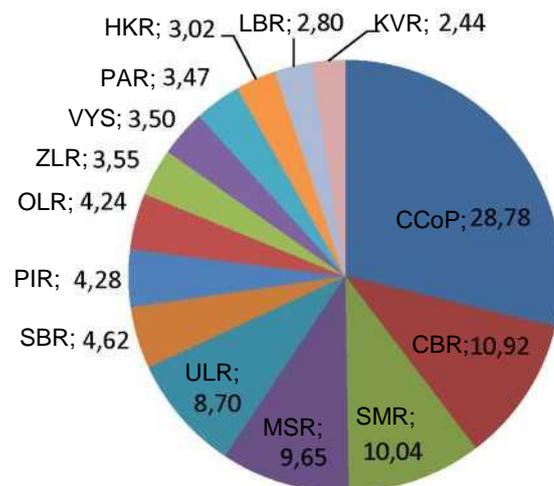
Gross fixed capital formation (GFCF)

Chart 3: Gross fixed capital formation in the South Bohemia Region and its share in the Czech Republic



Source: CZSO

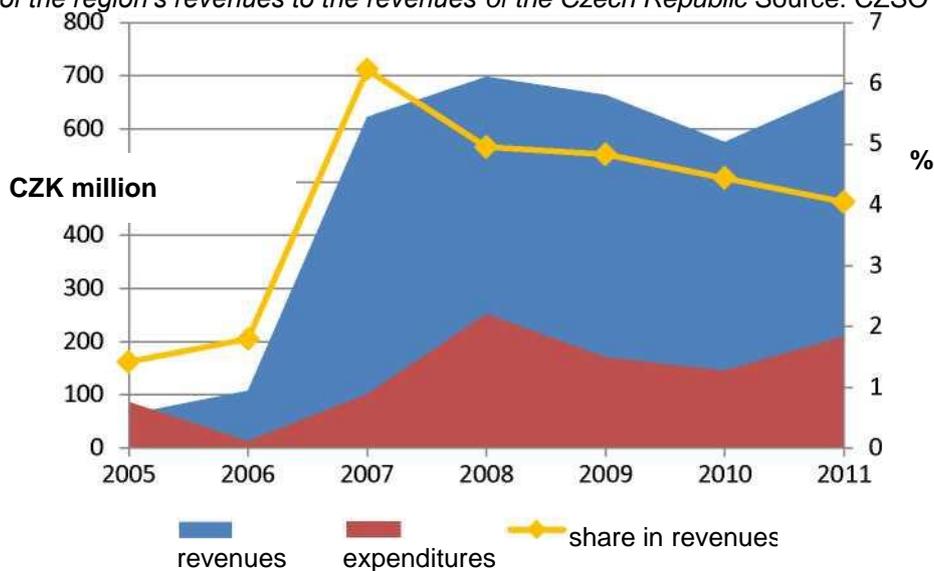
Chart 4: Share of regions in the gross fixed capital formation in the Czech Republic



Source: CZSO

Technology balance of payments

Chart 5: Development of the technology balance of payments of the South Bohemia Region and the proportion of the region's revenues to the revenues of the Czech Republic Source: CZSO



Source: CZSO

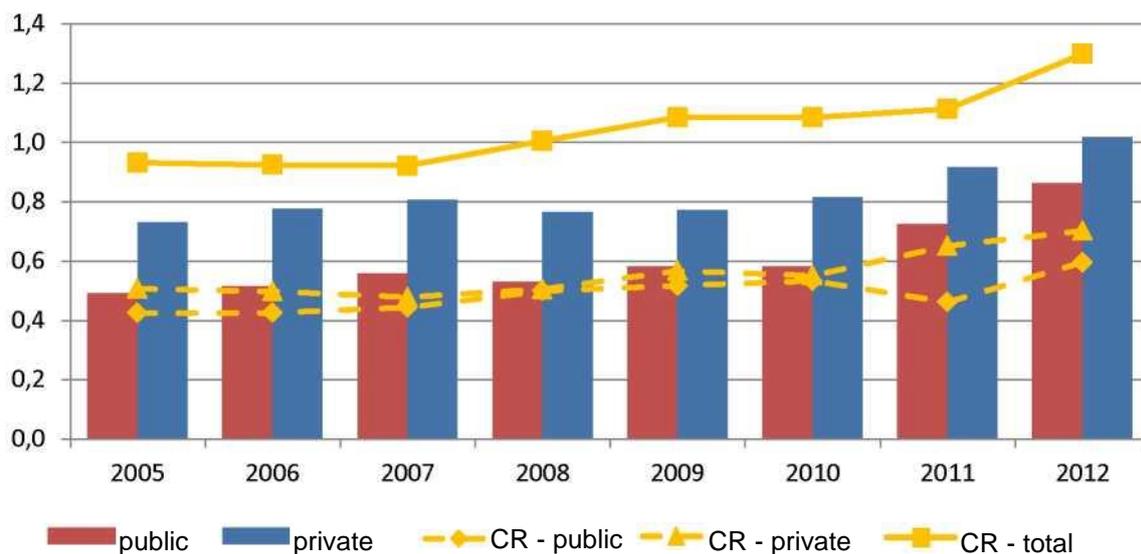
Private and public expenditures on R&D in proportion to GDP

