

Prague - Background Document

12th Peer Review Workshop, 5-6 November 2013

Prague – Capital City of the Czech Republic

Capital City of Prague is an economic, scientific, educational, cultural and political centre of the Czech Republic and holds an exclusive position in many fields of social life. It has a specific position in regional structure – within the same boundaries it is a municipality, a self-governing region and both NUTS 2 and NUTS 3 region. Prague represents major concentration of inhabitants (1.2 million = 12% of country's total) and institutions (national authorities, political institutions). It ranks among the best performing EU regions in terms of economic performance at NUTS 2 level.



Geography

Prague holds a significantly central geographical position in Central Europe which presents an opportunity for the city to find itself a specific role in European space. Distance to borders of neighbouring countries is relatively short: Germany – 120 km, Poland – 120 km, Austria – 150 km, Slovakia – 240 km. Also, capitals of neighbouring countries are not that distant: Wien – 310 km, Bratislava – 320 km, Berlin – 350 km, Warsaw – 630 km. Position of Prague within the Czech Republic makes it a natural centre of the country.

Prague is the largest municipality (and the smallest region) in the country with area of 496 km². Population density is 2,500 inhabitants/km², which is due to countryside nature of city outskirts with significant share of agricultural land and greenery.

Economy

Prague has an exceptional position in country's economy as it produces 25% of national GDP and GDP per capita is at 215% of country's average. Economic performance is high even in comparison to other EU regions as GDP per capita accounts for 172% of EU-27 average, placing Prague among 10 best performing NUTS 2 regions and at around 60th place among NUTS 3 regions.

The regional economy has undergone a major transformation since early 1990s with significant increase in gross value added in trade, ICT and financial services. Nowadays, the sector of services plays a major role in Prague economy as it accounts for almost 84% of gross value added creation and 83% of employment. Industry and construction sectors account for 15% of gross value added and 17% of employment.

Human resources

Prague is the second largest Czech region in terms of population size with 1.2 million inhabitants. Foreigners account for nearly 13% of inhabitants which is three times higher than country's average. However, national minorities are not concentrated in specific locations and social structure thus remains quite homogeneous throughout the whole city area.

High share of highly educated workforce together with low unemployment rate are two distinct features of Prague population. The share of persons with tertiary education is 31% which is twice the country's average. General unemployment rate is around 3.3% compared to 7.2% in the Czech Republic as a whole. Also, employment rate (the share of employed persons among people aged over 15) of 54% is slightly higher than the country's average of 51 %.

Prague is also a major centre of tertiary education with around 140 thousand university students, among them 10 thousand PhD students. Those account for 37% of all university students in the Czech Republic. Only 30% of university students are Prague residents, majority of them come from other Czech regions and from abroad.

Research, Development and Innovation

Prague represents a major concentration of R&D&I activities in the Czech Republic, especially regarding research funded from public sources in public research institutes and public universities. Innovation activities in business sector do not show any significant differences from situation in other Czech regions. What makes Prague (organizations and companies residing in Prague) special within the country is its share on export of technological services (60%), share on export of high-tech products (10% - high contrary to low share of manufacturing) and share on income from intellectual property rights (95%).

Statistics on R&D expenditure show significant share of Prague institutions and companies on country's total in the fields of medical science (65%), natural sciences (53%) and social science and humanities (61%). On the other hand, share of expenditure in technical sciences is minor (17%).

Similar situation is true for researches and their share on country's total: medical sciences (58%), natural sciences (52%) and social sciences and humanities (55%) are leading branches.

Prague is home for 50 out of 74 public research institutes in the Czech Republic and for 8 public universities (one third of country's total). Two largest universities are Charles University and Czech Technical University. This explains the high share of public research expenditure being concentrated in Prague. Such high number of research and educational organizations cover a very broad range of scientific branches with no apparent specialization.

Major hospitals, some with specialized departments unique in the Czech Republic, are also located here, which represent places where R&D outputs can find their use.

The city is also seat of many significant companies, either branches of multinationals active in R&D (Sanofi-Aventis, Siemens, Sun Microsystems etc.) or large in terms of turnover (RWE, ČEZ, UNIPETROL, Telefónica Czech Republic, Tesco Stores, Metrostav, Skanska, Czech Airlines). Unfortunately, the city does not have a clear policy towards foreign investors and large companies.

Table 1: Selected R&D&I indicators

Indicator	Prague	Czech Republic	Prague's share
R&D expenditure (2011)	€ 943 million	€ 2,875 million	32.8%
Share of R&D expenditure on GDP (2011)	2.38%	1.84%	129 (CR=100)
R&D expenditure in business sector (2011)	€ 345 million	€ 1,735 million	19.9%
R&D expenditure in government sector (2011)	€ 373 million	€ 504 million	74.0%
Employees in R&D (FTE, 2011)	21,151	55,697	38.0%
Researchers (FTE, 2011)	12,523	30,682	40.8%
R&D workplaces (2011)	670	2,720	24.6%
University students (2012)	140,584	381,295	36.9%
Share of firms with innovation activities (CIS 2008-2010)	57.1%	51.7%	110 (CR=100)

Source: Czech Statistical Office

Concentration of public and private research organization reflects in their high share on Czech participation in research support programmes both national and European, including 7th Framework Programme. The participation in FP7 is mainly focused on ICT, People and Health programmes and attains 55%. Similarly high share of Prague participants can be identified in national support programmes provided by the Technology Agency of the Czech Republic or Ministry of Education, Youth and Sports (responsible for research).

