PRAGUE REGIONAL INNOVATION STRATEGY (PRAGUE RIS3)

[September 2014]

The Prague Regional Innovation Strategy was approved by the Prague Municipal Assembly on 11 September 2014
(Resolution No. 41/2)

The strategy formation process included representatives of the Prague local government, universities,
research organisations, the business sector, non-profit organisations and the relevant State organisations and agencies.

Prague Regional Innovation Strategy (Prague RIS3)
IPR Prague, Office of Research, Development and Innovation

An electronic version of the document is available at www.praha.eu and www.rishmp.cz

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INTRODUCTION

The Prague Regional Innovation Strategy (PRIS) is a specifically focused conceptual document that elaborates on selected targets of the Prague Strategic Plan. Its goal is to develop the city's potential in the field of research, development and innovation and to find a suitable role for the Prague local government in this process. It is intended for all those who have an interest in increasing the competitiveness of the capital and the domestic and international awareness of the city's economic parameters and qualities.

The document was created with the help of many external partners who got involved either at working meetings or through the public consultation process. Their suggestions were of particular importance in helping the document become a realistic set of objectives that the city can achieve in the coming years. The maintenance of this quality will be overseen by a partner platform, the Prague Innovation Council, which is comprised of representatives of the city, research organisations, the business sector and selected State institutions.

The strategy also serves to meet the ex-ante conditionality for using support from the European Structural and Investment Funds for 2014 to 2020. It is thus a key foundation for Operational Programme Prague – Growth Pole of the Czech Republic.

The strategy will be implemented through a regularly updated action plan as a set of medium-term projects supported by the city.

PRAGUE

The City of Prague is the economic, scientific, academic, cultural and political centre of the Czech Republic. It has a specific position in the regional structure of the country, being both a municipality and a region, as well as a NUTS II level cohesion region. Its economic performance has long been high in comparison with other regions of the European Union, numbering among the 15 regions with the highest GDP per capita based on purchasing power parity against the EU average in the group of NUTS II regions and ranking around 70th among NUTS III regions. This figure does not however provide a realistic view of the living standard and purchasing power of the population compared to other EU regions (see Chapter 2.3).

There are over 1.2 million inhabitants of Prague, representing 12% of the population of the Czech Republic. A further 300,000 are present in Prague daily for various reasons. Prague's economy forms 25% of the national GDP, with the service sector accounting for four fifths of the economic base from the perspective of creating both added value and employment. The unemployment level has long been half that of the nationwide average.

Prague has access to a highly educated labour force. The level of university-educated inhabitants is around 30% of those over 15 years, which is twice the national average. The percentage of inhabitants with secondary and higher education is 85%. There are eight public universities in Prague and few dozen further institutions of tertiary education. More than a third of all post-secondary students in the country study in Prague, and of those 70% are from regions outside of Prague.

The scientific and research capacity of the Czech Republic is largely concentrated in Prague, both in terms of public research institutions and dozens of other organisations and businesses that deal with research and development. The city is headquarters to branches of important multinational companies, in some cases including their research centres.

Prague is also an attractive place for living and working and provides its inhabitants and visitors with many opportunities for employment and leisure activities.

Table 1: Basic comparison of Prague and Czech Republic

INDICATOR	PRAGUE	CZECH REPUBLIC	PRAGUE SHARE
Land area	496 km²	78 866 km²	0,6 %
Population (31 March 2013)	1 246 240	10 512 782	11,9 %
GDP (2012)	€ 37.7 bn	€ 153 bn	24,6 %
Average gross monthly salary (2013)	€1,230.2	€ 926.2	133 (CR=100)
Research and development expenditure (2012)	€ 1,006 m	€ 2,879 m	35,0 %
R&D expenditure as percentage of GDP (2012)	2,67 %	1,89 %	142 (CR=100)
R&D employees (FTE, 2012)	22 164	60 223	36,8 %
Researchers (FTE, 2012)	12 837	33 169	38,7 %
R&D workplaces (2012)	680	2 778	24,5 %
University students (31 December 2013)	135 902	368 409	36,9 %
Share of innovative enterprises (2010-2012)	45,1 %	43,9 %	---

Source: CSO, Ministry of Education, IPR Prague

METHODOLOGY AND CONTEXT FOR DRAWING UP THE PRAGUE RIS

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PART 1

METHODOLOGY AND CONTEXT FOR DRAWING UP THE PRAGUE RIS

1.1 UPDATING THE REGIONAL INNOVATION STRATEGY

Supporting the development of the potential for innovation is an important means of strengthening the economic development of European regions. Regional innovation strategies have been supported since the start of the last decade by the European Union, which provides both financial and methodological support for their creation. Innovation strategies are considered an important development document and a platform for cooperation among all the participants of the innovation system at the regional level.

Prague decided to update the regional innovation strategy, which was created under the BRIS project in 2004, the implementation of which did not bring about the desired improvement of the innovation environment, for one thing because it was not accompanied by any political commitment from the Prague local government. The updated strategy reflects the current situation in the field of research, development and innovation in the region and, in accordance with the concept of "smart specialisation", focuses primarily on the development of partnership relationships with all the participants in innovation processes and the application of appropriate tools for the support thereof targeted on a limited number of priorities based on the strengths and competitive advantages of the region.

The conceptual framework for the PRIS is the Prague Strategic Plan. The Strategic Plan is also undergoing an update, which will be completed during 2015. Both documents were created in coordination.

The updating of the PRIS took place under the direction of the Capital City of Prague local government, which launched the process following consultation with representatives of the scientific, university and business sectors in spring 2011. The city is a relevant player in the innovation environment and should take on the role of an active facilitator with the awareness that many systemic changes must be effected at the national level and that the direct connection between the city's activities, its economic performance and budget revenue is limited. The goal is to hit upon a specific and effective position for the city in the innovation system that complements the activities of the central State administration bodies and other organisations that operate nationwide.

PRIS also serves as one of the fundamental base for the Operational Programme Prague – Growth Pole of the Czech Republic which determines the focus of support from European Structural and Investment Funds (ESIF) for 2014 to 2020 in the area of research, technological development and innovation. The Operational Programme is also the main instrument for realising PRIS. This is precisely the reason it was necessary to incorporate the concept of smart specialisation according to the methodology published by the European Commission in May 2012. All the EU Member States and regions thus took the step to update or adjust their national or regional innovation strategies, including Prague.

In the Czech Republic the smart specialisation agenda falls under the Ministry of Education, Youth and Sport (MEYS), which established a RIS3 Coordinating Council (a coordination and supervisory body for implementation of the RIS3 strategy in the Czech Republic at the national and regional level) and on the basis of a competition procedure established an "S3 facilitator" (consortium of companies) that provides for preparation of the National Smart Specialisation Strategy of the Czech Republic, which includs 14 regional annexes. For each region the ministry has provided for an "S3 manager" who is responsible for preparing the regional annex and who is supported methodologically by the S3 facilitator.

1.2 INVOLVING PARTNERS IN CREATING THE RIS

In 2011-2013, the update of the PRIS was elaborated with the support of the Prague Council for Research and the Economy (PRVEK), an informal advisory body to the mayor at the time, Bohuslav Svoboda. The main drafter is the Prague Institute of Planning and Development (IPR Prague). During the drafting process the PRIS agenda moved from the Office of Strategy and Development to the newly created Office of Research, Development and Innovation.

A number of external partners got involved in updating the strategy through the Working Group for Updating the PRIS, which operated in 2011 and 2012 and where representatives of the organisations on PRVEK were delegated. In February 2012, two workshops took place that laid down the foundations for strategic objectives and measures. The workshops were attended by a total of 50 representatives of 27 organisations operating in the field of research, development and innovation or which have experts for these areas.

The next step was the launching of the website **www.rishmp.cz** in March 2012, which acts as an official and publicly accessible source of information on PRIS. Working documents as well as background studies and analyses were placed on this website. An important instrument for providing access to the update for the general public was the inclusion of online forms for members of the public to enter suggestions.

In December 2012 and September 2013 two workshops on the issue of smart specialisation were held. The first served to inform the partners and general public, the second to formulate a proposal for domains of specialisation, i.e. competitive activity areas (see Chapter 2.5).

Coordination of work on the Strategic Plan, PRIS and Operational Programme Prague – Growth Pole of the Czech Republic was presented at a panel discussion in November 2013. In April 2014, this was followed by publishing of the draft strategy on the website with the opportunity to submit comments on it.

The role of PRVEK, which ended as an advisory body for PRIS in 2013, passed on in April 2014 to the Prague Innovation Council, a new partner platform for the city and representatives of the research and private sector (see Chapter 3.4).

The activity of the Prague Innovation Council will be supplemented by innovation platforms, working groups set up by the council, which facilitate the development of the "entrepreneurial process of discovery" in the region, i.e. searching for a competitive edge and methods of taking advantage of it for the economic development of the region. The working groups will also prepare projects or sets of projects for the action plan.

In preparing the PRIS the methodological leadership of an S3 facilitator was used with a focus on drawing up the regional annexes for the Capital City of Prague, which is an excerpt of the PRIS.

1.3 LINKS BETWEEN RIS AND STRATEGIC DOCUMENTS AND SUPPORT INSTRUMENTS

The Prague Regional Innovation Strategy is a document that ties in to the Prague Strategic Plan and a number of strategic documents at the regional, national and European level that form the framework for business and innovation; see the following overview.

Table 2: Main related strategic documents

EUROPEAN	NATIONAL	REGIONAL
Europe 2020 strategy[1]	International Competitiveness Strategy[2] National Research, Development and Innovation Policy[3] National Innovation Strategy[4] Concept for Support of Small and Medium Enterprises[5] National Smart Specialisation Strategy[6]	Prague Strategic Plan[7] City of Prague Long-Term Plan for Education and the Development of the Educational System 2012-2016[8]

Note: All links provided below lead to Czech version of the documents.

1 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:CS:PDF
2 http://www.businessinfo.cz/cs/clanky/strategie-mez-konkurenceschopnost-cr-7325.html
3 http://www.vyzkum.cz/FrontClanek.aspx?idsekce=682145
4 http://www.mpo.cz/dokument91200.html
5 http://www.mpo.cz/dokument119071.html
6 http://www.msmt.cz/strukturalni-fondy/ris3-strategie-cr
7 http://www.iprpraha.cz/clanek/83/co-je-strategicky-plan
8 http://skoly.praha-mesto.cz/87130_Dlouhodoby-zamer-vzdelavani-a-rozvoje-vzdelavaci-soustavy-hlavniho-mesta-Prahy-2012-2016

The Prague Regional Innovation Strategy, like the BRIS strategy from 2004 before it, also links to support from ESIF and for its realisation counts on the use of the planned Operational Programme Prague – Growth Pole of the Czech Republic. Yet PRIS is necessary for access to support in the period 2014-2020, as the existence of an innovation strategy is a prerequisite for being allocated support. Additionally, this innovation strategy must correspond to the concept of "smart specialisation". In the Czech Republic the smart specialisation agenda falls under the Ministry of Education, Youth and Sport, which is thus the guarantor for the National Smart Specialisation Strategy, which fulfils this task for all operational programmes focused on research, development and innovation. The National Smart Specialisation Strategy contains regional annexes for the individual regions of the Czech Republic. This is why the annex for the City of Prague region is an excerpt from the Prague Regional Innovation Strategy.

The new thematic operational programmes Research, Development and Education (under Ministry of Education, Youth and Sports) and Enterprise and Innovation for Competitiveness (under Ministry of Industry and Trade) will also be available for projects implemented on Prague territory. In realising their activities, entities working in the field of research, development and innovation can also take advantage of other support instruments, for example the programmes of the Technology Agency of the Czech Republic, the National Sustainability Programme, the EU's Horizon 2020 programmes, COSME.

1.4 PEER-REVIEW WORKSHOP

In November 2013, Prague took part in one of the peer-review workshops organised by the European Commission's S3 Platform, a special body acting as a research and methodological workplace for the agenda of smart specialisation. The workshops served so that regions preparing their strategies would have additional advice from independent experts, European Commission employees and representatives of other regions working on their strategies.

Each region had to prepare four questions for the workshop, the discussion of which was to bring new impulses for drawing up their strategy. At first, the core of the question was searched for in groups and may have been reformulated. Then recommendations were collected.

Prague submitted the following four questions:

- How should the potential of interregional cooperation in research, development and innovation be taken advantage of and what are appropriate support instruments for this?
- What are suitable measures for aiding the service sector, particularly creative branches?
- What are examples of innovative public sector demand at the regional level?
- How should large enterprises be approached and how can they be involved in developing an innovative environment?

In light of the state of the PRIS draft at the time the workshop was organised, the recommendations acquired served as a basis for the design of the strategy. The background materials from the workshop are available on the S3 Platform website[9]. The complete official report from the workshop is available at the PRIS website[10].

9 http://s3platform.jrc.ec.europa.eu/12th-peer-review-5-6-november-2013-potsdam
10 http://www.rishmp.cz/jnp/cz/dokumenty/index.html

ANALYSIS

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PART 2

ANALYSIS

2.1 BRIEF EVALUATION OF THE IMPLEMENTATION OF BRIS 2004

The Regional Innovation Strategy for Prague from 2004 (BRIS 2004)[11] was drawn up by a consortium made up of the Technology Centre ASCR (coordinator), the City Development Authority Prague (today IPR Prague) and the Euro Info Centre Prague under the methodological supervision of foreign partners.

The strategy contained thematic areas and measures that in the opinion of the document's drafters were essential for improving the conditions for developing the innovation system in both the capital and, directly or indirectly, in other Czech regions as well. The thematic areas and measures laid down by the document were as follows:

A. COMPETITIVE SECTOR OF INNOVATIVE ENTERPRISES
A.1 Support to the formation and development of regional sectoral clusters
A.2 Support to progressive and hi-tech branches in the region

B. ACTIVE INVOLVEMENT OF THE R&D BASE IN THE DEVELOPMENT OF INNOVATIVE ENTREPRENEURSHIP
B.1 Strengthening technology transfer, commercialisation of R&D results and cooperation between R&D institutions and the business sphere
B.2 Support to establishing spin-off companies
B.3 Greater involvement of enterprises in R&D activities at both regional and European level

C. HUMAN RESOURCES FOR INNOVATION
C.1 Training system for a dynamic labour market
C.2 Lifelong learning for knowledge-based economy

D. CONSULTING SERVICES AND INFRASTRUCTURE FOR INNOVATION
D.1 Development of a regional innovation infrastructure
D.2 Qualified consulting and services for innovation

E. FINANCIAL INNOVATION
E.1 Public financial support to innovation, entrepreneurship and building th innovation infrastructure
E.2 Stimulation of the use of commercial resources for innovation

F. INNOVATION AS A PART OF REGIONAL DEVELOPMENT
F.1 Innovative culture and framework conditions for innovations
F.2 Coordination of activities and strategic management of regional development in the field of innovation

G. INTERREGIONAL COOPERATION
G.1 Cooperation with EU regions and transfer of time-tested practice
G.2 Prague - national initiation and innovation centre

11 http://www.rishmp.cz/jnp/cz/dokumenty/bris_2004.html

The strategy thus aimed to address the issue of innovation in a comprehensive manner at all levels of the economy and society, and involve the research and business sector, professional organisations, the development agency, regional authorities, legislative bodies and many other players in the implementation process. The strategy included an Action Plan with 14 pilot projects, of which some were suitable for support from ESIF.

At the time it was completed the strategy was an ambitious and far-reaching document. Nevertheless it was not accompanied by any explicitly allocated sources of funding for realisation, nor any formal commitments for the parties involved or the stated coordinators for measures. In the end the city did not even discuss it in its political bodies; it was only provided as information to the Prague City Council and thus did not become a binding programme document. The above priorities and measures remain largely valid on the regional (and also national) level (see Chapter 3.1 below).

From the summary below it is clear that about half of the Action Plan was fulfilled. In view of the aforementioned absence of formal commitments and funding, implementation of the strategy depended exclusively on the initiative of the guarantors of the individual projects. The necessary systemic steps requiring coordination among the stakeholders never materialised however.

Table 3: Summary of BRIS action plan pilot projects and their state of realisation as of the end of 2013

ACTIVITY 1: REGIONAL COUNCIL FOR INNOVATION The project was not realised.
ACTIVITY 2: PRAGUE BUSINESS INCUBATOR The activity was realised through a project financed from the SPD 2 Prague programme "Innovation Centre and Business Incubator", the implementer of which was Technology Innovation Centre ČKD – a non-profit association founded by ČKD Nové Energo, the Technology Centre of the Academy of Sciences and the German company Energieteam Consult. The incubator was put into full operation in January 2008. As of the end of 2013 however it had ceased operating due to a change in ownership.
ACTIVITY 3: DEVELOPMENT OF A TECHNOLOGY TRANSFER CENTRE AT THE ACADEMY OF SCIENCES OF THE CZECH REPUBLIC This activity was fulfilled through the project "Centre for Technology Transfer", which supported both technology transfer activities and education in the field of innovation. It was financed from the programme SPD 3 Prague. The project was realised by the Technology Centre ASCR and ended in June 2008.
ACTIVITY 4: CENTRE FOR KNOWLEDGE AND TECHNOLOGY TRANSFER, CHARLES UNIVERSITY, PRAGUE This project was realised as part of the SPD 2 Prague programme (ended in April 2007). The implementer was Charles University. The project continues despite the end of funding from the SPD 2 programme. see **www.cppt.cuni.cz**
ACTIVITY 5: INNOVATION WEBSITE The project was not realised.
ACTIVITY 6: ESTABLISHMENT OF SECTORAL CLUSTERS The project was not realised.