Table 1: Development of expenditures on R&D as a share in GDP in the South Bohemia Region and the Czech Republic between 2005 and 2012

year	South Bohemia Region			Czech Republic			difference		
	public	private	total	public	private	total	public	private	total
2005	0.49	0.73	1.22	0.42	0.51	0.93	-0.07	-0.23	-0.29
2006	0.51	0.78	1.29	0.43	0.50	0.92	-0.09	-0.28	-0.37
2007	0.56	0.81	1.37	0.44	0.48	0.92	-0.12	-0.33	-0.44
2008	0.53	0.77	1.30	0.50	0.51	1.00	-0.03	-0.26	-0.29
2009	0.58	0.77	1.35	0.52	0.57	1.08	-0.06	-0.20	-0.27
2010	0.58	0.81	1.40	0.53	0.55	1.08	-0.05	-0.26	-0.31
2011	0.72	0.92	1.64	0.46	0.65	1.11	-0.26	-0.27	-0.53
2012	0.86	1.02	1.88	0.60	0.70	1.30	-0.27	-0.32	-0.58

Source: CZSO

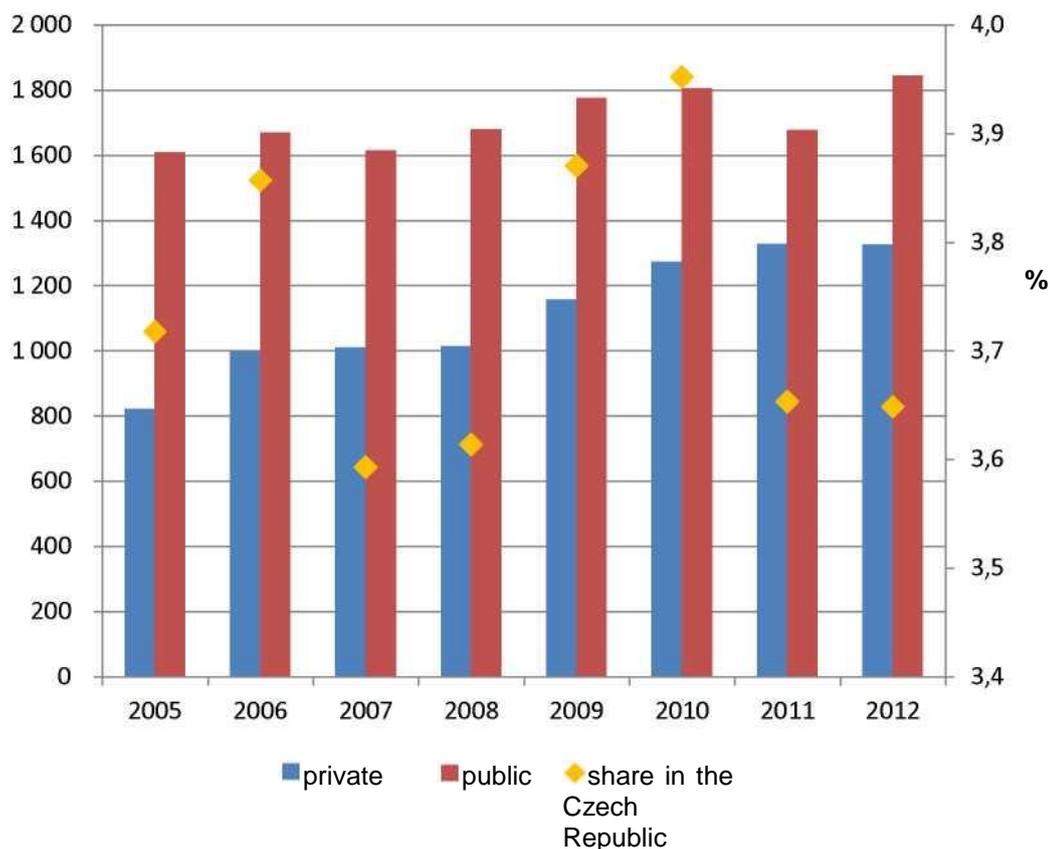
Chart 6: Development of expenditures on R&D as a share in GDP in the South Bohemia Region between 2005 and 2012



Source: CZSO

Employees in R&D

Chart 7: Development of the number of employees in R&D in the South Bohemia Region and the proportion of such employees to the total number of employees in R&D in the Czech Republic between 2005 and 2012



Source: CZSO

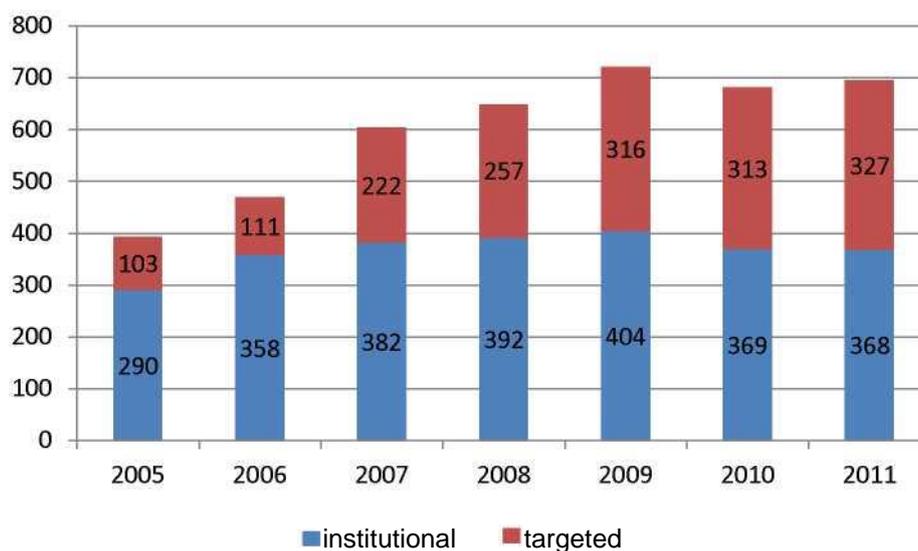
Table 2: Development of the proportion of R&D employees to 1,000 economically active citizens in the South Bohemia Region between 2005 and 2011