ACTIVITY 7: PRAGUE GASTRONOMIC TRAINING CENTRE

The activity was realised as part of the project "Gastronomic Education Centre Prague", which was funded from the SPD 3 Prague programme. The project was realised by the Czech Chefs Association in cooperation with the Prague Economic Chamber. The project ended in June 2008.

ACTIVITY 8: PROGNOSIS OF TECHNOLOGICAL AND SECTORAL TRENDS IN THE REGION

The project was not realised.

ACTIVITY 9: UPDATING STRATEGIC DOCUMENTS

The primary strategic document for Prague is the Prague Strategic Plan, approved in 2000. In December 2008 the Prague City Assembly approved an updated version, followed in October 2009 by the Programme for the Implementation of the Prague Strategic Plan for the 2009-2015 Period, which primarily contains tasks for fulfilling the Strategic Plan in the given period, including tasks specially focused on supporting research, development and innovation.

ACTIVITY 10: MONITORING AND BENCHMARKING THE INNOVATION PERFORMANCE OF THE REGION

The objectives of the activity were partially fulfilled by the activities and results of the OMEN project[12]. Its goal was to create a system for evaluating and monitoring the effectiveness of results and interregional benchmarking of regional innovation strategies. Prague's representative was the Technology Centre ASCR. The project ended in November 2007.

ACTIVITY 11: PRAGUE'S PARTICIPATION IN THE NATIONAL SYSTEM OF SME AND INNOVATION SUPPORT

The project was not realised.

ACTIVITY 12: INTRODUCTION OF THE INTERNET IN PUBLIC LIBRARIES ESTABLISHED BY THE CITY OF PRAGUE AND BY INDIVIDUAL MUNICIPAL DISTRICTS

This activity was implemented as part of the SPD 2 programme as the project "Internetisation of Public Libraries in Prague" and its objective was to increase the accessibility of free internet connections in public libraries in Prague. The project's implementer was the Prague Municipal Library. The project was completed in December 2006.

ACTIVITY 13: TRAINING INFORMATION SYSTEM FOR SMALL AND MEDIUM-SIZED ENTERPRISES

The project was not realised.

ACTIVITY 14: INTER-REGIONAL COOPERATION AMONG BRIS PROJECT PARTNERS

Cooperation among partners continued with several projects by the Technology Centre ASCR, e.g. the OMEN and LNet projects[13].

Note: The activities marked black were realised; the ones marked grey were not.
Source: IPR Prague, 2014

Some activities were not realised according to the proposed concept, but certain analogous ones could be found. For example Acceleration – Programme for Supporting Business in the City of Prague, the website of which is a source of information for small and medium enterprises.

12 Optimal practices, development policies and predictive models for regions in an enlarged European Union (www.filasinternational.eu/omen-project/)
13 The Learning Network (www.strast.cz/cs/projekty/seznam-projektu/european-learning-network-lnet)

2.2 ANALYSES REALISED

Over the course of the analytical phase, aside from the available analyses drawn up at the national level, sometimes including a regional perspective, several analyses were prepared that focused directly on the City of Prague, which were drawn up by IPR Prague (then still named the City Development Authority Prague – CDAP) or externally. Below is an overview of these analyses with a brief description of their focus[14].

ANALYSIS OF REGIONAL DATA 2010 (CDAP, 2010)

This analysis provides a summary of the great amount of regionally oriented data for the City of Prague. It maps out the scientific research and educational institutions in Prague as well as businesses that are active in research and development. It provides a summary of human resources, expenditures and output of research and development, and of the participation of Prague-based entities in various support programmes. It also offers an international comparison of certain indicators with selected regions in the European Union.

HUMAN AND FINANCIAL RESOURCES IN THE BUSINESS SECTOR 2005-2009 (CDAP, 2010)

This analysis presents a range of data on the parameters and performance of the business sector in the field of research and development and compares Prague to the rest of the Czech Republic. The data demonstrate the specific characteristics of Prague's economy and the differing reactions of the business sector in Prague and outside Prague to the economic crisis.

PARTICIPATION OF PRAGUE ENTITIES IN FP7 AND CIP (CDAP, 2011)

This analysis offers an overview on the participation of Prague entities in the programmes of the EU's 7th Framework Programme for Research and Technological Development and under the Competitiveness and Innovation Framework Programme. In both cases institutions and businesses based in Prague form a significant proportion of the Czech beneficiaries.

SURVEY ON DEMAND FOR RISK CAPITAL (TC AS, 2011)

In connection with the move from subsidy support for businesses under the EU cohesion policy to support in the form of revolving financial instruments, CDAP had a pilot study done on the demand for risk capital. The study revealed interest in risk capital, along with a lack of information on sources and availability thereof.

EVALUATION OF SCIENTIFIC FIELDS FROM THE PERSPECTIVE OF RESEARCH DEVELOPMENT OUTLOOK IN THE PRAGUE REGION (INSTITUTE OF PHILOSOPHY ASCR + PROODOS, 2011)

This analysis attempted to identify the competitive scientific fields with a perspective for the future socioeconomic development of Prague. These are the natural and medical sciences, in particular solid-state physics, information and communication technologies, biomedicine and environmental protection.

14 Documents available at http://www.rishmp.cz/jnp/cz/dokumenty/index.html.

STRUCTURE OF THE BUSINESS SECTOR IN PRAGUE (CDAP, 2012)

This analysis demonstrated that the business sector in Prague is represented by an exceptionally high number and varied make-up of entities and the number of newly created firms markedly exceeds the number of those that ceased to exist. It also proposes criteria for support measures focused on the business sector.

THE IMPORTANCE OF CULTURAL AND CREATIVE INDUSTRIES IN THE EUROPEAN UNION, CZECH REPUBLIC AND CITY OF PRAGUE (CDAP, 2013)

Despite the ambiguous definition of the relevant sectors, this analysis documents the significant share of Prague cultural and creative entities in creating the region's added value and labour force, which falls in the range of 10-15%. At the same time, it points out that Prague accounts for roughly half of the nationwide values.

The submitted PRIS also made use of new data issued by the CSO at the end of 2013.

2.3 PROFILE OF PRAGUE IN THE FIELD OF RESEARCH, DEVELOPMENT AND INNOVATION

Prague as the centre of research in the Czech Republic must be seen in the national context with regard to a number of specific characteristics of the region. These include, for example, the specific structure of the economy with the dominance of services and a limited range of processing industries, the above-average educational structure of its residents, the concentration of public research institutions and the accompanying public expenditure on research and development.

Table 4 provides an overview of selected indicators describing the research and innovation environment in Prague. Some indicators are tracked based on the headquarters of the organisation, even though a large part of its activities may take place outside the area where that headquarters lies. In the case of GDP however, the CSO uses the "workplace method", which takes this phenomenon into account.

As is commented further on in the text, the research and innovation capacities of the Czech Republic, including qualified human resources, are largely concentrated within the capital. Prague is thus the main research and innovation centre of the Czech Republic and also an important source of university-educated residents for all the regions of the Czech Republic.

Table 4: Selected socioeconomic indicators on the City of Prague

INDICATOR	UNIT	2005	2006	2007	2008	2009	2010	2011	2012
gross domestic product	€ per capita	21,470	24,243	27,854	31,973	28,889	30,517	31,238	30,343
	% Prague/CR	24.1	24.3	24.8	25.4	25.3	25.5	24.9	24.7
GDP per capita in PPP	EU average = 100	160	162	172	172	175	172	171	169
	EU average (value)	22,400	23,600	25,000	25,000	23,500	24,400	25,100	25,500
	ranking among 271 NUTS 2 regions	12th	12th	5th	6th	7th	8th	9th	--
net available pension in purchasing power parity (PPP)	ranking among 271 NUTS 2 regions	--	171st	178th	195th	185th	168th	--	--
gross fixed capital formation	€ millions	7,237	9,268	11,547	13,848	10,671	10,268	10,798	--
	% of Czech Republic	26.8	30.5	32.4	33.5	30.5	27.9	28.8	--
technological balance of payments	€ millions	46.4	173.4	51.8	347.2	224.2	298.5	264.5	232.3
R&D expenditure as % of GDP	total	2.11	2.36	2.52	2.30	2.20	2.17	2.44	2.67
	public	1.17	1.25	1.40	1.29	1.39	1.34	1.53	1.59
	private	0.94	1.11	1.13	1.01	0.81	0.83	0.91	1.08
R&D employees and share of total	FTE	17,584	19,889	21,176	20,943	19,747	19,963	21,151	22,164
	% of Czech Republic	40.5	41.7	43.0	41.2	38.7	38.2	38.0	36.8
R&D employees per 1000 eq. active	number	41.8	44.0	46.8	46.6	43.5	42.4	46.0	47.5
specialists in science, technology, healthcare and ICT	FTE	--	--	--	--	--	--	166.3	175.5
	% of Czech Republic	--	--	--	--	--	--	71.5	68.3
state support for R&D	€ millions	319.8	345.0	428.0	474.1	500.3	505.9	530.5	555.4
- institutional support	€ millions	209.3	230.1	264.1	289.1	301.9	302.6	290.8	--
- targeted support	€ millions	110.5	114.8	163.9	185.0	198.4	203.3	239.7	--
number and share of patents	national patents	115	91	84	87	146	116	124	147
	% of Czech Republic	33.0	34.3	35.5	34.9	37.9	39.4	36.5	34.7
	EPO patent applications	26.96	39.07	47.08	38.79	29.33	22.93	--	--
general unemployment level	%	3.5	2.8	2.4	1.9	3.1	3.8	3.6	3.1
	% for university educated persons	1.1	1.1	1.3	1.3	2.1	2.4	2.6	2.5
employment structure by NACE	% tertiary sector	79.1	79.2	81.4	80.4	79.8	81.6	82.6	80.5
	% industry and construction	19.9	19.6	17.6	18.4	19.8	18.0	17.1	19.2
population with university education	% university educated in pop. Prague 15+	22.4	23.1	22.7	25.5	25.8	28.9	31.0	31.6
	% university educated in pop. Czech Republic	25.3	24.1	24.6	22.7	23.9	25.7	24.9	24.1
	% of employment	29.2	28.7	28.7	32.3	31.7	35.6	38.4	39.1
average monthly salary	€ in Prague	809.5	914.2	968.8	1,155.9	1,135.5	1,219.5	1,270.9	1,270.2
	€ in Czech Republic	613.9	686.1	753.8	908.2	885.8	945.2	994.9	997.8

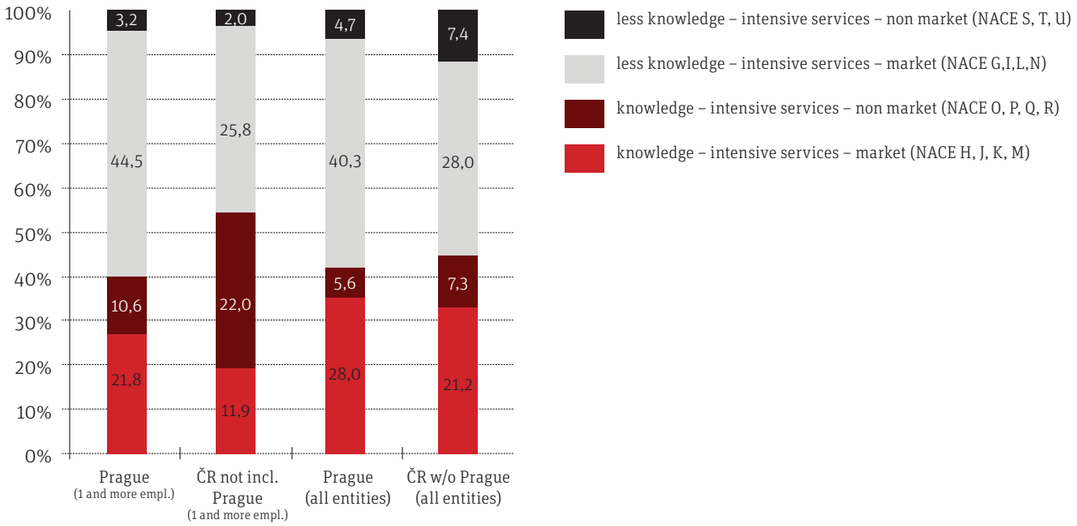
Source: CSO, Eurostat, 2014

Note: R&D – research and development, FTE – full-time equivalent

2.3.1 POSITION OF PRAGUE IN THE CZECH REPUBLIC

In comparing the economic performance of the Czech regions it is apparent that the economic base of Prague holds an exceptional position in the economy of the Czech Republic and is the primary pole of the country's growth. A characteristic attribute of the economic development of the Prague urban agglomeration is a long-term increase in the service sector (see Graph 1), which contributes significantly to the formation of the region's gross added value. (The share of the tertiary sector in the gross added value reached nearly 82% in 2011.) The dynamic of the development of economic performance and strong position of sectors with high added value has a positive effect on the macroeconomic position of the region in interregional comparison. In light of the fact that Prague is the sole urban region with a marked concentration of political, international, economic, educational and research institutions in the Czech Republic, many of which are of nationwide significance, a large number of important employers are also based here, strongly influencing the character of the region's economy, though they themselves do not constitute a specific specialisation of Prague from the perspective of research, development and innovation. Thanks to this concentration of functions, Prague has a marked head start in comparison with other Czech regions in nearly all structural indicators that have a significant influence on the development of an innovative environment and competitiveness. Prague's exceptional position in the innovation system of the Czech Republic is also evidenced by the employment level in research and development, which is not equally distributed among the country's regions. Over 35% of all employees in research and development (hereinafter R&D) in the Czech Republic are concentrated in Prague and further evidence of its importance for employment in the region is found in comparing the proportion of R&D employees per 1000 people working in the region, where Prague considerably exceeds the nationwide average. Due to its unique concentration and broad range of R&D activities, Prague is thus also the centre of R&D for entities outside the region. The high concentration of public research institutions in Prague also significantly influences the sector and occupational structure of R&D employees and illustrates the multidisciplinary focus of the economic base in Prague.

Graph 1: Share of the category of services in the number of economic entities in Prague and outside Prague (%, 2013)



Source: CSO 2013; own calculations

Prague maintains a lead above all in the formation of regional GDP. Also contributing to the economic performance and strong macroeconomic position of Prague is the high concentration of headquarters of multinational (multiregional) companies and public institutions and the advanced tourism industry. Specialised services and other professional, academic and technical activities also have a relatively strong representation compared to other regions. Economic entities from the fields of media, ICT, management consulting, research activity and tourism are also highly active in Prague. These fields constitute a large portion of the job opportunities. Activities in the field of specialised knowledge-intensive services are not only a source of a substantial added value in Prague, but thanks to the abundant facilities in this area they are also widely used by entities and manufacturing capacities outside the region and thus represent an important source of competitiveness.

Prague is characterised by a long-standing low level of unemployment (5.1% as of 30 November 2013) and a substantially higher average salary than the national average (by 30%). For this reason Prague is an attractive destination for labour migration - at the last census the proportion of foreigners in Prague was 8.8 percentage points higher than the national average. The quality of human resources in the region also corresponds to this metropolitan character - 140,000 university students study in Prague and of all the regions in the Czech Republic, Prague has the highest proportion of residents with post-secondary education. The considerably higher labour costs may however deter some investors from starting up in Prague. The Czech Republic nevertheless remains one of the most attractive destinations for foreign direct investment (FDI) in Central and Eastern Europe. Prague makes up roughly half the FDI and between 2000 and 2011 the cumulated FDI into equity capital increased by 52% and the volume of reinvested capital by up to 223%. Despite the fact that Prague is still capable of attracting a substantial portion of the FDI flowing into the Czech Republic, largely thanks to the agglomerative effects of the metropolitan region, consultations with representatives of the business sector reveal that the competitiveness of Prague is hurt internationally by the deficit of investor care and the inactive approach to acquiring further investments including the ambiguous stance of Prague's local government (insufficient communication with investors, insufficient presentation of Prague as a destination for investment, unclear vision as to what kind of investments Prague wants etc.).

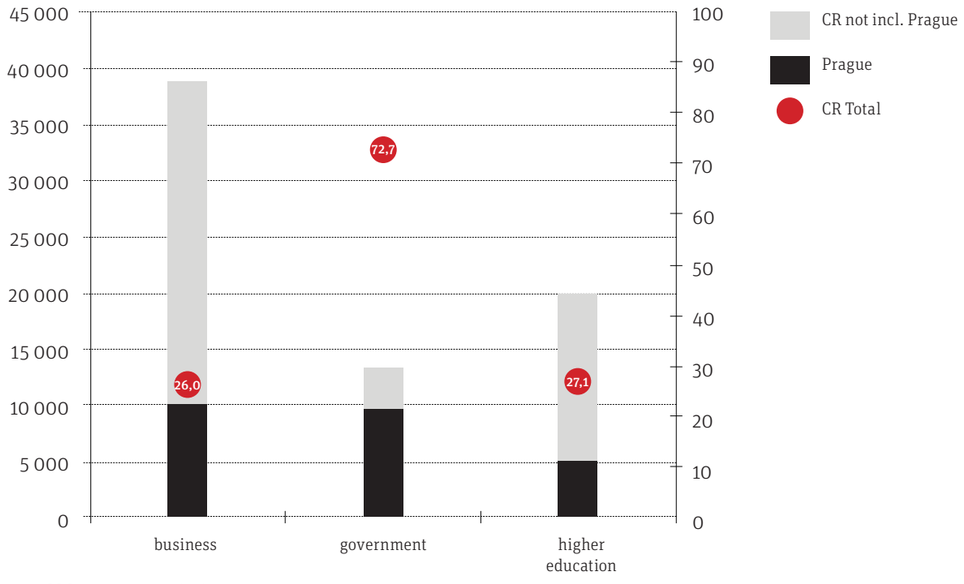
The natural catchment area of Prague that directly or indirectly contributes to the city's economic performance however also includes the area functionally connected to its centre. In terms of their status, the City of Prague and the adjacent part of the Central Bohemia Region should thus in many regards be interpreted as a single natural region. Taken together, the innovative capacity of the metropolitan area, i.e. Prague and the Central Bohemia Region, stand out even more compared to the rest of the country. Backing this up is the dominance in division of knowledge factors – 53% of the total R&D expenditure in the Czech Republic and over 35% of those working in science and technology. Prague has an exceptional role in the national innovation system and research organisations from the region are a natural partner for entities from the Central Bohemia Region in particular. In addition, during the 2007–2013 programming period large research centres were created in the Central Bohemia Region that are closely connected to research facilities of the Prague innovation system, and thus the functional bond between these territorial units became even deeper. This unique bond must be taken into account in the strategic documents and specific activities of both regions.

At the same time, Prague's inclusion under the Competitiveness objective of the EU's cohesion policy made it impossible to draw on the considerable funding from the Convergence objective for supporting innovation infrastructure and universities; the importance of these extends beyond the boundaries of Prague however and they are currently significantly underfunded.

2.3.2 RESEARCH AND DEVELOPMENT, INNOVATIVE BUSINESS

The performance and potential of Prague's innovation system is also characterised by the level and structure of investment in R&D activities. Not only does Prague differ from other regions in the amount of its R&D spending, but also in the structure thereof. In all Czech regions, with the notable exception of Prague, the business sector plays the greatest role in funding R&D activities. In an interregional comparison of R&D funding from the government and university sector in Prague, the situation is reversed and the dominant source of financing for R&D is the public sector, in particular government sources, which in Prague help fund nearly 70% of all R&D activities (see Graph 2). At the same time the greatest volume of such funding is allocated in Prague (see Graph 3). The major importance of R&D for Prague's economy is also illustrated by the high intensity of R&D (research and development spending as a percentage of GDP), which reaches values exceeding 2%. These particular features of Prague relate heavily to the concentration of post-secondary and government research institutions within the capital that are financed from the State budget. Given the amount of public research institutions in Prague, institutional support outstrips targeted support. Even so, targeted R&D support in Prague nominally exceeds the other regions in the Czech Republic significantly. In light of the high concentration of research and development entities, in particular universities, research institutions and organisations, it is clear that Prague is the centre of R&D activities (in particular basic research) that are not only a source of results, but also of highly qualified human resources for the rest of the country.

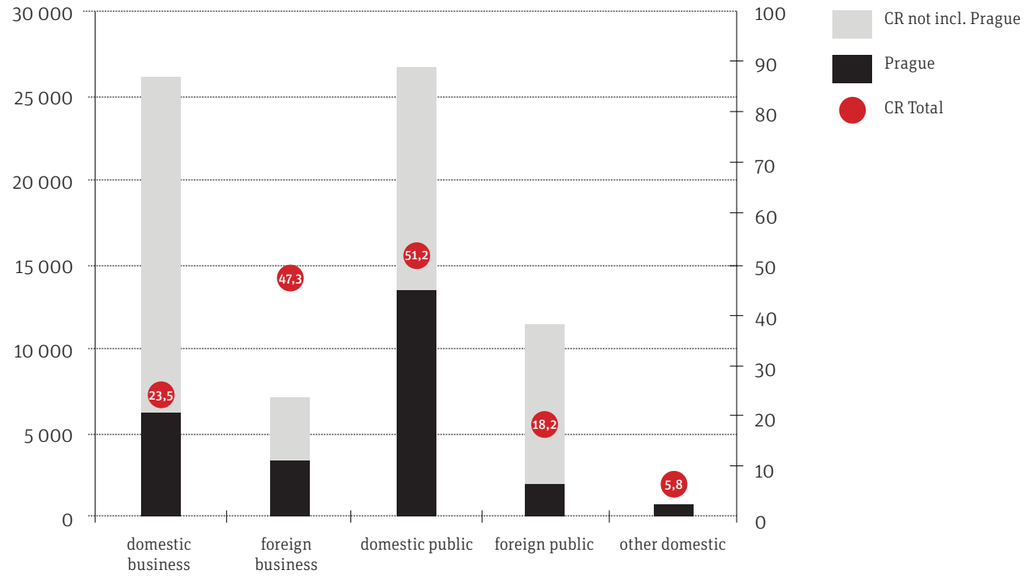
Graph 2: Structure of expenditure on research and development by sector in Prague and outside Prague and Prague's share of the Czech Republic (€ million, %, 2012)



Source: CSO 2013; own calculations

The various players of the innovation system include a number of ones that are internationally competitive. The ability to publish in relevant journals speaks to the quality of research at universities, research organisations, etc. Charles University, Czech Technical University, the physical and chemical institutes of the Academy of Sciences and faculty hospitals publish most frequently in relevant journals (in the database Web of Science 2008–2012). Articles on earth, physical, chemical, mathematical and medical sciences stand out in particular. Breaking it down into greater detail, fields from less represented groups also stand out, for example Literature, mass media, audiovisual; Computer hardware and software; Use of computers and robotics; Morphological specialisations and cytology. Prague-based entities also take part in international competition among projects as part of the 7th Framework Programme, which is an instrument for realising the EU research policy (through 2013 Czech entities recorded 1,119 participations with a success rate of 19.6% and aggregated support of € 217 million). The number of participations can serve as an indication of the quality and ability to compete with other teams from the EU in the competition for funding. The most represented FP7 priorities are Information and Communication Technology (ICT) and People. ICT has a stronger position in Prague than in the Czech Republic as a whole - ICT contains activities that are realised in the vast majority of entities from Prague – components, systems, engineering; cognitive systems, interaction, robotics; ICT for Enterprise and Manufacturing; Cognitive Systems and Robotics. What stands out from the otherwise below -average Transport priority is the activity relating to the Galileo navigation system; this is also true of one of the activities from the Space Research priorities. Prague entities have strong participation in the Health and Energy priority. In terms of participation in FP7, the most successful are the most important public universities – Charles University (especially the Faculty of Science, Faculty of Math and Physics, First Faculty of Medicine, Environment Centre, etc.), Czech Technical University (especially the Faculty of Electrical Engineering and Faculty of Mechanical Engineering) and the Institute of Chemical Technology, as well as the exact science institutions of the Academy of Sciences, and from the private sector Honeywell, GISAT (remote sensing of the Earth) and Neovision (practical applications of machine vision).

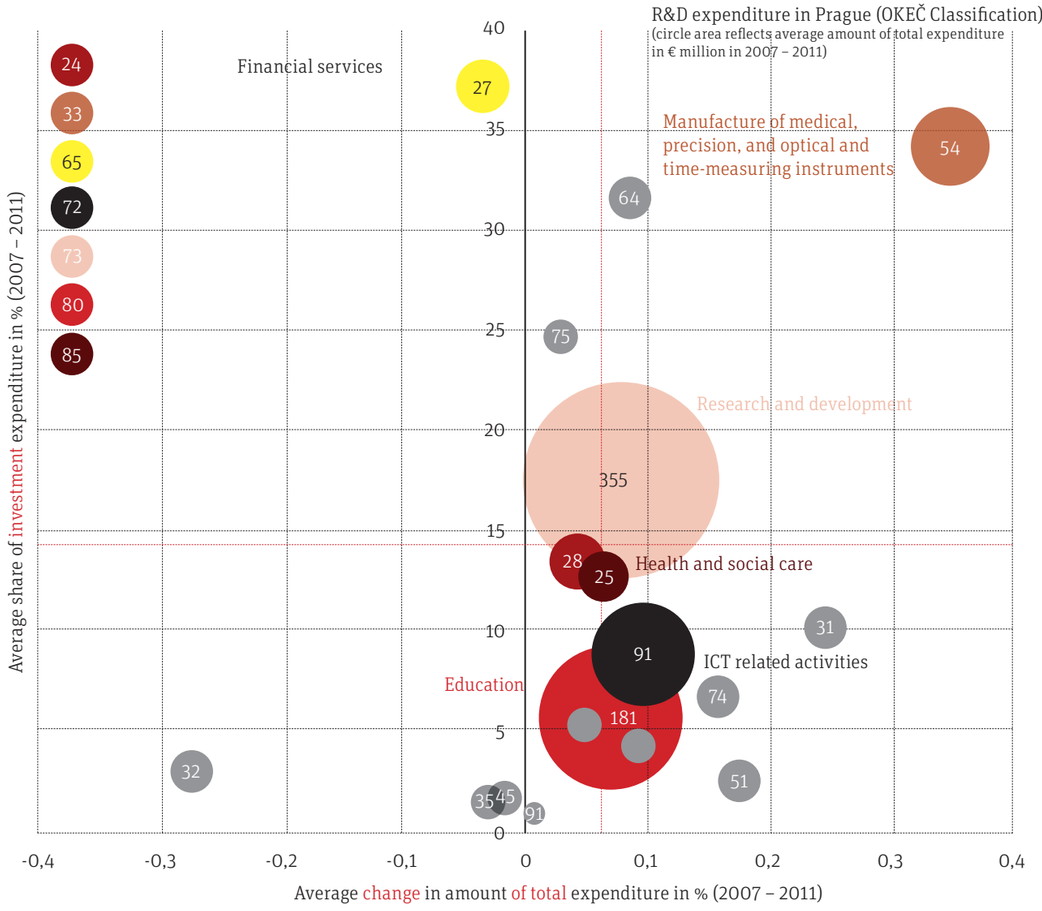
Graph 3: Structure of expenditure on research and development by funding source in Prague and outside Prague and Prague's share of the Czech Republic (€ million, %, 2012)



Source: CSO 2013; own calculations

One thing that demonstrates the significance of the Prague innovation system is the largest share of private foreign sources in R&D, which are rising year-on-year (€ 107.4 m). The value of all – private and public – foreign sources of R&D funding nearly reaches the value of the national private R&D resources. While investment in technical science fields dominates in the regions of the Czech Republic, in Prague investment has long flowed primarily into the natural sciences, despite the nationwide falling numbers of employees working in the natural sciences. This primarily concerns R&D that is also a source for newly created centres of excellence within Prague and international cooperation and the results of which have a high application potential thanks to the concentration of entities in the life sciences. The medical, social and humanities sciences are also strongly represented in Prague compared to other regions. Research and development in these areas has broad application in Prague thanks to the concentration of top healthcare and related facilities of international significance and services connected thereto.

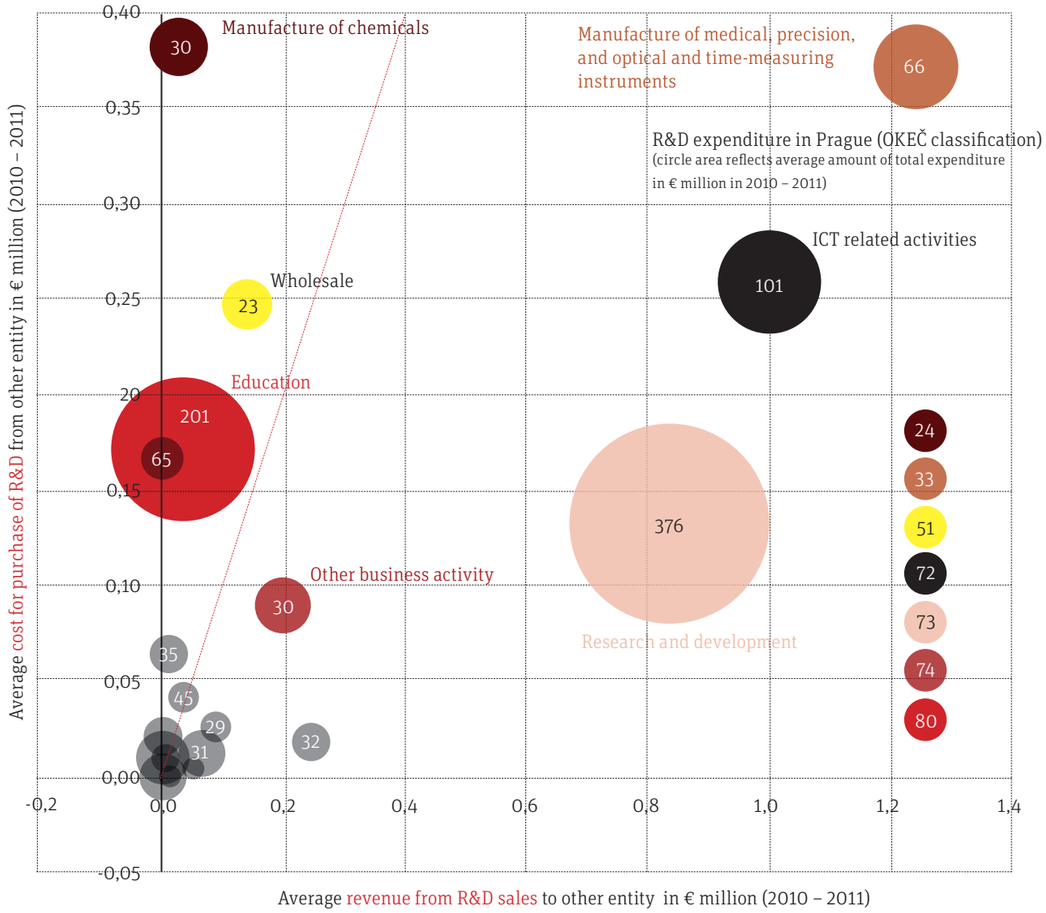
Graph 4: Development of investment and overall costs (2007 - 2011)



Source: Technology Centre ASCR, 2013

Strongly represented in Prague from the perspective of investment in research and development are the manufacture of medical, precision, optical and time-measuring instruments, wholesale, communications, transport activities, ICT, financial services, research and development and public administration (see Graphs 4 and 5). Above-average spending on research and development also occurs in the area of recreational and cultural activity, which has an important place in the economic base of Prague. Additionally, since 2001 investment has significantly increased in Prague into the sections of medical, precision, optical and time-measuring instruments, financial services and R&D sectors. Activities that boost investment into R&D in the long-term are those under the innovation system that are competitive, able to follow trends in both research and application and are the types of activity that will continue to expand in the field of innovation in Prague. These activities constitute potential in setting up the vertical priorities (domains) for the regional innovation strategy. Low year-on-year growth of investments in R&D is characteristic for the educational sector, which is subject to budget restrictions at the national level and which has also been very negatively influenced by the disqualification of Prague entities from the Convergence objective of the EU cohesion policy, which in other regions provided considerable investments in R&D.