year	South Bohemia Region			Czech Republic			difference		
	public	private	total	public	private	total	public	private	total
2005	5.35	2.73	8.08	7.36	5.27	12.64	-2.01	-2.54	-4.56
2006	5.51	3.29	8.81	7.58	5.72	13.30	-2.07	-2.43	-4.49
2007	5.18	3.24	8.42	7.93	6.13	14.06	-2.75	-2.89	-5.64
2008	5.33	3.22	8.55	7.98	6.26	14.24	-2.65	-3.04	-5.69
2009	5.78	3.76	9.54	8.00	6.33	14.34	-2.22	-2.57	-4.80
2010	6.02	4.24	10.26	8.02	6.76	14.79	-2.00	-2.52	-4.53
2011	5.55	4.40	9.94	8.34	7.31	15.65	-2.79	-2.91	-5.71

Source: CZSO

Institutional and targeted support for R&D

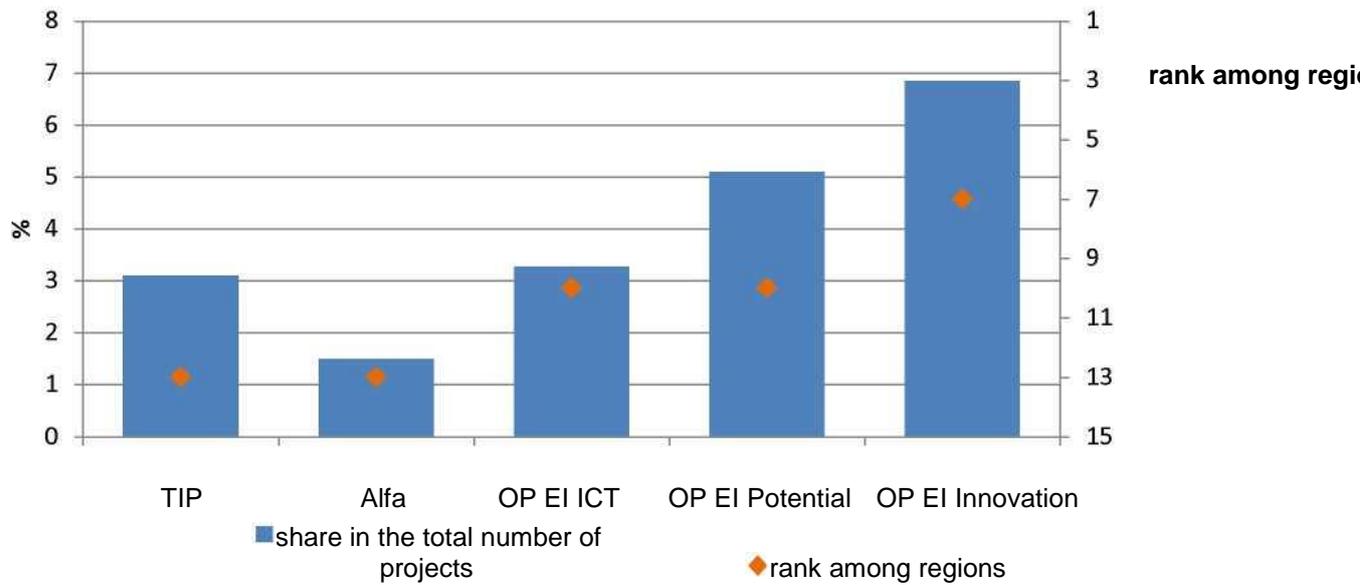
Chart 8: Development of the types of state aid in the South Bohemia Region between 2005 and 2011 (CZK million)



Source: CZSO

Number of supported projects in selected support programmes

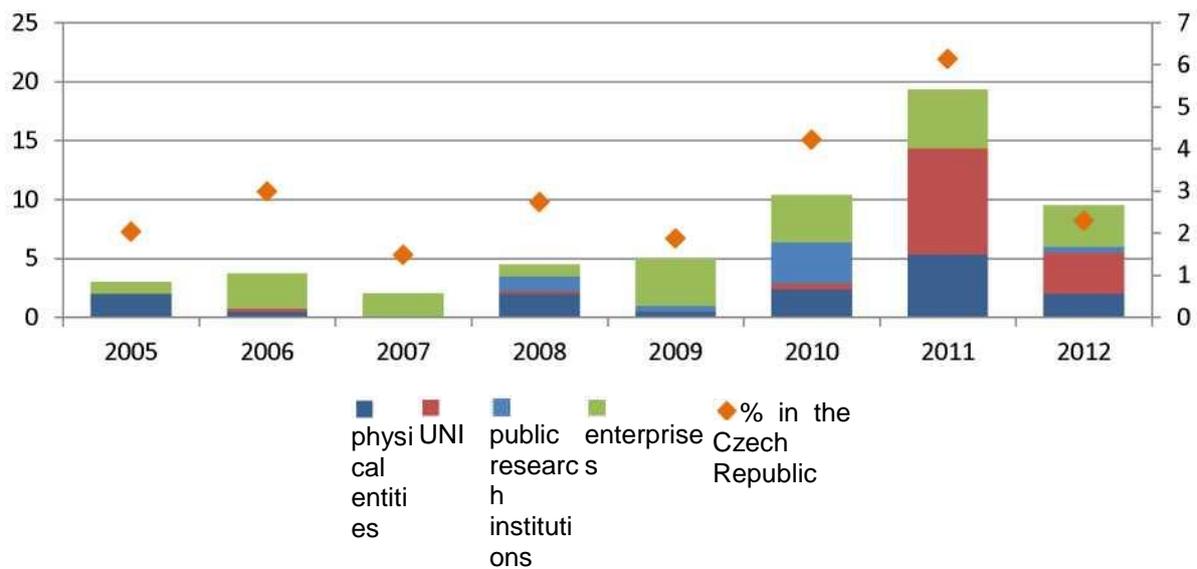
Chart 9: Share of the South Bohemia Region in selected R&D support programmes over the period of their duration and the rank among regions