Graph 5: Revenue from sales and costs for purchase of R&D (2007 - 2011)

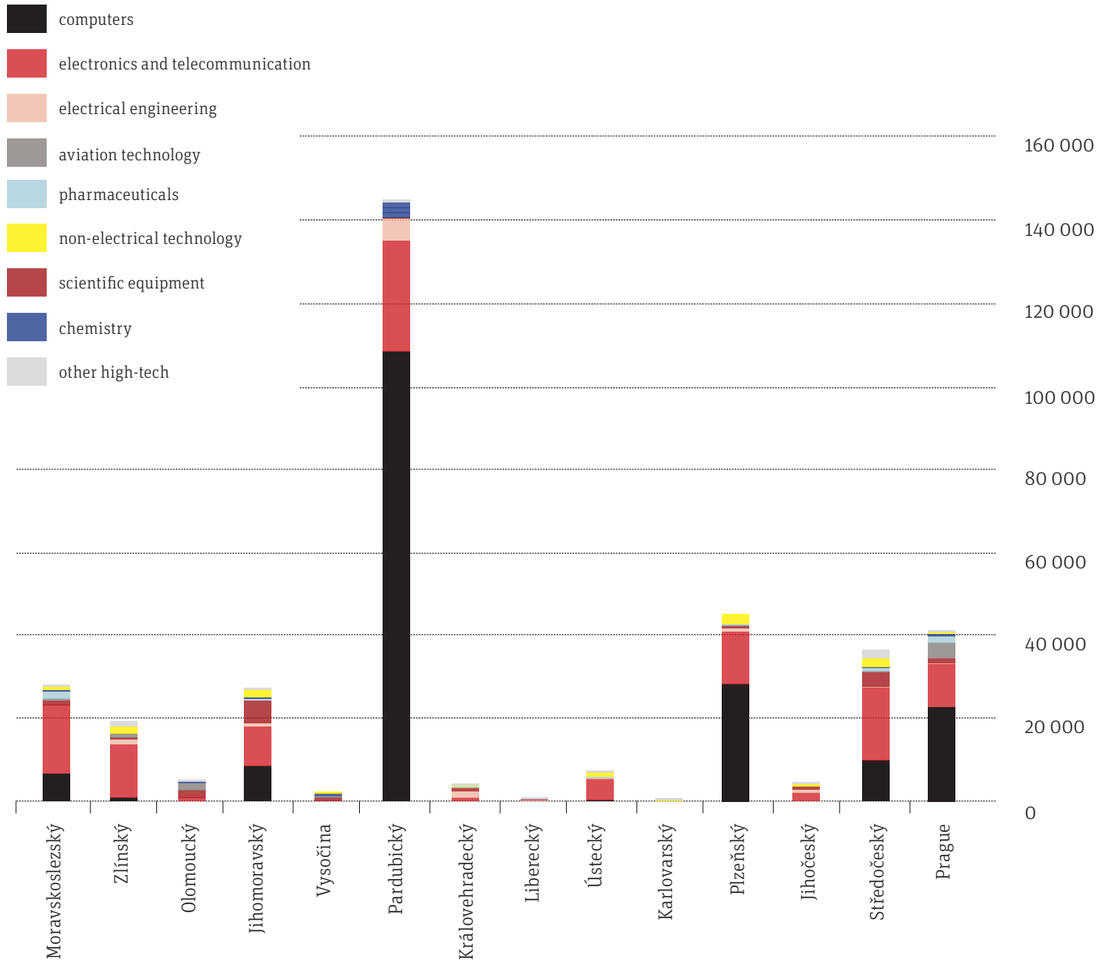


Source: Technology Centre ASCR, 2013

The proportion of innovative businesses in the Prague region is in no way exceptional and does not stand out in technical or non-technical innovation activities. Businesses in Prague invest the most in implementing new technological innovations. The more marked representation of innovation in services is a certain particular feature of the Prague economic base, which is oriented toward highly specialised services in innovative activities. In connection with the specific character of the Prague economic base, innovation of design and new methods of promotion also dominate in the process innovations in businesses. These activities thus represent another strong area of R&D activities with the potential for further development overlapping into the domains of specialisation of the Prague region. As in other Czech regions, very few businesses develop their innovations hand-in-hand with universities or public research institutions. This low level of cross-sector cooperation and the resulting lack of mutual awareness and understanding of goals is a shared attribute of the national innovation system. The result is that the potential stemming from the concentration of top research organisations is not exploited in Prague, and despite the fact that businesses in Prague generate nearly 40% of all business revenue in the Czech Republic and a high percentage of the revenue from product innovation, overall revenue generated comes primarily from the sale of non-innovative products and services. Prague is thus a second-class centre in the global production chain. The absence of cooperation between the academic, business and public spheres on joint development plans (including outside the R&D sector) is thoroughly evident and the innovation system environment is not stimulating in this regard.

Despite the fact that SMEs are often regarded as a vital engine of innovative behaviour, innovative activities grow with the size of the enterprise, even in Prague. The largest investors into R&D in Prague primarily include large enterprises with more than 250 employees. The headquarters of major companies of national or multinational importance are thus of fundamental significance for Prague's economy. What will be important for the development of the regional innovation system, however, will be to also take into account the need to increase the innovation activities of SMEs. According to the Innovation Union Scoreboard, the involvement of SMEs in innovating and collaborating on producing innovation in Prague is merely average and is far from approaching the values customary in the major cities of Western Europe.

Graph 6: Regional export of high-tech goods (by SITC rev. 4) in 2010 by group of goods (€ million)



Source: Technology Centre ASCR, 2013

Note: In the Pardubice Region a single company (Foxconn CZ s.r.o.) generates a large volume of export; it is the second largest exporter after Škoda Auto a.s. The list of high-tech goods based on this classification is available on the CSO website: http://www.czso.cz/csu/redakce.nsf/i/seznam_high_tech_zbozi_sitc_rev_4/$File/high-tech_sitc.pdf (in Czech)

Knowledge-intensive activities in Prague produce a great range of results that are both applicable and economically valorised (see Graph 6). While these activities are significant in a national comparison, from the perspective of international competitiveness this is not so much the case. For example, as a potential centre for highly specialised services, in the Czech Republic Prague is a centre of export for technology services (in terms of technological balance of payments - TBP), but from an international perspective these values are average. Prague primarily produces computer services, which are the dominant item in this category of the TBP (over 72%). The second most significant item in both Prague (17%) and the

Czech Republic (32.3%) is technical services. In terms of expenditure, the greatest share in payments for import of technology services in Prague goes to computer services (over 73%) and licensing fees (16.4%). The influence of high incomes for computer services is felt the most. Trading in R&D also has a positive balance of payments for Prague; the rest of the Czech Republic is in the opposite situation, with a markedly negative balance. A low ability to commercialise the results of R&D activities through licensing fees and trademarks is shown by the considerably negative balance in both Prague and at the national level. Entities in Prague do however have the highest patent activity in the Czech Republic, being allocated roughly one third of all patents issued to applicants from the Czech Republic. Likely as a result of the economic crisis the group of entities from the business sector have been overtaken in number of patents by universities, whose patent activity has been rising relatively rapidly since 2008. In an international comparison of the number of patent applications submitted to the European Patent Office, however, the Prague region lags far behind the metropolitan regions of Western Europe and once again does not even come close to the European average. This very low patent activity attests to the low effectiveness of the innovation system and the inability to produce competitive (patent protected) solutions.

It is especially the proximity of the development actors in the innovation environment and other institutions and organisations that creates a strong agglomerative effect through which Prague becomes a significant pole of growth at the national level and a centre of R&D for the whole country. This is why Prague has taken on a dominant position in interregional comparison of innovation potential. From the perspective of international comparison however, Prague is not able to compete on the R&D field and does not stand out as a metropolis with a strong knowledge base. Considering its size and potential, Prague should concentrate above all on international competitiveness. Prague's innovation system is however highly fragmented. The problem is primarily the lack of trust and insufficient communication between the players of the innovation system from the public, academic and private sector. Prague has not built up any long-term partnerships that would jointly formulate and develop Prague's innovation environment. Activities by the Prague local government to support the creation of innovation in the region are highly limited and the commitments unclear. Working with the public and marketing the Prague "brand" has long been a general problem of the local government, which also influences the field of research, development and innovation. For this reason Prague is greatly influenced by the overall picture of the state of innovation activities in the Czech Republic instead of being their bearer and leader. Moreover, Prague is a region that has a highly heterogeneous structure in its economic base, with a broad spectrum of fields and entities that have the potential to realise innovative activities represented. The interdisciplinary nature of the Prague innovation system and its potential, particularly in the field of education, thus remains largely untapped for the purposes of increasing (international) competitiveness of Prague. Because supporting research, development and innovation has to date not been a consistent priority for Prague, the image of Prague's innovation system becomes less attractive as similar but more quickly developing European metropolitan regions improve. This also leads to ongoing "brain drain", which is a problem of the whole Czech Republic.

2.3.3 PUBLIC ADMINISTRATION AND ITS ROLE IN THE INNOVATION SYSTEM

The main public administration entities that are responsible for research, development and innovation in the Czech Republic according to Act No. 2/1969 Coll., establishing Ministries and other Central State Administration Authorities of the Czech Republic, are the Ministry of Education, Youth and Sports (incl. science policy, research and development) and the Ministry of Industry and Trade (incl. industrial research, development of technology; small and medium enterprises and trades; foreign trade and support for export).

Act No. 130/2002 Coll., on the Support for Research, Experimental Development and Innovation, also lists possible providers of public support in this area, for example the Academy of Sciences of the Czech Republic, the Technology Agency of the Czech Republic, the Czech Science Foundation, certain ministries, as well as self-governing territorial units. Self-governing territorial units can provide both targeted and institutional support. A key entity is the Research, Development and Innovation Council, which acts as an expert advisory body for the government. It is also important to mention the Industrial Property Office.

Aside from the general formulation of § 2 of Act No. 131/2000 Coll., on the City of Prague, which states: *"The City of Prague and the Municipal Districts shall tend to the all-round development of their territory and the needs of their citizens; in fulfilling these duties they shall likewise protect the public interest as expressed in the laws and other legislation"*, in supporting research, development and innovation the City of Prague can also rely on § 16 of the same act, which states: ***"The City of Prague, in its independent authority and its territorial borders, shall furthermore make sure, in accordance with local conditions and conventions, that the conditions are created for the development of social care and to meet the needs of its citizens. In particular, this relates to meeting needs for housing, safety and development of health, transport and communications, needs for information and education, overall cultural development and protection of public order."*** This means that support for research, development and innovation on the part of Prague is an expression of the interest to develop this area, but not a legal obligation as is the case with the aforementioned bodies of State administration.

This fact is further confirmed by Act No. 248/2000 Coll., on Support for Regional Development, which in § 13 (2) states, inter alia: ***"A region may also: a) support the development of private enterprise beneficial for the region; b) allocate funds from its budget for the removal of defects and deficiencies in the areas under its responsibility (...), including the removal of undesirable disparities inside the territorial district of the region; c) participate in the fulfilment of tasks related to the focus of regional development support."***

To date the Prague local government has involved itself in research, development and innovation almost exclusively via EU structural funds, or rather via the programmes through which this support has been provided in the city since 2004. In this it relied on both the Prague Strategic Plan and the BRIS 2004 strategy. The projects were generally run by third parties and not initiated by the city.

Table 5: Support for research, development and innovation from Prague programmes financed by EU structural funds

PROGRAMME	TOTAL SUPPORT	SUPPORT FROM CITY OF PRAGUE BUDGET
SPD 2 (measure 2.1)	CZK 410.7 m (€ 14.4 m)	CZK 70.9 m (€ 2.5 m)
SPD 3 (measure 4.2)	CZK 424.7 m (€ 14.9 m)	--
OP Prague Competitiveness (support area 3.1)	CZK 1,869.7 m (€ 72.8 m)	CZK 44.7 m (€ 1.7 m)
OP Prague Adaptability (Priority Axis 1)[15]	CZK 101.9 m (€ 4.0 m)	CZK 6.6 m (€ 0.3 m)

15 Only for the activity "Development of Human Resources in Research and Development"

Source: operation programme evaluation reports, Prague City Hall

Note: Amounts in € are approximate. SPD 2 and SPD 3 calculated using average CZK/EUR exchange rate for the period 2004-2008; OPs calculated using average CZK/EUR exchange rate for the period 2007-2013.

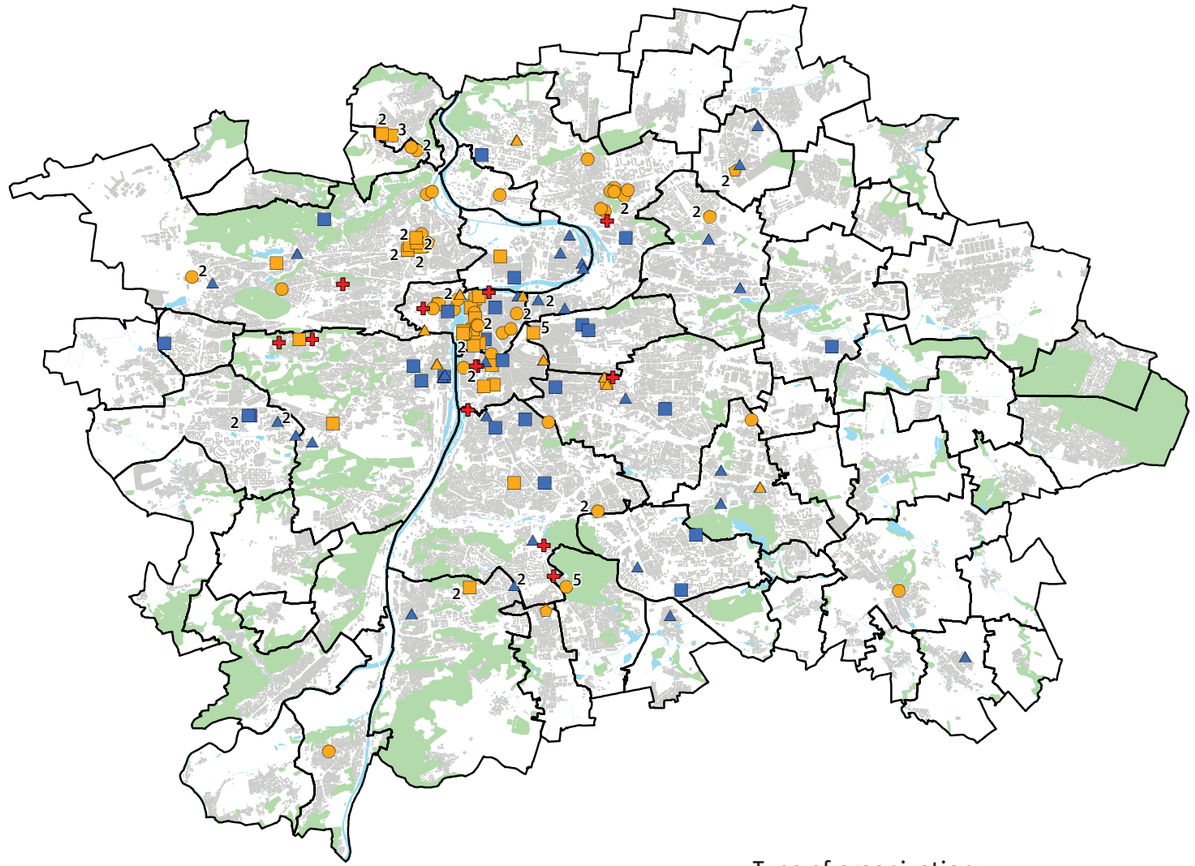
In the period 2004-2006, support focused above all on building support facilities for innovation activities (business incubators, centres for technology transfer, support for innovation and education). In 2007-2013, support largely focused directly on expanding research capacities, above all in the public sector. This at least provided a minimum of compensation (though not nearly enough) for the much greater funds flowing into other Czech regions from the Ministry of Education's Operational Programme Research and Development for Innovation.

Leaving aside structural funds, we can mention only two measures of Prague administration that explicitly concerned support for innovation. One was a one-off contribution for the operating costs of four Prague incubators in 2010 totalling € 158 million. The other was an innovation voucher project realised in 2013 with a total subsidy allocation of € 385,000. Of the 146 companies that applied, 58 were drawn by ballot with total project costs of € 520,000 and subsidies of € 377,000. The goal of the project was to stimulate cooperation between the research and application spheres, as well as to identify contact persons in research organisations for the purposes of working with businesses.

In order to develop the business environment in Prague (not just for innovation), a programme was launched in 2012 called Acceleration – Programme for Supporting entrepreneurshipin Prague. Implementation of the project was assigned to the company Prague Development Projects (Rozvojové projekty Praha, a.s.). Under the programme a contact centre for businesses was created to provide basic consulting for small and medium enterprises, as was a web portal and various manuals for Prague entrepreneurs.

The activity of the Prague local government in the innovation system can so far be considered to be in the nascent stage. While Prague distributes considerable funding to support innovation from European sources, the focus is currently too broad and some projects have problematic sustainability. The prerequisite for a successful role of the local government is active development of partnerships with innovation system entities and setting goals accompanied by allocation of resources (financial, human and other) for the realisation thereof.

Image 1: Organizations of Research and development in Prague



Source: IPR Prague, 2014;

Note: numbers indicate multiple entities at the same address.

2.3.4 THE MAIN ACTORS OF THE CITY OF PRAGUE INNOVATION SYSTEM

A) KEY PLAYERS IN RESEARCH AND DEVELOPMENT

Considerable R&D capacities are concentrated in Prague. In particular, the educational and research facilities in Prague are more of a national than regional importance. According to an interregional comparison, Prague has the most entities engaged in R&D activities as their primary or secondary activity. Prague is thus often dominant in many indicators when comparing it with other regions in the Czech Republic (see previous chapter).

In light of the high number of entities with R&D activities in Prague we shall list the most important below. Of those post-secondary institutions whose activities are quite extensive (often in terms of thematic fields as well), these primarily include the largest universities, for whom the volume of funding invested in R&D and results achieved reach above-average values:

- Charles University in Prague
- Czech Technical University
- Institute of Chemical Technology
- Czech University of Life Sciencesa

The most important public research organisations in terms of relevance for PRIS include:

- Institute of Organic Chemistry and Biochemistry ASCR
- Institute of Physics ASCR
- Institute of Molecular Genetics ASCR
- Institute of Microbiology ASCR
- Institute of Physiology ASCR
- J. Heyrovský Institute of Physical Chemistry ASCR
- Institute of Macromolecular Chemistry ASCR
- Institute of Experimental Medicine ASCR
- Institute of Plasma Physics ASCR
- Institute of Chemical Process Fundamentals ASCR
- Institute of Theoretical and Applied Mechanics ASCR

Given the focus of the economic base of Prague with its high concentration of entities with a connection to selected life sciences fields, there are also hospital facilities in Prague that have extensive R&D activities and direct relevance for the innovation strategy. These include the General University Hospital in Prague and the University Hospital in Motol.

The territory of Prague as a region does not qualify to draw support under the Convergence objective, which was the source of the most significant infrastructure investments into research and development in the Czech Republic. The most important projects in the 2007-2013 period are nevertheless realised in Prague's hinterland in the Central Bohemia Region under the Operational Programme Research and Development for Innovation (OP R&DfI) and are directly connected to R&D capacities in Prague. With successful realisation of the centres from OP R&DfI, the key entities will be large centres of international significance - in particular the laser centres ELI and HiLASE, the biomedical centres BIOCEV and ExAM, the nuclear energy focused centre SUSEN, or NÚDZ in the field of psychiatry. These research capacities supported from OP R&DfI in the 2007-2013 programming period will be transnational in scope and thus represent important poles in the growth of knowledge. The use of these capacities will doubtlessly have an impact on the growth dynamic of research activities in Prague research organisations. The placement of important research capacities outside the Prague region yet in its immediate vicinity opens up space for interregional and inter-institutional research collaboration.

Inside Prague itself smaller infrastructure projects are created (modernisation of laboratories and potential structural modifications) financed from OP Prague - Competitiveness (OPPC). Projects under OPPC were realised primarily by universities and institutions of the ASCR (CTU, Institute of Molecular Genetics ASCR, University Hospital in Motol, Institute of Microbiology ASCR, Institute of Macromolecular Chemistry ASCR). At the end of the programming period the possibility of investing approximately € 115 million from OP R&DfI into projects by public universities in Prague was negotiated.

Prague organisations (public and private) are also active in the national support programmes provided by the Technology Agency of the Czech Republic. Primary among these are the Alpha, Beta and Competence Centres programmes. For example, in the first call of the Competence Centres programme, 22 projects were approved with a total support amount of € 239 million; of those 10 were projects with a Prague applicant for a total of € 1150 million. There are also 20 projects where at least one Prague entity is involved. This national programme partially compensates for the inaccessibility of significant support from the structural funds within Prague, though they are only non-investment projects.

B) KEY PLAYERS IN THE PRIVATE AND APPLICATION SPHERE

From the perspective of regional economic development it is essential what company activities are localised in a certain region. The localisation of management functions and research and development activities in a region often provides a high added value and contributes to growth in regional competitiveness. Localising behaviour of companies thus always reflects existing regional differences in competitiveness factors.

Although the importance of SMEs for implementing and spreading innovation is often emphasised, innovation activity in Prague, as in other major European cities, grows with the size of the enterprise. This is also influenced by the inflow of foreign direct investment into larger companies or the ever-growing influence of localising the headquarters of companies with national or transnational impact.

In Prague there are several important knowledge-intensive companies that conduct their own R&D at a volume comparable to the largest public research organisations, or which are potentially strong players in the innovation field in Prague with relevance for smart specialisation.

These are primarily entities which fall into several categories based on their activities (the list of companies is indicative):

- selected domains of life sciences; in Prague this includes a broad spectrum of activities, in particular chemical or pharmaceutical industry and related services (e.g. Zentiva, Sanofi-aventis, s.r.o.; AstraZeneca Czech Republic s.r.o., PRO.MED.CS Praha a.s.; Intherpharma a.s.; Pharmaceutical research Associates CZ, s.r.o.), specialised healthcare facilities and devices and related services or specialised products (e.g. UJP Praha, a.s.; GlaxoSmithKline s.r.o.; LASAK s.r.o.), medical care

- manufacture of specialised electrical and optical equipment (e.g. Siemens, s.r.o.) and manufacture of transport equipment (e.g. Stadler Praha s.r.o., TÜV SÜD Czech s.r.o., Výzkumný ústav železniční, a.s.), in particular aviation technology and related fields (e.g. LOM Praha, s.p.; Výzkumný a zkušební letecký ústav, a.s.; e4t electronics for transportation s.r.o.)

- very broadly represented area of ICT, communication technology and creative fields, in particular activities in information and communication technologies (e.g. T-mobile Czech Republic, Seznam.cz, a.s.), financial services (e.g. Komerční banka, a.s.), process management solutions, security systems, etc. (e.g. Siemens, s.r.o.; PIKE ELECTRONIC, spol. s.r.o., TTC TELEKOMUNIKACE, s.r.o.), software solutions for specialised purposes, design, highly specialised services and consulting for research, development and innovation (e.g. CA CZ, s.r.o, CESNET, K TRADE CONSULT, a.s.)

Also based in Prague is the Association of Research Organisations, the only subject in the Czech Republic that represents and protects the interests of research organisations and applied research businesses.

C) INNOVATION INFRASTRUCTURE FACILITIES

One of the important elements for expanding innovation activity, especially for small companies, is innovation infrastructure and services they offer. Prague has a very limited capacity of innovation infrastructure and the spectrum of services provided through it is relatively small. This is one of the reasons why, in recent years, successful new facilities have sprung up funded only by private capital that focus on very small and progressive companies (particularly in the field of IT) and provide a different range of services than classic science and technology parks and incubators. These include the shared spaces for starting entrepreneurs at HUB Prague, the business incubator StartupYard under the auspices of "business angels" from Global Accelerator Network, and the business incubator and shared space for starting companies Node5.

The function of an innovation infrastructure facility is fulfilled by the Inovacentrum, which is run by several entities including the Czech Technical University, the Technology Centre ASCR, which primarily provides highly specialised technology transfer services and is the centre of the Enterprise Europe Network in the Czech Republic, the science and technology parks IBC IEM ASCR and STP VZLÚ Prague, which is a business incubator for entities in the aerospace, automobile, transportation and military industries. Another example is the Charles University Centre for Transfer of Knowledge and Technology.

In 2013, the TIC ČKD technology incubator, built using funding from the structural funds, was closed, which meant a significant decrease in this kind of capacities in Prague.

D) KEY PLAYERS IN PUBLIC ADMINISTRATION

At the regional level two entities in Prague can be mentioned - the newly founded Support of Enterprise and Innovation Unit under the Department of Business Activity at Prague City Hall in the role of a coordinator, and the Prague Institute of Planning and Development (IPR Prague), which is a specialised city body for strategic and territorial development and which is responsible for preparing conceptual documents (Prague Strategic Plan, Regional Innovation Strategy, operational programmes for EU structural funds, etc.) and for helping implement selected projects of the innovation strategy.

E) FURTHER RELEVANT ENTITIES IN THE SURROUNDINGS OF PRAGUE

Aside from the OP R&DfI centres in the Central Bohemia Region already mentioned, the districts Prague-West and Prague-East are home to seven public research organisations, some of which are of transnational significance, and three science and technology parks. The construction of a further six regional R&D centres from OP R&DfI and another science and technology park is also underway. All these organisations are of potential importance for the Prague region as well.

2.3.5 INTERNATIONAL COMPARISON

One thing that can be used for international comparison, which is all the more important considering that there is no other region in the Czech Republic with characteristics similar to Prague, is the comparative index drawn up by the European Commission.

REGIONAL INNOVATION SCOREBOARD, EC, 2014

The Regional Innovation Scoreboard compiled by the European Commission offers a comparison of NUTS 2 regions on the basis of 11 indicators (as opposed to the 24 used to compare EU Member States). For methodological reasons the regions are categorised into the groups "innovation leaders", "innovation followers", "moderate innovator" and "modest innovator". On the 2012 Regional Innovation Scoreboard, Prague was the only NUTS 2 region in the Czech Republic included in the group of innovation leaders.

The current version, the Regional Innovation Scoreboard 2014, includes Prague among 35 of the 190 monitored regions where innovation performance worsened in the period 2004-2010. Based on the development of the monitored indicators between 2008 and 2010, Prague was reclassified from the category "innovation follower" (categorisation here does not correspond to the evaluation from 2012) into the lower "moderate innovator" category, which is where all regions of the Czech Republic currently lie.

Of the 11 indicators followed, Prague has below-average values in the following:

- R&D expenditure in the business sector
- non-R&D innovation expenditures as % of turnover for small and medium enterprises (SMEs)
- number of patent applications at the European Patent Office
- revenue for innovation new on market and new for company for SMEs

Table 6: International comparison of selected indicators

	PRAGUE (CZ)	HOVEDSTADEN (DK)	OBERBAYERN (DE)	BERLIN (DE)	KÖZÉP-MAGYARORSZÁG (HU)	UTRECHT (NL)	WIEN (AT)	MAZOWICKIE (PL)	BRATISLAVA REGION (SK)	STOCKHOLM (SE)
Research and development expenditure as % of GDP (2011)										
- government	0,99	0,13	0,55	1,23	0,32	0,33	0,31	0,72	0,48	0,16
- univeristy	0,56	1,34	0,51	0,92	0,22	1,12	1,41	0,29	0,41	0,89
- business	0,89	3,58	3,43	1,38	1,08	0,79	1,94	0,35	0,38	2,72
Percentage of R&D employees in economically active population (%, 2011)										
- total	3,13	3,68	2,74	1,65	1,58	0,86	2,38	0,98	2,76	2,18
Employment in high- and medium-tech processing industry as % of overall employment rate (2012)										
- total	3,1	4,8	11,5	4,7	5,3	1,7	3,2	3,2	6,4	2,4

	PRAGUE (CZ)	HOVEDSTADEN (DK)	OBERBAYERN (DE)	BERLIN (DE)	KÖZÉP-MAGYARORSZÁG (HU)	UTRECHT (NL)	WIEN (AT)	MAZOWICKIE (PL)	BRATISLAVA REGION (SK)	STOCKHOLM (SE)
Employment in knowledge-intensive high-tech services as % of overall employment rate (2012)										
- total	6,8	6,5	5,8	5,0	5,1	5,1	4,8	4,4	7,9	7,6
Employment in knowledge-intensive market services as % of overall employment rate (2012)										
- total	9,5	8,4	7,4	10,4	8,1	9,9	9,5	6,5	7,7	14,9

Source: Eurostat, 2014

It is due to the fact that Prague cannot be compared to other Czech regions that a greater use of international benchmarking against comparable regions is expected, depending on the availability of data. The following table with selected data from certain EU regions that are either urban regions or markedly monocentric regions shows that while the human resources devoted to research and development are relatively high, the financial indicators do not speak in Prague's favour, which is one of the reasons it lags behind leading European innovative regions.

2.4 SWOT ANALYSIS

An overview of the strengths and weaknesses, opportunities and threats for smart specialisation in the Prague regional innovation strategy. This SWOT analysis summarises the basic findings of the analyses and opinions of experts from the Prague innovation system.

Table 7: SWOT – Strengths and Weaknesses

STRENGTHS	WEAKNESSES
Position of the region	
Well performing regional economy with a specific structure and high proportion of knowledge-intensive services	Support for R&D&I is not a clear and lasting priority for Prague; unclear or poorly communicated vision for regional development and lack of institutional capacity to provide for it
Highly favourable geographical location of Prague – concentration of skilled human resources, functions, companies, large market potential – Prague is the Czech Republic's natural pole of growth	International position and internationalisation of innovation activities does not live up to potential present in the region
Metropolitan character of the city - presence of all institutions and management functions	Insufficient representation of city leadership at international events, poor marketing of the city
The international character of Prague (foreign direct investment, high proportion of private foreign resources in R&D, destination of labour migration for foreign workers)	Relatively high labour costs, investment costs, etc. in comparison with other agglomerations and regions in the Czech Republic
Prague House in Brussels as an opportunity for increasing the city's promotion and cooperation at international level	
Innovative entrepreneurship	
High concentration of innovation infrastructure actors	Prague's fragmented innovation system
Presence of headquarters and major companies in Prague	Underdeveloped partnerships and low level of communication between local government and representatives of R&D&I, in particular entrepreneurs
High number of newly created businesses	Limited scope of services for supporting innovation in the region and related unresolved operating funding
	High "mortality rate" of start-ups in knowledge-intensive fields
	Insufficient financial instruments for effectively supporting development of innovative businesses
	Insufficient infrastructure capacity for supporting innovative business (demand exceeds supply)
	Low level of care for investors and absence of facilitation activity by Prague in this cooperation
	Average proportion of innovative companies
Research and development	
High-quality research facilities with sufficient capacity for developing new activities	Absence of partnerships between business and academic sectors ((and the resulting mutual misunderstanding of goals and mistrust
Centres of excellence in Prague's hinterland	Untapped potential of interdisciplinary education in R&D activities for which the Prague metropolitan region is best suited
	Low level of commercialisation of R&D output
	Low level of internationalisation of R&D activities
	Low level of popularisation of R&D&I as a specific regional wealth
Human resources for innovation and R&D	
Concentration of tertiary education across fields	Untapped potential of interdisciplinary education in R&D activities for which the Prague metropolitan region is best suited.
High level of R&D employees per 1000 employed persons in the region	Falling quality of tertiary education graduates, with limited or no experience from the application sectors
High proportion of population with university education across fields	Absence of support mechanisms for involving qualified foreigners
	Absence of work with talents for the needs of the regional economy and prevention of "brain drain"

Table 8: SWOT – Opportunities and Threats

OPPORTUNITIES	THREATS
Political/legislative influences	
Emphasis on supporting quality and excellence along with higher support for whole innovation process (not just R&D) in the R&D&I system	Unstable political situation on both national and regional level
	High administrative burden for projects financed both from EU funds and from Prague grants; system for drawing such funds set up poorly
	Failure to pass new Higher Education Act
	Complicated founding of businesses

Economic/financial influences	
Funds from operational programmes and the second objective for projects in Prague with transregional impact and option of using funding to upgrade research facilities	Stagnation of spending on R&D&I as a result of deterioration in economic situation
	Loss of attractiveness of the region for both foreign investors and new workers (negative image or image unsuitable for innovative activities)
	Ongoing or growing negative impact of economic crisis on the business sector
Social/demographic influences	
	Ongoing or increasing “brain drain” from Prague to regions outside Prague
	Further drop-off in education in the Czech Republic in international comparison, i.e. falling quality of human resources in Czech Republic
Technological influences	
Large research centres support from OP R&DfI (centres of excellence) in Prague’s hinterland	

2.5 INITIAL PROPOSAL FOR DOMAINS OF SPECIALISATION

Although there are opportunities for innovation in all regional branches of the economy, smart specialisation by principle focuses on identifying activities that represent a comparative advantage for the region (i.e. which activities exhibit the most likely potential for growth and general long-term benefit for the economy and competitiveness of the region). Domains of possible specialisation should also contain activities that have economic and research potential in the region while also having supra-regional significance and growth potential, as a relatively high rate of return for possible investments and development of competitiveness can be expected in areas that also impact the competitiveness growth of the region. The existence of facilities and human resources in the region is also necessary for each identified area, potential for further diversification, and the ability to create a multiplier effect and strengthen the regional competitive advantage.

On the basis of the background documents available that map the environment in Prague from the perspective of science, research, technology, application and the structure of economic activities, a number of strong activities stand out that can be divided into four clusters based on thematic similarity.

The following text is based on the background documents elaborated by the Technology Centre ASCR for a workshop on smart specialisation in Prague that took place 9 September 2013.

ACTIVITY CLUSTER 1 – SELECTED LIFE SCIENCES FIELDS

Branches that fall under the general definition of life sciences have traditionally strong research activities with innovation and application potential in the region. At a global level, there are constant changes in the commodity and manufacturing structure of industry, with findings from natural sciences being used more and more along with organic materials that are better for human health and for the environment. Practice in Europe confirms that even relatively small regions can be successful in the life sciences if activities with high added value are concentrated there, even if relatively high initial capital outlays are required.
In this sense, Prague can draw on the presence of important research organisations that conduct research in a broad spectrum of activities that fall under the life sciences (e.g. Charles University Faculty of Medicine and Faculty of Science, Institute of Chemical Technology, Czech University of Life Sciences, BIOCEV, Institute of Biotechnology ASCR, Institute of Physiology ASCR, Institute of Microbiology ASCR, Institute of Inorganic Chemistry ASCR, Institute of Chemical Process Fundamentals ASCR, Institute of Experimental Medicine ASCR, Institute of Molecular Genetics ASCR, Institute of Organic Chemistry and Biochemistry ASCR), which produce significant scientific and research results (particularly in genetics, molecular biology, physiology and microbiology) that are relatively frequently implemented by the application sector in the form of innovations (chemical substances, pharmaceuticals, healthcare devices, medicine). The results are also applied within the network of regional hospitals with high-quality healthcare that reaches global levels. What also attests the strong potential of life science activities is the high concentration of qualified labour and university graduates, including those with a Ph.D. Prague also has significant research activity in the application sector, which deals primarily with biotechnology and the pharmaceutical industry. The expansion of life science research activities in the business sector and the increasing number of new business entities in this area documents the ability of regional entities to collaborate and the interest in retaining qualified labour. At the same time, however, it raises the requirements for regional administration, which should support the expansion of enterprise and prepare incentive measures for foreign investors.