Source: CZSO

Patents granted

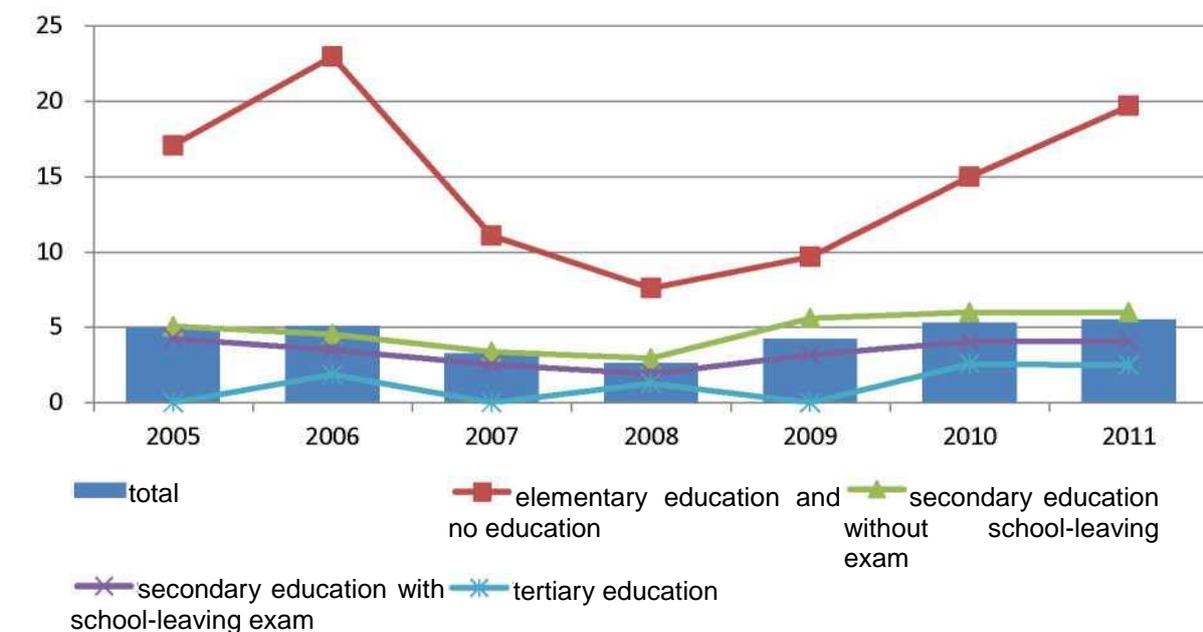
Chart 10: Number of patents granted by the type of applicant in the South Bohemia Region