From the perspective of project activities the field of life sciences is strongly represented in Prague, whether it terms of international research cooperation or infrastructure projects. Under the current programming period several important research facilities and laboratories appeared in the region or its immediate surroundings that are close to European and global leaders in terms of their equipment and research agenda. These investment projects were primarily realised in the fields of biotechnology, biomedicine and general medicine.

Key activities within the life sciences that can be identified in Prague are:

- industrial and environmental biotechnology
- biomedical technology
- disease diagnostics and virology
- biologically active materials, biopolymers, biocompatible materials
- pharmaceutical industry
- chemical processes and substances used in medicine

The application of these is evident particularly in healthcare treatment and diagnostic processes and in high-tech industrial products.

ACTIVITY CLUSTER 2 – SELECTED FIELDS OF CREATIVE INDUSTRY

Creative activities are by nature innovative and often lead to the creation of new products and new market opportunities that did not previously exist. At the same time, it is apparent from their nature that a precondition for their further development is a direct link to surrounding entities and consumers. For this reason, they are often concentrated in metropolitan areas including Prague. As Prague is the national economic, administrative and cultural centre of the Czech Republic and also holds an important place in the European economic and cultural context, it is an appropriate place for the development of new ideas and innovations combined with access to the global creative industry networks.

Prague is home to both traditional companies (Barrandov Studios) and new and progressive companies, particularly in the fields of publishing, media services, software production, computer games and other media and artistic products, e-services, etc. Educational and research institutions (industrial design, architecture, conservatories, journalism, etc.) are also located in Prague, the graduates of which find work without problems in existing or new economic entities. These people also have rich experience with international research and practical projects and thus represent a highly qualified, creative and multidisciplinary labour force.

Thanks to the relatively developed digital network in Prague, regional companies can be in contact with other suppliers and clients of its services and are not as dependent on personal contact. The high attractiveness and image of Prague creates the optimal general conditions for this model of development of the creative industry and creative potential of local entities (the international evaluation of Prague confirms this).

Key activities within Activity Cluster 2 that can be identified in Prague are:

- digital media
- mobile applications and software
- internet services
- visualisation and design

ACTIVITY CLUSTER 3 – SELECTED "EMERGING TECHNOLOGIES"

Emerging technologies comprise a set of new technologies, innovative solutions and significant research discoveries in various fields of modern technology. At the same time, emerging technologies represent those technologies that have a strong potential for innovation, basis for progressive development and high competitive advantages. The most frequently presented emerging technologies are biomedicine, electronics, the energy sector, ICT, materials, robotics, transportation, etc. Strong position of research organisations in the inanimate sciences, the tradition of fine mechanics and mechatronics, robotics, artificial intelligence and in particular the high quality of research in the physical sciences and energy sector reflects the potential of related emerging technologies. Emerging technologies are also central to a number of Prague-based innovative companies working in applied research. The importance of these fields is supported by the focus of large research infrastructure facilities in the surrounding area - SUSEN, the Řež reactors, ELI, HiLASE.

Several important application directions that could have high growth potential in the future and bring in other activities with a high added value can be identified.

These include:

- aerial and space technologies
- robotics
- energy and low-carbon technologies
- industrial and medical use of modern lasers

ACTIVITY CLUSTER 4 – KNOWLEDGE INTENSIVE BUSINESS SERVICES (KIBS)

A high concentration of economic entities with distinctly different specialisations in the region raises the need for specialised services often called "knowledge intensive business services" (KIBS). The providers of these services are able, aside from coming up with their own innovations, to support the innovative activities of other entities. These services currently represent a highly dynamic area of economic activities that differ from publicly accessible services. What is characteristic about them is the high level of expert knowledge, which is exploited as an external source of information for the own innovation capacity of the entities making use of KIBS. They cannot be precisely defined using existing economic and statistical classifications, but they are most frequently services in the field of research and development, testing, design, training, increasing efficiency and consulting services that provide new technological, process, organisational and marketing solutions.

The structure of economic entities in Prague shows that the greatest number of companies is active in the sector of services with high added value. This trend attests to a growing demand for expert services caused in particular by the need for company management to deal with the rapidly changing external environment and technological advances that impact the work of their companies. It can thus be expected that the demand for strategically important knowledge will rise in the highly dynamic environment of metropolitan regions.

Despite the fact that large companies are generally the most frequent clients of KIBS providers, it can be expected that small and medium enterprises and research organisations will in time also make more use of them, in part based on their access to public funding earmarked for their development.

Key KIBS that can be identified in Prague are:

- research consulting and services
- information services (marketing analyses, regulations overview, searching for technological trends and fields)
- highly specialised IT services (data mining, visualisation, services using satellite systems)
- specialised business consulting (support for strategic management, seeking out and testing opportunities, evaluating ideas, trendwatching, etc.)
- technological services
- highly specialised education, professional training, mentoring, coaching for implementation, headhunting

Economic entities in Prague will in all likelihood make use of these services in the future. At the same time, it can be expected that there will also be clients of companies providing KIBS that come from other regions. It is also necessary to realise that other Czech regions will most likely have their key activities under their S3 specialisation defined from among the manufacturing sectors (although with a high or medium technological demand). A certain advantage of the metropolitan area is that in defining its specialisation it does not need to take into account the less developed or peripheral areas that always represent a counter-pole to the regional centre and where activities with lower knowledge intensity tend to be located. Prague's specialisation in knowledge-intensive services that can be used by economic entities in the whole Czech Republic is therefore appropriate.

STRATEGY

3

PART 3

STRATEGY

3.1 FRAMEWORK OF NATIONAL STRATEGIC DOCUMENTS

The strategic context laid down by the national strategies of the Czech Republic mentioned in Chapter 1, from which we will quote visions and objectives (or equivalents thereto) below, service as the basis for formulating the proposed part of the Prague RIS. For the vast majority of the presented strategies the coordinators of the proposed measures (if stated) are the central authorities of public administration and organisations run by them. For this reason, the City of Prague, in its proposal of objectives and measures, not only reflects explicitly stated tasks from these strategies and concepts, but also its own position in the public administration system of the Czech Republic, its legal responsibilities and the possibilities for influencing the research and innovation environment within its boundaries.

INTERNATIONAL COMPETITIVENESS STRATEGY OF THE CZECH REPUBLIC (MIT, 2011)

Adopted by Government Resolution No. 713 of 27 September 2011.

VISION: A high and sustainable standard of living for citizens of the Czech Republic based on a firm foundation of competitiveness.

PILLARS: Innovation, market effectiveness and improving the quality of business characteristics, education

RESPONSIBILITY: MIT, MEYS, as well as other ministries and their organisations.

NATIONAL INNOVATION STRATEGY OF THE CZECH REPUBLIC (MIT, 2011)

Adopted by Government Resolution No. 714 of 27 September 2011.

GLOBAL OBJECTIVE: Increasing the significance of innovation and use of cutting-edge technology as a source of competitiveness for the Czech Republic and increasing the benefit thereof for long-term economic growth, for creating quality jobs and for developing the quality of life in the Czech Republic.

Regions are explicitly mentioned in the section “The Public Sector: source of innovation demand and creator of regulation” as creating demand for new solutions or offering opportunities to implement or try out a new technology or product in the public sector.

NATIONAL PRIORITIES OF ORIENTED RESEARCH, EXPERIMENTAL DEVELOPMENT AND INNOVATIONS (RDIC, 2012)

Adopted by Government Resolution No. 552 of 19 July 2012.

PRIORITY AREAS:
Competitive knowledge-based economy
Sustainable energy and material resources
Environment for a quality life
Societal and cultural challenges
Healthy population
Safe society

SMALL AND MEDIUM ENTERPRISES SUPPORT STRATEGY 2014 –2020 (MIT, 2012)

Adopted by Government Resolution No. 923 of 12 December 2012.

VISION: Czech entrepreneur = ideas, confidence, competitiveness and prosperity

Strategic Priority No. 1 – Cultivating the business environment, developing consulting services and educating for enterpreneurship
Strategic Priority No. 2 – Developing enterpreneurship based on support for research, development and innovation, including innovation and business infrastructure
Strategic Priority No. 3 – Supporting internationalisation of SMEs

RESPONSIBILITY: MIT, MoLSA, MEYS and Technology Agency of the Czech Republic.

NATIONAL RESEARCH, DEVELOPMENT AND INNOVATION POLICY OF THE CZECH REPUBLIC (MEYS, 2013)

Adopted by Government Resolution No. 294 of 24 April 2013.

VISION: By 2020 the Czech Republic will have become a country where there is a high and sustainable standard of living based on the firm foundation of competitiveness stemming from new knowledge and its use for innovation in the business and public sector as sources of future prosperity.

The primary goal of the updated National Research, Development and Innovation Policy is to create quality conditions for the creation of new knowledge, to actively push for application thereof in innovation and to contribute to fulfilling the vision outlined above.

OBJECTIVES: ensuring quality human resources, creating an environment for effective dissemination and use of knowledge, increasing the innovation performance of businesses and improving coordination of the management system in the Czech Republic.
In the implementation section the participation of Prague City Hall is mentioned in terms of taking the proposed measures into account in the support programmes being prepared (particularly under the cohesion policy).

NATIONAL SMART SPECIALISATION STRATEGY OF THE CZECH REPUBLIC (MEYS, 2014)

Adopted by Government Resolution No. 1028 of 8 December 2014.

An umbrella document for national and regional innovation strategies of Czech self-governing regions serving as a precondition for allocation of support from EU structural funds for Thematic Objectives 1 – Strengthening Research, Technological Development and Innovation and 2 – Improving the Access, Use and Quality of Information and Communication Technology. It will become part of the National Research, Development and Innovation Policy.

VISION: An enterprising and creative Czech Republic attractive for talents and money

FOR SETTING ITS RESEARCH AND ECONOMIC SPECIALISATIONS THE CZECH REPUBLIC WORKS WITH THE FOLLOWING ELEMENTS:

a) Generic knowledge domains

a. Advanced materials
b. Nanotechnology
c. Microelectronics and nanoelectronics
d. Advanced manufacturing technology
e. Photonics
f. Industrial biotechnology
g. Knowledge for digital economy, cultural and creative industries
h. Knowledge in social sciences and humanities for non-technical innovation

b) Key sectors for application of knowledge

a. Manufacture of transport equipment, sustainability and safety of transport
b. Advanced and efficient mechanical engineering and automation
c. Economical solutions in electronics and electrical engineering
d. IT services and software, IT security
e. Sustainable and safe manufacture and distribution of electricity
f. Pharmaceuticals and medical devices for healthy aging
g. Natural resources, sustainable agriculture, food safety and sufficiency
h. Regionally specific sectors of knowledge application: chemistry, glass and ceramics, rubber and plastics industry, spa industry, media, textile.

3.2 VISION FOR 2020

The vision of the Prague Regional Innovation Strategy is connected to the objective of the Prague Strategic Plan (update in preparation), which we also include here to set out the context. The vision is a description of the future state that should be achieved by measures described in more detail in Chapter 3.3.

PRAGUE STRATEGIC PLAN – STRATEGIC OBJECTIVE "PROSPERITY":

A competitive economy taking advantage of the potential of its research and innovation activities and human resources, in which the local government plays an active role in promoting its economic characteristics, drawing in investment, developing the business environment of human resources and stimulating cooperation between the business, research, academic, non-profit and public spheres.

RIS VISION FOR 2020:

Prague – city where you can find a partner for research and innovation

Prague as a centre of research, development and innovation attracts a variety of potential partners in research and innovation because it offers dozens of public research organisations and business entities who are prepared to collaborate with both domestic and foreign partners on basic and applied research and development. Top teams and infrastructure in selected fields are available here. The city's local government creates demand for new solutions to its needs and expands the support infrastructure that helps new and established companies with their innovative activities. All this in an attractive environment for both professional and private life with a high level of public services.

3.3 KEY AREAS OF CHANGE AND RELATED STRATEGIC OBJECTIVES

Strategy is formulated through "key areas of change", which contain further individual strategic objectives with an emphasis on naming and describing the desired target state.

KEY AREA OF CHANGE A: ENVIRONMENT STIMULATING INNOVATION AND FUNCTIONING PARTNERSHIP

Rationale and expected changes:

The lack of functioning partnership between the actors of the innovation system is one of the primary causes of the low effectiveness of the innovation system. Barriers to communication, mutual misunderstanding of differing goals along with an unclear and uncommunicated vision for regional development and the local government create an environment that does not stimulate innovative activities. One of the central challenges in order to strengthen the competitiveness of Prague's innovation system is building up a long-term partnership between the public, private and academic sector. The goal is to support cooperation between the sectors from the position of the city in order to increase the frequency and quality thereof. Also related to this goal is the need to popularise and promote science and enterprise. Another goal is for the local government to find a reasonable position and role in the innovation system for itself that would complement interventions from the national level. Aside from stimulating cooperation, this refers to formulation of problems by the city, the solutions to which can be found through the help of R&D facilities, e.g. via pre-commercial public procurement (PCP).

This area of change consists of activities where Prague (the Prague local government) has considerable opportunity to take on the role of an active element in the innovation system in all the strategic objectives listed below. In general, however, the central authorities of State administration or organisations run by them can also intervene in Prague at the level of the stated strategic objectives in accordance with the aforementioned national strategic documents.

STRATEGIC OBJECTIVE A.1: INCREASING THE INTENSITY OF COOPERATION BETWEEN THE PUBLIC, PRIVATE AND ACADEMIC SECTORS

Effective cooperation among sectors is an as yet unexploited opportunity for developing innovative companies. The city's local government can contribute to this cooperation by playing the role of active facilitator and mediating contacts between the research and business sphere. The intention is therefore to create sufficient professional and staffing capacity in the municipal local government for this role and to contribute to the development of links between sectors through appropriate support instruments. The objective of interventions is to increase the performance and competitiveness of companies in the region through more efficient cooperation.

Measures/activities/projects

INNOVATION VOUCHERS

The objective of the project is to support inter-sectoral cooperation and at the same time to gather a list of contacts at research organisations for companies and other entities interested in collaborating with them.

In 2014, a second call for innovation vouchers is taking place. In the future, there will be further calls, including specialised calls for specific fields, types of applicant, purposes, etc. (see also Objective B.2).

funding: ESIF[15], City of Prague

SUFFICIENT INSTITUTIONAL CAPACITIES IN THE MUNICIPAL LOCAL GOVERNMENT

The City of Prague is gradually putting together a qualified team specialised in developing the innovation environment in Prague. This team will help plan and implement projects initiated by the City of Prague.

funding: City of Prague

PRAGUE INNOVATION PORTAL

The great number and diversity of entities in the innovation environment can be made more manageable by an internet presentation providing information on services available, contact persons, events held, potential partners, etc. At the same time it will provide information on the activities of the local administration (e.g. on support programmes) and will be one of the tools for the presentation and promotion of Prague as a centre of research and innovation.

funding: City of Prague

FORMAL AND INFORMAL EVENTS ORGANISED BY THE CITY AND ITS PARTNERS

The organisation of events bringing together representatives of the public, business and academic sector, where they will discuss the needs of the various sectors and search for joint solutions.

Deepening of the cooperation between sectors through formalised forms of partnership such as a territorial employment pact or regional council for the development of human resources, i.e. creating such structures in Prague.

funding: City of Prague

SUPPORT FOR ADAPTING RESEARCH RESULTS INTO A COMMERCIALLY APPLICABLE FORM (PROOF-OF-CONCEPT)

Creating a Prague proof-of-concept grant system for adapting the results of applied research at universities and research organisations with the potential for application in public services provided by the City of Prague and municipal organisations. The system will be designed so as to not duplicate the agenda of the Gama programme of the Technology Agency of the Czech Republic.

funding: ESIF

15 European Structural and Investment Funds, in particular the Operational Programme Prague – Growth Pole of the Czech Republic, but for some activities (under the whole PRIS) this can also include the Operational Programmes Research, Development and Education (OP RDE) or Enterprise and Innovation for Competitiveness (OP EIC) depending on the final solution for using the exemptions laid down by EU regulations concerning the conditions for interventions of OP RDE and OP RDE on Prague territory.

SPECIFIC FORMS OF COOPERATION BETWEEN THE RESEARCH AND BUSINESS SECTOR

A contractual relationship between an SME and a highly qualified researcher that deals with a specific problem of the business (product or service innovation, expansion strategy elaboration, searching for new partners, etc.); support will be earmarked for personnel costs associated with the position of researcher.

funding: ESIF

SUPPORT FOR OPEN INNOVATION ACCESS

Creation and sharing of knowledge databases and concentration of the results of research and development supported from regional resources on the website of Prague City Hall or IPR Prague in the spirit of open innovation access.

funding: City of Prague

STRATEGIC OBJECTIVE A.2: INVOLVEMENT OF COMPANIES IN INNOVATIVE SOLUTIONS FOR PUBLIC ADMINISTRATION

An important way in which the municipal local government can help develop the innovation environment is by providing demand for new solutions and innovations that it can use in providing ita public services and in city development. The objective is to teach the local government to formulate tasks for the research and business sector that stimulate activity in both sectors as well as collaboration in addressing regional societal needs. These could include areas such as ensuring safety, energy sector, protecting the environment, housing, public services (transportation, schools, etc.), and providing services using new ICT and IT solutions.