Source: CZSO

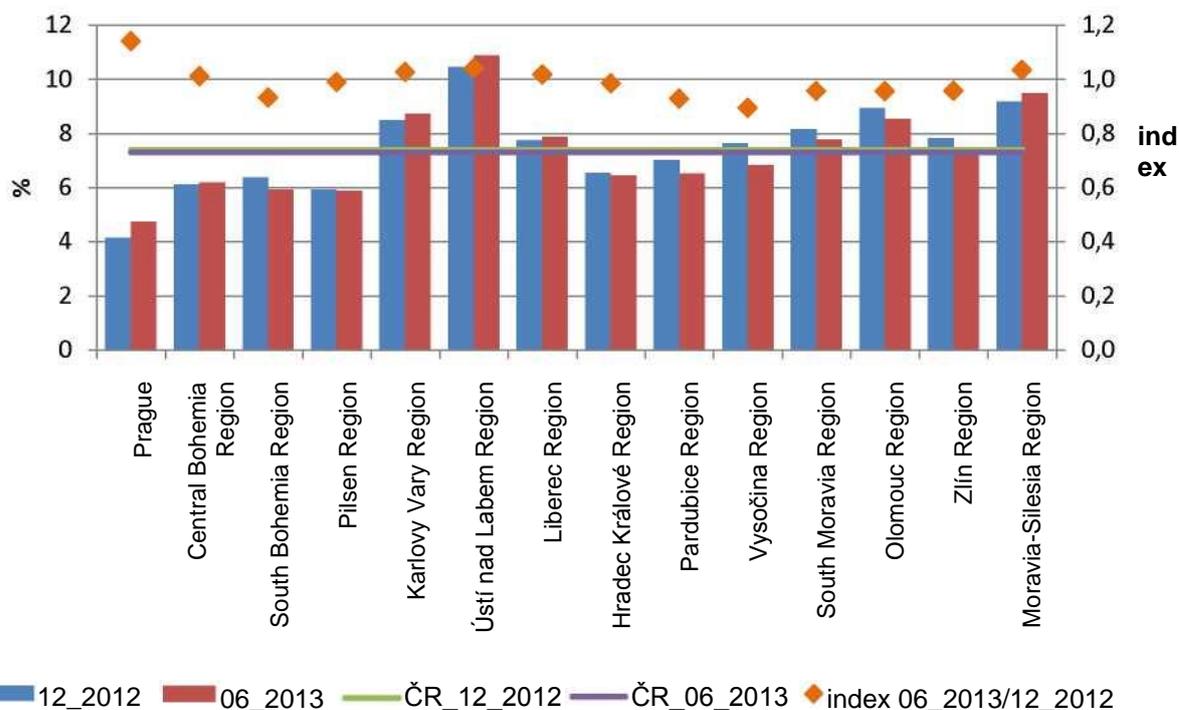
Unemployment

Chart 11: General unemployment rate in the South Bohemia Region according to the educational structure between 2005 and 2011 [%]



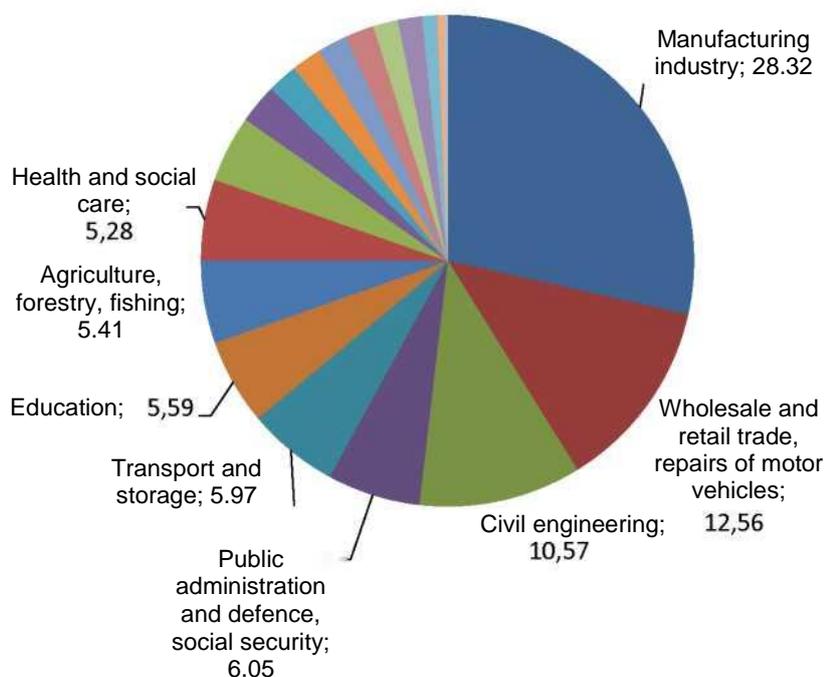
Source: CZSO

Chart 12: Current development of the unemployment rate in the regions of the Czech Republic



Source: CZSO

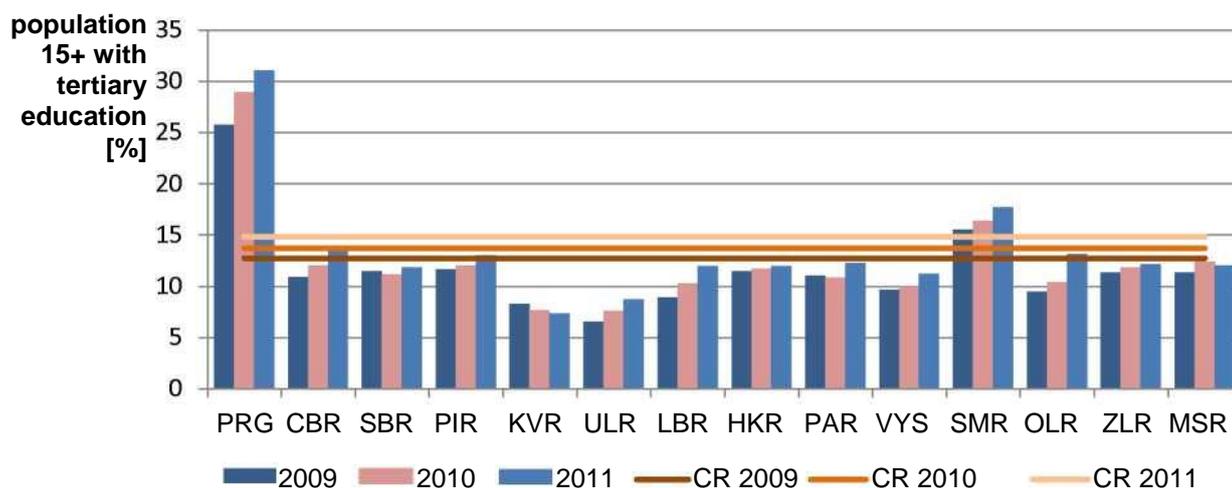
Chart 13: Structure of employment in the South Bohemia Region in 2011 according to NACE



Source: CZSO

Proportion of workforce with tertiary education

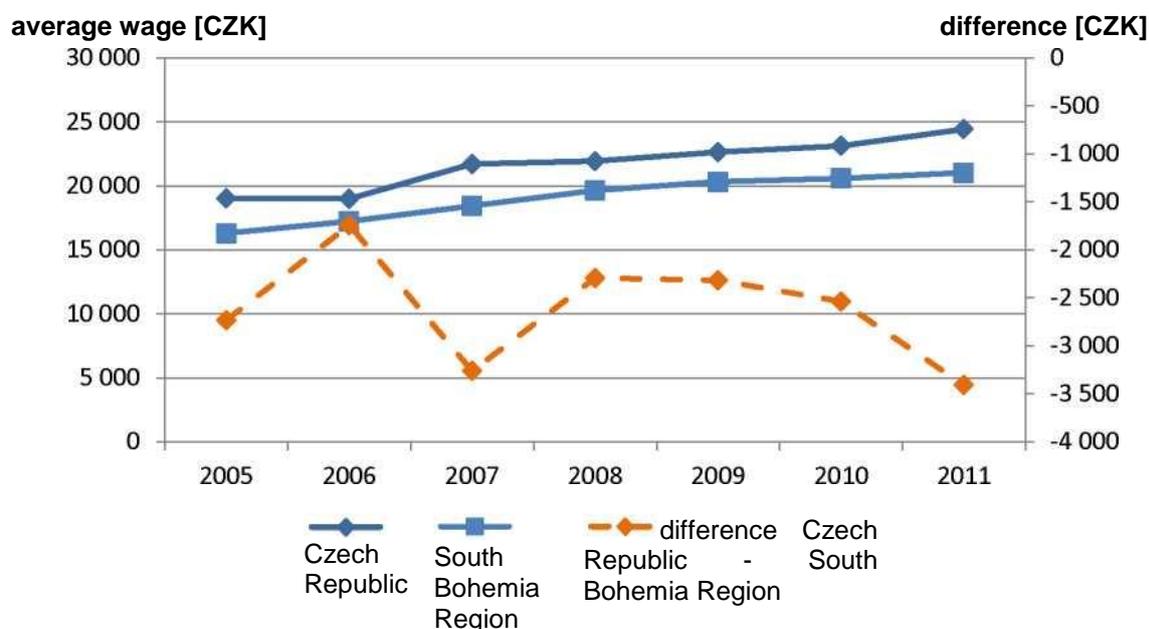
Chart 14: Proportion of university-educated population in the regions of the Czech Republic



Source: CZSO

Average wages

Chart 15: Development of gross monthly wages in the South Bohemia Region and in the Czech Republic and the development of their differences from 2005 to 2011



Source: CZSO

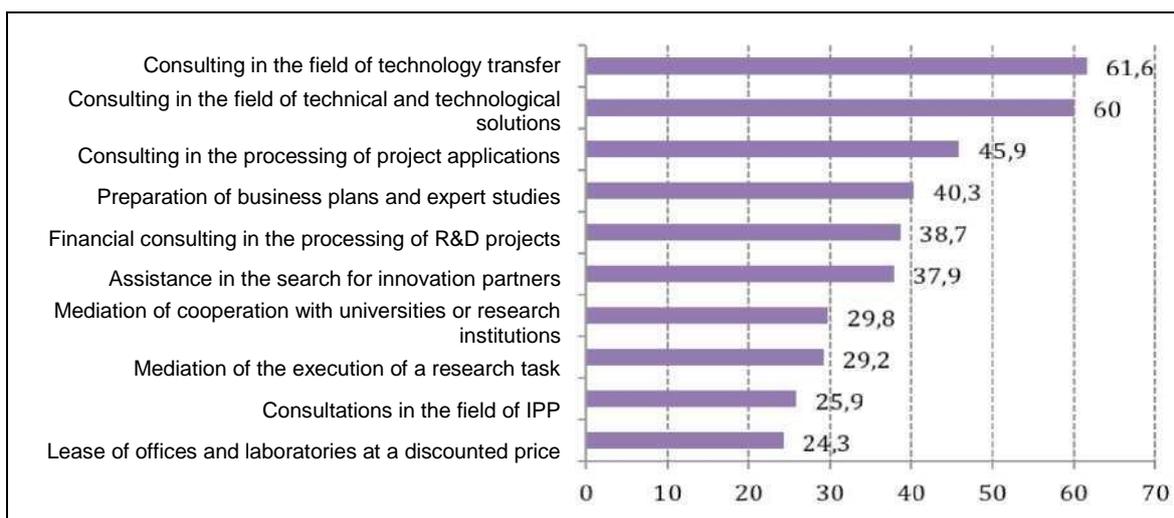
Table 3: Overview of existing support schemes in the South Bohemia Region

Title of scheme/support/project	Implemented and funded by	Financial allocation/last 2 years	Brief assessment (for whom it is intended, what it should bring or has already brought)	Note
Project: The South Bohemian Science and Technology Park - Phase II A	Implemented by the South Bohemian Science and Technology Park, whose sole shareholder is the South Bohemia Region. Co-funded under the OP EI (75 %)	160 million (construction + equipment)	The project builds on Phase I of the construction of the South Bohemian Science and Technology Park, implemented by the University of South Bohemia in České Budějovice. This is an expansion of the existing STP capacity by further 2,600 m ² . In addition to service areas, the laboratory space will be divided into 3 parts: A biotechnology laboratory, a technology laboratory focused on alternative agriculture and food-processing, and a laboratory with a multi-field focus.	Completion of the South Bohemian Science and Technology Park - 6/2014.
Management of the České Budějovice STP/consultations for start-ups/assistance in the creation of business plans	JAIP - in the context of a contribution of the South Bohemia Region to activities in the public interest	2 million/2 years	Services for companies and students in the field of innovation, provided by JAIP - used to support start-ups and to prevent the outflow of talent from the region	