Measures/activities/projects

PUBLIC CONTRACTS FOR INNOVATIVE SOLUTIONS

One of the main ways the local government can stimulate research and innovation activities in the region is to generate demand for new solutions for the purposes of providing public services.

Prague will create a system for collecting suggestions for innovation demand so as to continuously reach out to the research and innovation sphere with its requirements. Depending on the possibilities afforded by the legislation it will strive to use pre-commercial public procurement.

In realising these projects, the activities at the national level aiming to create a SBIR[16] -type instrument will be monitored in order to prevent duplication.

funding: ESIF, City of Prague

MAPPING NEEDS IN THE FIELD OF SOCIAL INNOVATION

An analysis of persistent social problems that require an innovative solution (innovation demand) and evaluation of the innovative performance and existing potential for innovation and barriers in the sector of NGOs, businesses and the public administration (innovation supply).

funding: City of Prague

ACTIVE INVOLVEMENT OF PRAGUE IN THE SMART CITIES AND COMMUNITIES INITIATIVE AS PART OF THE HORIZON 2020 PROGRAMME

The European Union's new Horizon 2020 programme offers specific support programmes designated for city development and their mutual cooperation in order to increase the quality of life in cities. For Prague an opportunity is thus opening up to make use of additional resources for its development, which it should take maximum advantage of considering its limited access to structural funds.

funding: EU – Horizon 2020

16 The government-run Small Business Innovation Research programme in the USA.

STRATEGIC OBJECTIVE A.3: IMPROVING THE PUBLIC GOVERNANCE IN THE FIELD OF RESEARCH, DEVELOPMENT AND INNOVATION

Considering the degree to which the innovation system in the Czech Republic is concentrated within the City of Prague, the city considers it desirable for innovative entities in Prague to actively defend their interests before the national level of public administration. The reason for this is in particular Prague's disadvantaged position in accessing support from EU structural funds, which have long served as the dominant source of funding for developing research infrastructure in the Czech Republic. This has negative consequences for Prague-based entities. To this end a partner platform was created in April 2014 – the Prague Innovation Council (see also A.1) – made up of representatives from all sectors (public, academic and business).

Measures/activities/projects

LOBBYING FOR MORE EFFECTIVE SUPPORT OF RESEARCH AND DEVELOPMENT AT THE NATIONAL LEVEL

Creating pressure on the responsible bodies to implement the measures proposed in the relevant national strategies, which are important for the whole Czech Republic.

funding: City of Prague

LOBBYING FOR REFLECTING THE TRANS-REGIONAL IMPACT OF THE PRAGUE INNOVATION SYSTEM

Creating pressure on the ministries responsible for research and innovation policy to deal with the disadvantage of Prague's position in accessing support from EU structural funds, e.g. through compensation from national programmes.

funding: City of Prague

LOBBYING FOR HIGHER LEVEL OF USE OF EUROPEAN SOURCES FOR RESEARCH AND INNOVATION IN THE CZECH REPUBLIC

In reaction to the limited use of relevant other EU financial sources (e.g. the CIP programme) in 2007-2013, Prague will be pushing for their greater use in the Czech Republic in the 2014-2020 period.

funding: City of Prague

INDICATORS FOR KEY AREA OF CHANGE A

- Volume of funds that companies allocate for innovation in reaction to public administration support measures for 3–5 years (expenditure of companies/expenditure of public administration)
- Financial volume of cooperation based on the use of vouchers within 5 years of its use (also an indicator for OP Prague – Growth Pole of the Czech Republic)
- Number of new products/services created on the basis of pre-commercial public procurement
- Number and volume of funds for innovation projects run by the local government for addressing the city's needs
- Reducing the proportion of European/national/regional programmes for supporting research, development and innovation where Prague entities have limited access compared to non-Prague ones

CONDITIONS AND BARRIERS FOR REALISATION IN THIS KEY AREA OF CHANGE

- Overcoming the positions and opinions that the Prague local government does not need to strive to improve the business environment and influence the direction of economic development because of Prague's high economic performance
- Resolving the city's long-lasting problems preventing the Prague City Council from comprehensively addressing the city's development, including the region's innovation system
- To date Prague has not been active in the city's economic development; this is why it must build up trust and its position as a relevant partner to companies and research organisations
- Long-term restricted access of Prague-based organisations to European subsidies.

KEY AREA OF CHANGE B: SIMPLIFIED CREATION AND DEVELOPMENT OF KNOWLEDGE-INTENSIVE COMPANIES

Rationale and expected changes:

The initial development phase of a company is a critical period in its existence and the speed and method by which it is overcome significantly determines the business's further development. The limited competency of entrepreneurs, a lack of own capacity and capital to develop the business in its initial stage and the inability to invest in innovative activities often lead to the stagnation or cessation of a company. Reducing high level of failure at the start of doing business through a combination of support instruments will help lead to greater business activity in the region and to increasing the chances that companies of trans-regional or even global importance will appear and develop. In the case of emerging innovative companies, this includes providing appropriate spaces for doing business and providing access to expert business services and know-how. These are primarily services in the field of finding market opportunities, analysis of current technological and research trends, consulting on strategic decision-making, seeking out market partners, technology transfer, protection of intellectual property, access to financial resources, evaluating the impact of innovation on the company, etc. Yet these services place great demands on qualifications of employees that provide them, which in the Czech Republic is an issue that demands increased attention. The objective is that entrepreneurs starting out in knowledge-intensive fields will have such a portfolio of services at their disposal in order to successfully get their business running and commercialising their innovative ideas.

The central authorities of State administration or organisations run by them should deal with the realisation of the stated strategic objectives within Prague in accordance with the aforementioned national strategic documents. Prague will be active in this area of change primarily through support from EU structural funds for selected types of activities and projects.

STRATEGIC OBJECTIVE B.1: FACILITATING DEVELOPMENT OF NEW INNOVATIVE SMES, IN PARTICULAR THROUGH FINANCIAL INSTRUMENTS

Improving the access of new (less than three years of existence) innovative SMEs to funding is a way to achieve higher business activity that is associated with considerable risks. This refers to the high level of risk for innovative projects that the financial sector is not willing to accept, which impairs companies' activities. The existence of new instruments reduces the need of companies to search for funding, leaving them with more time for other activities related to their business.

Measures/activities/projects

REGIONAL FINANCIAL INSTRUMENTS

(Note: The specific form is bound to the OP Prague – Growth Pole of the Czech Republic, for which an analysis of the use of financial instruments is being drawn up.)

In connection to the Operational Programme Prague – Growth Pole of the Czech Republic, up to two financial instruments will be prepared at the regional level, either guarantee, loan or capital instrument.

funding: ESIF

INVESTMENT FORUMS

Organising of events where potential investors would be presented with investment opportunities by new companies and entrepreneurs, especially from Prague business incubators, e.g. mediation of contacts of potential investors.

funding: City of Prague

STRATEGIC OBJECTIVE B.2: IMPROVING THE ACCESSIBILITY AND QUALITY OF SERVICES FOR INNOVATION AND ENTERPRENEURSHIP

Innovative SMEs depend in their activities on successful use of results of research and development and commercialisation of new knowledge, which often arises from the public research or university sector. This transfer of new knowledge for commercial application can be supported knowledge and technology transfer services. Facilitating and providing access to this process for new and existing companies leads to an increase in the business activity of knowledge-intensive companies for which the region has suitable conditions thanks to its diverse structure of R&D entities. The provision of these services and services listed under objectives B.1 and B.3 is demanding in terms of qualifications and experience of employees providing them. Only services of sufficient quality lead to effective cooperation and use of innovation infrastructure and to successful realisation of innovative ideas. The objective is to create conditions for increasing qualification of personnel providing these services and developing the services with contribution of experienced experts.

Measures/activities/projects

SUPPORT FOR CREATION AND DEVELOPMENT OF NETWORK OF ENTITIES SUPPORTING KNOWLEDGE AND TECHNOLOGY TRANSFER

Bring together existing entities within Prague and unified presentation of their services.

funding: ESIF

SPECIFIC VOUCHERS SUPPORTING USE OF SERVICES FOR BUSINESSES

E.g. for support of international PCT-type patent applications that include research on the existence of similar solutions and evaluation of countries where IPR protection should be applied.

funding: ESIF

EDUCATIONAL PROGRAMME FOR PROVIDERS OF INNOVATION SUPPORT SERVICES

Creation of an educational programme for employees of business incubators and knowledge and technology transfer centres will be initiated in cooperation with universities.

A programme supporting internships in the field of technology transfer at similar foreign facilities and for acquiring foreign workers to come to Prague.

The objective would also be to create a qualified team that could effectively support the use of services of incubators, centres for technology transfer, etc. on the part of SMEs.

funding: ESIF, City of Prague

MENTORING AND COUCHING FOR NEW COMPANIES

Consulting (developing a business plan, mentoring, identifying business opportunities, finding appropriate partners) for SMEs and start-ups, etc.

funding: ESIF

SUPPORT FOR INTERNATIONALISATION OF SUCCESSFUL SMES

Creating a support initiative for SMEs (that are successfully established at the regional/national level) in internationalising their business activities. The objective is to support successful companies in assessing marking opportunities abroad, to help them prepare business plans, to identify appropriate trade channels, to create a marketing strategy, etc.

funding: ESIF

SPECIALISED SERVICES FOR SUPPORTING INNOVATIVE ENTREPRENEURSHIP AND POLICY

Creating capacities for systematic monitoring of technology and research trends, technology assessment and mapping of research, technology and innovation potential of Prague for the needs of businesses, research organisations and local government.

funding: ESIF, City of Prague

STRATEGIC OBJECTIVE B.3: HIGHER QUALITY INNOVATION INFRASTRUCTURE FACILITIES FOR INNOVATIVE START-UP SMES

Science and technology parks (STPs), incubators and similar facilities which provide access to both appropriate support services and specific spaces such as shared laboratories, workshops, etc. are a standard component of business support infrastructure. In Prague the supply of such facilities does not meet the demand. Aside from increasing this supply, the objective is to connect them with quality advanced services (see Objective B.2) so that the added value for a company to set up in a science and technology park, incubator or similar facility would outweigh renting out standard premises and thus significantly increase the success rate of start-ups.

Measures/activities/projects

INCREASING THE EFFICIENCY OF STPS INCLUDING BUSINESS INCUBATORS

With the objective of increasing the effectiveness of STPs, such facilities will be expanded on the basis of broad agreement among the relevant actors so as to provide services to a higher number of companies.

Emphasis on professionalising services provided in SPTs, in particular services connected to technology and knowledge transfer (see Objective B.2), will be an important part of their development.

funding: ESIF

EUROPEAN SPACE AGENCY BUSINESS INCUBATION CENTRE (ESA BIC PRAGUE)

At the end of 2013, the ESA BIC Prague was founded, an incubator for companies developing terrestrial applications of space technology. The City of Prague declared support of its operation until at least 2018.

funding: ESIF, City of Prague

(VIRTUAL) INCUBATOR FOR CREATIVE SECTORS

These sectors represent a somewhat specific group with different requirements for support. For this reason, the possibility of setting up a specific incubator for selected sectors according to relevant domains of RIS specialisation will be examined (see Chapter 2.5).

funding: ESIF

INDICATORS FOR KEY AREA OF CHANGE B

- Volume of non-subsidy support (financial amount)
- Number of newly created companies resulting from intervention
- Number of successfully transferred technologies resulting from intervention
- Reduction in the percentage of incubator applicants that meet the criteria but are rejected
- Percentage of satisfied clients of services for innovation and entrepreneurship (e.g. at STPs or incubators)
- Number of businesses supported by a regional instrument that increase their export or begin to export within 3 years

CONDITIONS AND BARRIERS FOR REALISATION IN THIS KEY AREA OF CHANGE

- Insufficient legislative support for research and innovative activities by companies.
- Insufficient awareness of (and demand for) the advantages of services supporting innovation (protection of intel lectual property, technology foresight, market intelligence).
- Motivation of companies to push for foreign expansion based on innovations.

KEY AREA OF CHANGE C: MORE INTENSIVE DEVELOPMENT OF LOCAL HUMAN RESOURCES FOR THE NEEDS OF THE KNOWLEDGE ECONOMY

Rationale and expected changes:

According to international studies the knowledge and capabilities of students in the Czech Republic are deteriorating. This is in conflict with to the need to transform the Czech economy into one based on the production and use of knowledge. Even though Prague has a high proportion of residents with completed post-secondary education and a high concentration of research and development capacities including human resources, the problem is the falling quality of graduates (caused by a dramatic growth in the number of participants in tertiary education), who do not have sufficiently developed universal and soft skills, which reduces their job flexibility, and the limited opportunities for realisation for the most talented, who therefore go abroad. A discrepancy is arising between the structure of graduates and the needs of the economy. Prague's objective is thus to intervene in finding, support and development of gifted individuals in order to create conditions for talented students and scientists to stay in Prague and to have the opportunity to continue to develop and apply their abilities and serve as an inspiration for others.

Above all the central authorities of State administration or organisations run by them should deal with the realisation of the stated strategic objectives within Prague in accordance with the aforementioned national strategic documents. However, Prague has the opportunity to take on an active role, particularly in terms of primary and secondary education (objectives C.1 and C.3).

STRATEGIC OBJECTIVE C.1: FACILITATING THE DEVELOPMENT OF GIFTED STUDENTS (STARTING AT LOWER LEVELS OF EDUCATION)

Facilitating the development of knowledge and skills of gifted individuals, which can also lead to raising of internationally recognised personalities, contributes to increasing the overall education level of the population because gifted individuals are an inspiration for others. Deteriorating results of the Czech Republic in current international studies of student capabilities demonstrate the need for an active approach and activation of resources concentrated in Prague. The fact that education is the responsibility of municipal and regional governments is a good starting point for achieving change. The objective is to achieve a higher level of individual approach in educating gifted individuals and expanding possibilities for developing their skills during their studies and launching cooperation with businesses in the region early in their career.

Measures/activities/projects

COMPETITIONS AND SCHOLARSHIPS FOR GIFTED STUDENTS Organisation of competitions, with a system of scholarships for the winners to participate in international competitions. *funding: City of Prague*
SUPPORT FOR COOPERATION BETWEEN PRIMARY AND SECONDARY SCHOOLS AND RESEARCH ORGANISATIONS, INCLUDING UNIVERSITIES, AND BUSINESSES Making idle capacities of laboratories and other specialised spaces at research organisations, including universities, and businesses available to lower level schools. Support of student professional activity. *funding: City of Prague*

SUPPORT FOR INVOLVING EXPERTS IN TEACHING AT SECONDARY SCHOOLS In particular in technical fields it is key to provide students with current knowledge from practical experience. For this reason, it is beneficial to get experts from the field involved in teaching at secondary schools. *funding: City of Prague*
SUPPORT FOR EXISTING AND INITIATING THE CREATION OF NEW TYPES OF SCHOOL AND EXTRACURRICULAR ACTIVITIES These activities, e.g. thematic camps, summer schools, seminars, would expand the range of educational opportunities for students beyond the school curriculum. *funding: City of Prague*
EDUCATING TEACHERS IN WORKING WITH DIFFERENTLY TALENTED STUDENTS Setting up an educational programme for teachers at primary and secondary schools in collaboration with universities and non-profit organisations. Support for a more individual approach to individuals over the course of their education. *funding: ESIF*

STRATEGIC OBJECTIVE C.2: FACILITATING OF ACQUIRING EXPERIENCE FOR GIFTED POSTGRADUATE STUDENTS AND YOUNG SCIENTISTS AT THE START OF THEIR CAREER

Following from Objective C.1 is the need to facilitate the development of gifted individuals at higher levels of education for the needs of the knowledge economy. Postgraduate students and young scientists should be motivated to commercialise their knowledge at the start of their scientific career or business activities. It is desirable to make it possible for talented scientists to acquire experience through interdisciplinary, cross-sector or cross-border mobility as early in their career as possible. Thus they can achieve a more natural connection between the domestic and foreign scientific and business community.

Measures/activities/projects

ADDITIONAL SCHOLARSHIPS FOR TALENTED POSTGRADUATE STUDENTS An additional scholarship programme (supplementing the national level programmes for postgraduate students in fields linked to the domains of smart specialisation). *funding: ESIF, City of Prague*
RETURN GRANTS FOR YOUNG SCIENTISTS Additional programme (supplementing national level programmes) for young scientists with foreign experience in fields linked to the domains of specialisation. *funding: ESIF, City of Prague*
SECTORAL MOBILITY FOR POSTGRADUATE STUDENTS AND YOUNG SCIENTISTS UNDER 35 Exchange internships and training in fields linked to the domains of smart specialisation - the student is involved in solving the business's issue in the form of a paid internship while active at a university. *funding: ESIF, City of Prague*

STRATEGIC OBJECTIVE C.3: INCREASING ENTREPRENEURSHIP OF TERTIARY EDUCATION GRADUATES

The current low interest of young people in the career of an entrepreneur (and employer) must be increased; activities at the regional level promoting successful examples of innovative companies could help with this. The objective is to increase the proportion of young people who are interested in an entrepreneurial career path, with an emphasis on knowledge-intensive fields based on opportunities in the region.

Measures/activities/projects

PROMOTION OF RESULTS OF INNOVATIVE ENTERPRISES WITH AN EMPHASIS ON DOMAINS OF SMART SPECIALISATION

Activities leading to increased awareness of the successes of innovative companies, including for example adding the Prague brand to already existing competitions. Motivational lectures for primary and secondary school students on the advantages and disadvantages of doing business.

funding: City of Prague

BUILDING UP A REGIONAL IDENTITY IN THE FIELD OF ENTERPRISE, CULTURE AND PUBLIC COMPANIES WITH AN EMPHASIS ON THE DOMAINS OF SMART SPECIALISATION

Promotion of Prague as an attractive place for doing business among Prague inhabitants.

funding: City of Prague

INDICATORS FOR KEY AREA OF CHANGE C

- Number of Prague participants in national and international competitions for primary/secondary schools students
- Number of students involved in programmes for developing talented individuals
- Number of projects with cooperation between businesses and research organisations, including universities, in the form of internships for postgraduate students and young scientists under 35
- Number of graduates up to 26 years old receiving support who started a business

CONDITIONS AND BARRIERS FOR REALISATION IN THIS KEY AREA OF CHANGE

- Education system is not based on cooperation of schools and employers.
- Interest of students in individual fields of study (secondary and post-secondary) does not correspond to needs of labour market.

KEY AREA OF CHANGE D: INCREASING INTENSITY OF INTERNATIONALISATION IN RESEARCH AND INNOVATION

Rationale and expected changes:

Despite the dominant position of Prague in the research and innovation system of the Czech Republic, the international position and level of internationalisation of innovation activities in Prague does not live up to its potential. While the frequency of involvement in international research programmes is significant in Czech terms, local entities are rarely in the role of project coordinator and their activity compared to entities from the EU-15 remains unsatisfactory. The objective is thus to increase frequency of cross-border mobility, which along with promotion of R&D facilities abroad will be a source of growing awareness of Czech R&D. Together with removal of barriers for qualified foreign workers to work here it will support greater openness of the innovation system to international cooperation. Presentation of Prague abroad will also concern the target group of entrepreneurs and investors with the objective of boosting Prague as an attractive destination for setting up entrepreneurial activities and for qualified workers to take advantage of the local R&D capacities. This presentation must be supplemented by an offer of services that facilitate arrival and stay of foreign scientists, entrepreneurs and companies so as to support the initiation of activity of employers who provide jobs with high added value.

The central authorities of State administration or organisations run by them should deal with the realisation of the stated strategic objectives within Prague in accordance with the aforementioned national strategic documents. However, Prague has the opportunity to take on an active role, particularly in goals D.1 and D.2.

STRATEGIC OBJECTIVE D.1: PRESENTING POTENTIAL OF PRAGUE IN RESEARCH, DEVELOPMENT AND INNOVATION ABROAD

Increasing awareness of facilities, possibilities and results of the innovation system in the Prague metropolitan area abroad is an objective that supports the other strategic objectives in this area of change, i.e. cross-border activities in the field of research and innovation. Increasing awareness on what Prague has to offer helps increase its attractiveness and the interest of foreign workers and companies..

Measures/activities/projects

PROMOTION OF INNOVATIVE ACTIVITIES IN PRAGUE THROUGH THE PRAGUE HOUSE IN BRUSSELS

Using the Prague House to present research and innovation facilities in Prague, for contacts to European providers of support and potential partners for joint projects.

funding: City of Prague

MARKETING FOCUSED ON NEW AND EXISTING FOREIGN INVESTORS

Active presentation of Prague at international events comprising information on potential partners for research, development and innovation.

Collaboration with CzechInvest in communicating with potential investors.

funding: City of Prague

PRESENTATION OF INTERNATIONALLY SIGNIFICANT RESEARCH AND DEVELOPMENT RESULTS

Connecting the Prague brand with significant and proven research results in presentation abroad.

funding: City of Prague

Also see the Prague Innovation Portal under objective A.1

STRATEGIC OBJECTIVE D.2: FACILITATION OF COMING AND WORKING OF QUALIFIED FOREIGN WORKERS AND EMPLOYERS IN PRAGUE

Facilitating the arrival and work of qualified workers and knowledge-intensive employers in the region is important for the influx of foreign experience and know-how, which can enrich the innovative activities of local entities. A means to achieve this objective is to create a system of specific services to make it easier for them to set up and start activity in Prague all located in a single contact point.

Measures/activities/projects

CREATION AND PROMOTION OF A SYSTEM OF SPECIALISED SERVICES FOR INCOMING QUALIFIED FOREIGN WORKERS Creating an assistance service with a central contact point for incoming skilled workers that would make it easier for them to start their work stay in Prague (administration, accommodation, getting to know Prague, etc.). *funding: City of Prague*
EXPANDING EXISTING SERVICES FOR QUALIFIED FOREIGNERS WORKING IN PRAGUE Creating a special workplace (counter) where it would be possible to conduct necessary acts provided/performed by Prague City Hall in several world languages. *funding: City of Prague*

STRATEGIC OBJECTIVE D.3: INCREASING FREQUENCY OF CROSS-BORDER MOBILITY OF SKILLED WORKERS TO STRENGTHEN RESEARCH TEAMS

For the growing demand for worker quality and qualifications in research and development, it would be good to also use human resources from abroad that can bring the needed knowledge and experience to Prague research teams and provide access to collaboration with foreign entities. At the same time, for the same reason the frequency of Prague workers and researchers taking internships and training in foreign companies and R&D centres should be increased.

Measures/activities/projects

MOBILITY PROGRAMME FOR SUPPORTING THE INFLUX OF SCIENTISTS FROM FOREIGN COMPANIES AND RESEARCH ORGANISATIONS, INCLUDING UNIVERSITIES An additional programme supplementing national initiatives for the reintegration of Czech scientists and attracting foreign scientists in fields linked to Prague's domains of specialisation (see Chapter 2.5). *funding: City of Prague*
SELECTIVE SUPPORT OF STUDY AND WORK TRAVEL ABROAD An additional programme supplementing national initiatives for the mobility of researchers in fields linked to Prague's domains of specialisation (see Chapter 2.5) with a focus on working in companies or research organisations. *funding: City of Prague*

INDICATORS FOR KEY AREA OF CHANGE D

- Frequency of press releases, articles etc. on the Prague innovation system in foreign media
- Number of international research and innovation partnership projects
- Level of satisfaction with the services for foreign workers and employers

CONDITIONS AND BARRIERS FOR REALISATION IN THIS KEY AREA OF CHANGE

- The interest of entities promoting the Czech Republic and Prague abroad in building a multidimensional brand for the region (based on more elements than cultural riches).

3.4 IMPLEMENTATION

The key thing for successful implementation is to formulate specific projects for the individual objectives listed in section 3.3 with a designated responsible organization or person and source of funding. To this end an Action Plan for 2015-2016 will be drawn up to follow up on the PRIS. The Action Plan will consist of a set of projects and project plans ready for implementation.

A key decision for the successful implementation of the PRIS objectives will be the decision on organisational provisions for strategy implementation by local authorities. The non-existence of an executive body on the part of the city to date was one of the causes of the failure of the BRIS strategy from 2004. The designation of a coordinator on the part of the city and the expansion of its capacities is a necessary precondition for fulfilling the PRIS objectives.

PRIS MANAGING AND COORDINATING BODY (RIS MCB)

An authority with executive powers and political responsibility made up of the following:

- the Prague City Councillor responsible for science and research
- the Prague City Councillor responsible for business support
- the Prague City Councillor responsible for education
- the director of the Prague Institute of Planning and Development
- the head of the Office for Research, Development and Innovation at IPR Prague
- the director of the Prague City Hall Department of Business Activity
- the head of the Support of Entrepreneurship and Innovation Unit at the Department of Business Activity

Primary activities:

- setting objectives and monitoring of implementation
- supervising implementation of the Action Plan
- political and institutional support

PRAGUE INNOVATION COUNCIL (PIC)

A platform for cooperation in the role of an advisory body for the managing and coordinating authority of the PRIS.

Primary activities:

- Supervising the preparation and implementation of the Prague Regional Innovation Strategy, including proposing appropriate projects and commenting on the process of formulating the smart specialisation domains
- Preparing positions and statements on the development of infrastructure for research, development and innovation in Prague
- Preparing positions on proposed calls for priority axis 1 of Operational Programme Prague – Growth Pole of the Czech Republic
- Proposing measures for improving the innovation and business environment in Prague and the Czech Republic
- Acting as an umbrella for the activity of the working groups (innovation platforms)

IMPLEMENTING BODY

Responsibility for implementation will be specified in more detail in the Action Plan according to the individual projects. On behalf of the city the implementers will be Prague City Hall, the Institute of Planning and Development and other relevant municipal organisations.

Prague City Hall Department of Business Activity is in charge of coordination of processes in the field of support for business and innovation within Prague City Hall and among the organisations managed and owned by the City of Prague.

Working groups (innovation platforms) under the leadership of the Prague Innovation Council will be established according to the need for discussion of or dealing with specific issues, preparing projects and developing the entrepreneurial discovery process, i.e. looking for competitive advantages and ways to make use of them for economic development in the region with direct participation of the region's innovation system actors.

PERSONNEL SUPPORT FROM THE MINISTRY OF EDUCATION, YOUTH AND SPORTS

The Ministry of Education, Youth and Sports has established the following positions in all Czech regions in reaction to the European Commission's requirement related to support from structural funds for the 2014-2020 period in the field of research, development and innovation, i.e. the requirement to elaborate and implement an innovation strategy based on the concept of smart specialisation.

a) S3 manager (until June 2015)
Main job description: drawing up the Prague regional annex to the Czech National Smart Specialisation Strategy; communication with relevant actors and participation in implementing the PRIS.

b) S3 project manager (until June 2015)
Main job description: supporting the S3 manager + adapting selected projects into the form of a project application for support from European funds.

The functioning of both positions after funding from OP Research and Development for Innovation ends is not yet clear. The ministry expects further support using OP Research, Development and Education, yet in the case of Prague this option has not yet been confirmed due to the target area for the programme (only non-Prague regions). The duties could be taken over by IPR Prague.

3.5 BUDGET

Multiple sources of funding will be used to implement the innovation strategy measures, particularly Operational Programme Prague – Growth Pole of the Czech Republic (OP PGP) and the City of Prague budget.

Table 9: Sources of funding for RIS

	TOTAL	EU	CITY OF PRAGUE	APPLICANTS
OP PGP Priority Axis 1	€ 125 m	€ 64.5 m	€ 32.3 m	€ 32.2 m
City of Prague budget (estimate for period 2014-2016)	€ 2 m*	--	€ 2 m	--

**) to be specified based on Action Plan*
Source: IPR Prague

OP PGP will be financed by selected activities from Key Areas of Change A and B[17]; according to the draft programme approved by the Prague City Assembly (Resolution No. 40/49 of 19 June 2014) and the Government of the Czech Republic (No. 556 of 9 July 2014) this includes:

- support for activities leading to commercialisation of research results using proof-of-concept type projects – Strategic Objective A.1
- projects for pre-commercial public procurement and public sector innovation demand – Strategic Objective A.2
- projects of cooperation between the research sector and the application sphere – Strategic Objective A.1
- increasing the quality and efficiency of science and technology parks, including incubators – Strategic Objective B.3
- the creation and development of facilities providing progressive services for entrepreneurs (SMEs) – Strategic Objective B.2
- developing innovative companies in the early stages of their life cycle – Strategic Objective B.1

The City of Prague budget will be used for selected activities realised by the city listed in Chapter 3.3. The overall estimated costs for these activities through 2016 totals roughly € 2 million. To realise the PRIS objectives it is proposed that the use of city funds be coordinated with the activities of the Cesta ke vzdělání ("Path to Education") foundation, the focus of which corresponds to certain strategy objectives.

The Operational Programme Research, Development and Education (OP RDE) under the Ministry of Education, Youth and Sports and the Operational Programme Enterprise and Innovation for Competitiveness (OP EIC) coordinated by the Ministry of Industry and Trade will also intervene in certain types of activity on Prague territory. These activities will not require funding from the City of Prague budget with the exception of projects where the City of Prague or its organisation is the applicant or partner (no such cases are currently being considered however). The activities that this possibility will affect have not yet been explicitly listed by the ministries in the current versions of their operational programmes however.

17 For more information see the OP PGP draft available at http://www.prahafondy.eu/cz/budoucnost-2014/op-praha---pol-rustu-cr.html

3.6 MONITORING IMPLEMENTATION OF THE STRATEGY

Strategy implementation will be launched following its approval by the Prague City Assembly by drawing up the Action Plan as a set of projects supported by the city's local administration for the period 2015-2016, which will be regularly updated in connection with the processing of monitoring reports on PRIS implementation.

The descriptions of the strategic objectives also include monitoring indicators, the fulfilment of which will be periodically evaluated. The first evaluation will take place at the end of 2016 and will be conducted by independent experts and the Prague City Hall Department of Business Activities in cooperation with IPR Prague. The results will be an impulse for updating the objectives, measures and action plan for the PRIS.

3.7 PUBLICITY

Research, development and innovation have until now been a neglected topic in the presentation of Prague's qualities and strong points. In the future, it will be necessary to actively use them to promote the metropolis in the Czech Republic and especially abroad. To make use of research infrastructure and potentially other entities or facilities that are located or being built in Prague's immediate surroundings, will also be effective for foreign promotion.

For these purposes the following activities can be considered:

- Using a web presentation summarising the city's relevant activities
- Using characteristics from the field of science, research, etc. in coordination with the activities to build the Prague brand in accordance with the Prague Strategic Plan
- Making more active use of Prague House in Brussels
- Getting involved in relevant promotional activities by other entities
- Elaborating a marketing strategy for presenting research, development and innovation in Prague

LIST OF ABBREVIATIONS

ASCR	Academy of Sciences of the Czech Republic
BRIS	Bohemian Regional Innovation Strategy
CDAP	City Development Authority Prague
COSME	Programme for the Competitiveness of Enterprises and small and medium-sized enterprises
CR	Czech Republic
CSO	Czech Statistical Office
CTU	Czech Technical University in Prague
CULS	Czech University of Life Sciences Prague
CZK	Czech crown (currency)
EA	economically active (population)
EC	European Commission
ELI	Extreme Light Infrastructure
EPO	European Patent Office
ERDF	European Regional Development Fund
ESA BIC	European Space Agency Business Incubation Centre
ESF	European Social Fund
ESIF	European Structural and Investment Funds (includes ERDF and ESF)
EU	European Union
FDI	foreign direct investment
FP7	7th Framework Programme for Research and Technological Development
FTE	full time equivalent
GERD	Gross Expenditure on Research and Development
GDP	gross domestic product
ICT / IT	information and communication technology
IPR Prague	Prague Institute of Planning and Development
KIBS	knowledge intensive business services
MCB	managing and coordinating body
MMR	Ministry for Regional Development of the Czech Republic
MIT	Ministry of Industry and Trade of the Czech Republic
MEYS	Ministry of Education, Youth and Sports of the Czech Republic
MoLSA	Ministry of Labour and Social Affairs of the Czech Republic
NACE	General Nomenclature of Economic Activities
NGO	non-governmental organization
NUTS	Nomenclature of Territorial Units for Statistics
OKEČ	sectoral classification of economic activities (used before NACE)
OMEN	Optimal practices, development policies and predictive models for regions in an enlarged EU
OP R&DfI	Operational Programme Research and Development for Innovation (2007-2013)
OPPA	Operational Programme Prague - Adaptability (2007-2013)
OP EIC	Operational Programme Enterprise and Innovation for Competitiveness (2014-2020)
OPPC	Operational Programme Prague - Competitiveness (2007-2013)
OP PGP	Operational Programme Prague – Growth Pole of the Czech Republic (2014-2020)
OP RDE	Operational Programme Research, Development and Education (2014-2020)
PCP	pre-commercial public procurement
PCT	Patent Cooperation Treaty
PIC	Prague Innovation Council
PRIS	Prague Regional Innovation Strategy
PRVEK	Prague Council for Research and Economy
R&D	research and development
R&D&I	research, development and innovation
RIS	Regional Innovation Strategy
RIS3	Research and Innovation Strategy for Smart Specialization
RDIC	Research, Development and Innovation Council of the Czech Government
SBIR	Small Business Innovation Research
SME	small and medium enterprise
SPD 2	Single Programming Document for Objective 2 of the NUTS 2 Prague Region
SPD 3	Single Programming Document for Objective 3 of the NUTS 2 Prague Region
S3	smart specialisation strategy
STP	science and technology park
SWOT	strengths, weaknesses, opportunities, threats
TBP	technological balance of payments
TC AS	Technology Centre of the Academy of Sciences of the Czech Republic

NOTES

Prague Regional Innovation Strategy (Prague RIS3)
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The strategy formation process included representatives of the Prague
local government, universities, research organisations, the business sector,
non-profit organisations and the relevant State organisations and agencies.

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