Programme of Advantageous Regional Loans of the South Bohemia Region	South Bohemia Region	8 million/2 years	Designated for the South Bohemian SMEs. If a start-up wants to obtain a loan, the South Bohemia Region takes into account the evaluation by means of the BLUES methodology, carried out by JAIP/STP.	
Administration of the www.gate2biotech.cz portal www.gate2biotech.com	JAIP - in the context of a contribution of the South Bohemia Region to activities in the public interest	500 thousand /2 years	Association of Information on Core Business in the South Bohemia Region - biotechnology. Portal of Central European importance. Visit rate - Czech version - 11 thousand, English version - 7 thousand unique IP addresses/month. Designated for businesses, students, researchers and the public.	
Consultations in the field of IPP free of charge	JAIP - in the context of a contribution of the South Bohemia Region to activities in the public interest	CZK 50 thousand /2 years	Designated for entrepreneurs and researchers who own a product that needs to be protected by intellectual property.	
Business Missions	South Bohemia Region	300 thousand /2 years	Designated for South Bohemian entrepreneurs who want to establish business at the place where the mission is going. They will have their costs partially covered.	
Morning For Business	South Bohemian Chamber of Commerce (SBCC) - in the context of a contribution of the South Bohemia Region to activities in the public interest	20 thousand /1 year	Regular informal monthly meetings of entrepreneurs held at the SBCC (mainly for SBCC members). At the beginning, a 15-minute-long host speech on the topic that follows from the previous meeting. After that, a brief introduction of the participants and free discussion.	New activity
Associations and clubs - HR Club, IT Club, Marketing and Advertising Club, Associations: Transport, Civil Engineering, Tourism, Real Estate	SBCC - in the context of a contribution of the South Bohemia Region to activities in the public interest	15 thousand /club/year	Regular meetings of representatives of one business sector - exchange of experience, education, cooperation.	
Speed business meetings	SBCC - in the context of a contribution of the South Bohemia Region to activities in the public interest	New	A brief meeting of entrepreneurs in one field to establish cooperation.	New activity

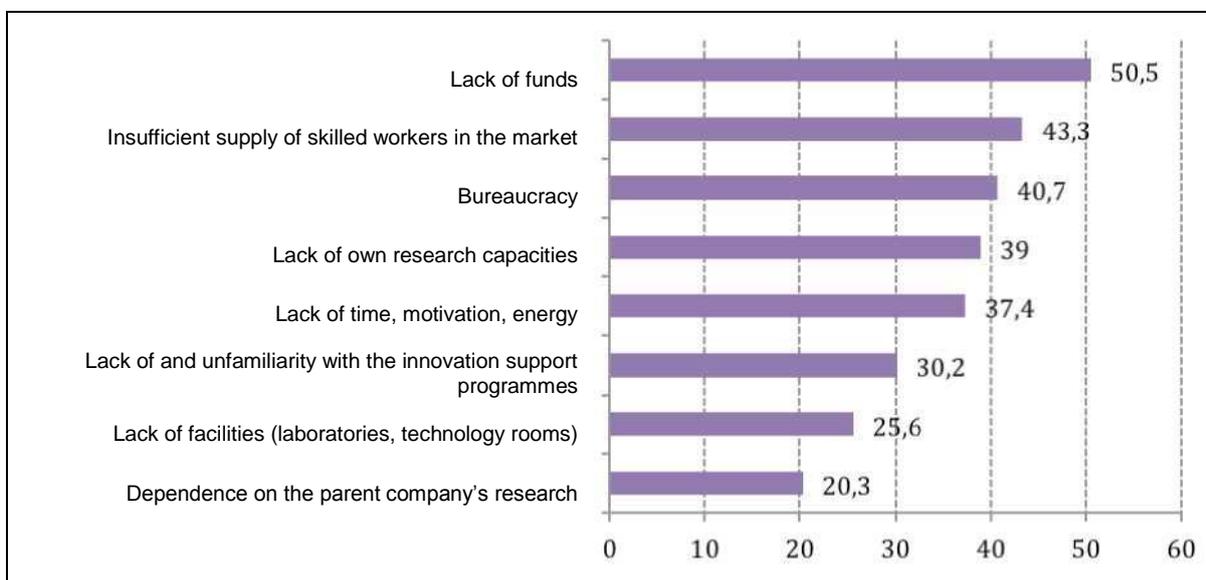
Source: JAIP

Chart 16: Defining the needs of SMEs in relation to innovation (%)



Source: JVTP, a.s. 2012

Chart 17: The most serious obstacles to the implementation of innovation in SMEs in the South Bohemia Region (%)



Source: JVTP, a.s. 2012

Annex 2 - List of terminology and abbreviations

Terminology:

Applied research	Experimental or theoretical work undertaken to acquire new knowledge for the future utilisation in practice.
Business Angel	or a private investor, provides the necessary capital for the development of fast-growing companies or start-ups. The investment is usually active, while the investor wants to be involved in the respective business, either directly or as a mentor.
Innovation	It is an update and expansion of the range of products and services and the associated markets, the creation of new methods of production, supply and distribution, the introduction of changes in management, the organisation of work and working conditions and qualification of the workforce.
Innovation centre	The mission of an innovation centre is to create an environment for companies with innovation potential and to support their establishment and development. In practice, this means creating an environment for companies with innovation potential through the introduction of best practices in the areas of financing, cooperation with universities and the commercial sector, construction and operation of STP and incubators and IPP, and supporting the establishment and development of such companies through the mediation of fundraising, consultancy, contacts, business opportunities and business premises.
Cluster	It is a network of independent companies and knowledge institutions (universities, research and development centres, technology companies) that links research institutions and customers and creates a production chain with an added value. A cluster is formed on the territorial principle.
Targeted research	A converter (intermediate) between basic research and applied research.
Business Incubator	A complex of services focused on start-ups whose aim (as its name suggests) is to help such start-ups in the initial stage of their existence. The purpose of the incubator is to concentrate several support tools at one place for start-ups and to add the possibility of a reduced rent until the start-up manages to implement its business plan and be independent. In practice, a business incubator is a facility which an entrepreneur can visit and present his/her idea or intention; the incubator will then offer basic advice on possible grants, funding, preparing a business plan, etc.
Industrial research	A part of applied research the results of which are used, through development, in new products, technologies and services designed for business.
Seed capital	A rudimentary area of funding new projects. The capital to test concepts (for example through market research), mainly for the initial product development and for the establishment of a new company.

Venture capital	Funds usually from (a group of) private investors who are focused on investing in projects or companies in the early stage of development. This type of investors focuses on projects that promise a high added value but are risky. The generally expected appreciation rate is around 30 % p.a.
Spin-off	A company formed by one or more employees of an organisation who leave the organisation to establish a new, secondary company, which is nevertheless based on the elements of the activities of the primary organisation. The primary organisation often has a dominant influence in the new company.
Technology transfer	The process of purposeful, time-limited transfer of knowledge enabling the innovation of products, the methods of production, operation and testing, and services; the transfer of technical solutions and guidelines related to construction, manufacture and the use of new products from the field of creation to the area of practical use.
Science and Technology Park	A physical area but also a cyberspace (virtual space) controlled by a specialised team which provides superior services and whose main objective is to increase the competitiveness of the region. An institution oriented at the field of research, technology and innovative business. It is used to create the conditions for a dynamic development of innovation, technology transfer and the establishment of new spin-off companies.
Venture capital see above	
Development	A systematic and creative use of research findings or other ideas to produce new or improved materials, products or equipment, or to implement new or improved technologies, systems and services, including the acquisition and testing of prototypes, pilot equipment or demonstration equipment.
Research and development	A systematic and creative work undertaken to acquire new knowledge or to use such knowledge in practice.
Basic research	Experimental or theoretical work undertaken to acquire knowledge of the foundations or essentials of the observed phenomena, the explanation of their causes and possible impacts of the use of the acquired knowledge.

Abbreviations:

ASCR	Academy of Sciences of the Czech Republic
BA	Business Angels
BC ASCR	Biology Centre of the Academy of Sciences of the Czech Republic
BIC	Business Innovation Centre
CEBIO	Czech Biotechnology Platform
CERGE	Centre for Economic Research and Graduate Education
TTC	Technology Transfer Centre
GCRC	Global Change Research Centre, public research institution
CZSO	Czech Statistical Office

CzBA	Czech Biogas Association
EU	European Union
ERA	European Research Area
EPO	European Patent Office
ERDV	European Region Danube - Vltava
GDP	Gross domestic product
UA	Upper Austria
JAIP	South Bohemian Agency for Support to Innovative Enterprising
SBCC	South Bohemian Chamber of Commerce
SBR	South Bohemia Region
USB	University of South Bohemia in České Budějovice
SBSHRD	South Bohemian Society for Human Resource Development
JVTP, a.s.	South Bohemian Science and Technology Park
MIT	Ministry of Industry and Trade of the Czech Republic
SME	Small and medium-sized enterprise
MEYS	Ministry of Education, Youth and Sports of the Czech Republic
NUTS II Southwest	the Southwest cohesion region, which consists of the South Bohemia Region and the Pilsen Region
OP EIC	Operational Programme Enterprise and Innovation for Competitiveness
OP RDE	Operational Programme Research, Development and Education
OP EC	Operational Programme Education for Competitiveness
OP RDI	Operational Programme Research and Development for Innovations
RES	Renewable energy sources
BI	Business Incubator
BIC	Business Innovation Centre
PrIC	Project Innovation Centre
PA	Priority Axis
PCT	Patent Cooperation Treaty
PR	Public relations
RDP	Regional Development Programme
FDI	Foreign direct investment
R&D	Research and Development
RAC SBR	Regional Agrarian Chamber of the South Bohemia Region
RDA	Regional Development Agency of South Bohemia

RIS	Regional Innovation Strategy
RIS 3	Regional Innovation Strategy of Smart Specialisation
EU SF	EU Structural Funds
UTMSBR	Union of Towns and Municipalities of the South Bohemia Region
SCDP	Strategic City Development Plan
SB	State budget
SS	Secondary school
CSTP	Companies of science and technology parks of the Czech Republic
TC	Technology Centre
TC ASCR	Technology Centre of the Academy of Sciences of the Czech Republic
TA CR	Technology Agency of the Czech Republic
TT	Technology transfer
USPTO	United States Patent and Trademark Office
R&D	Research and development
RDI	Research, Development and Innovation
VC	Venture capital
UNI	University
ITB	Institute of Technology and Business in České Budějovice
STP	Science and Technology Park
ENKI STP	ENKI Science and Technology Park