As regards support from EU structural funds, Prague was left out from major support activities being a more developed region. This led to location of 3 large research infrastructure projects (worth almost €400 million) just outside administrative borders of Prague in the present programming period:

ELI – Extreme Light Infrastructure (optics, physics)

BIOCEV – Centre for Biotechnology and Biomedicine (chemistry, biology)

SUSEN – Sustainable Energy

Support available in Prague in R&D sphere (from Operational Programme Prague-Competitiveness, OPPC) was focused mainly on small scale R&D infrastructure and technology investments in the public R&D sector. The total amount of support from OPPC reached nearly €70 million.

International Comparison

Such comparison is important as there is no region in the Czech Republic of similar type, no city-region, no metropolitan region.

The Regional Innovation Scoreboard of the European Commission (2013) places Prague among “innovation leaders - medium”, being the only Czech region in this category (other fall within “follower” or “moderate” category). This puts Prague in one group with 14 regions such as Ile de France (FR), Utrecht (NL), Niedersachsen (DE) or East of England (UK).

Regional Competitiveness Index, also produced by the European Commission (2010), places Prague on 36th place out of 268 evaluated regions. Among similar city-regions Vienna is 19th and Berlin at 44th place.

Furthermore, nine EU regions were selected for purpose of international benchmarking. They are either city regions or regions with dominant role of one major city.

Table 2: International comparison of selected indicators

	Praha (CZ)	Hovedstaden (DK)	Oberbayern (DE)	Berlin (DE)	Közép-Magyarország (HU)	Utrecht (NL)	Wien (AT)	Mazowickie (PL)	Bratislavský kraj (SK)	Stockholm (SE)
R&D Expenditure as % of GDP (2009)										
- government	0.90	0.13	0.54	1.17	0.38	--	0.32	0.65	0.46	0.19
- universities	0.49	1.34	0.51	0.88	0.24	--	1.41	0.21	0.24	0.88
- businesses	0.79	3.81	3.60	1.42	0.91	0.41	2.17	0.33	0.19	2.83
Share of employed in R&D on economically active population (%) (2009)										
- total	2.90	--	2.73	1.58	1.41	1,23	2,35	0.93	2.32	2.15
Employment in high and medium high-tech manufacturing as % of total employment (2012)										
- total	3.1	4.8	11.5	4.7	5.3	1.7	3.2	3.2	6.4	2.4
Employment in knowledge intensive high-tech services as % of total employment (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 total employment (2012)										
- total	9.5	8.4	7.4	10.4	8.1	9.9	9.5	6.5	7.7	14.9

Source: Eurostat

Presented data shows that while manpower devoted to R&D is relatively high, it does not have sufficient funds at its disposal to match leading regions.

Prague Regional Innovation Strategy

Following the decision to update the BRIS strategy of 2004 instead of elaborating an entirely new strategy, update of SWOT was the first step.

SWOT analysis identified main strengths and weaknesses to deal with presented in table 3 below. Left aside are problems concerning legislation which, however, represent major

barriers at national level (rules for establishing business, tax rules, public procurement rules etc.).

Fragmentation of Prague innovation system is considered the main weakness. Others include unused R&D&I potential and low level of intervention of regional administration.

Table 3: Strengths and weaknesses form Prague SWOT

Strengths	Weaknesses
High concentration of innovation actors	Fragmented innovation system (missing dialogue within triple helix)
Specific structure of economy with high share of services	Insufficient capacities of intermediary innovation support structure
Above average qualification of human resources	Low-level of intervention of regional administration (no specialized capacities)
Attractiveness (strong Prague brand)	Increasing labour force costs compared to other Czech regions
Prague as trend-setter and opinion maker	Unused potential for inter-disciplinary co-operation
Influence of Prague administration on primary and secondary education	

In 2012, in collaboration with representatives of 27 different organizations during two workshops, 14 measures in 4 thematic areas were drafted, which are presented below. They focus on innovation (companies), research, human resources and activities of regional administration.

Thematic area 1: Innovation for entrepreneurship

Measure 1: Complex system of services for innovative entrepreneurship in Prague

Measure 2: Identification of opportunities for innovation in services sector

Measure 3: Support of social innovation

Measure 4: Specific financial instruments for innovation support

Measure 5: Quality infrastructure for innovation support

Thematic area 2: Research for innovation

Measure 1: Support of development of knowledge transfer

Measure 2: Popularization of R&D capacities and outputs

Measure 3: Support of excellence R&D and use of R&D for the needs of Prague

Thematic area 3: Human resources

Measure 1: Searching for talents

Measure 2: Preparation and development of talents

Measure 3: Mobility support: attracting talents from outside and support of stages abroad

Measure 4: Development of co-operation between research and application spheres

Measure 5: Development of human resources in services for innovation

Thematic area 4: Innovative region Prague

Measure 1: Strategic management of R&D&I

Measure 2: Promotion of Prague as a centre of R&D&I

Measure 3: Focused marketing of Prague as a seat for firms creating jobs for high-skilled labour force

In relation to human resources development, it should be emphasized that Prague (or its districts) is founder of public nursery, primary and secondary schools as well as of many institutions and facilities engaged in youth leisure time activities.

This draft measures will be confronted with draft specialization domains to find measures which will have the highest potential to make a difference in the innovation system.

Draft specialization domains were prepared based on the analysis of quantitative data (structure of economic base, structure of R&D base, FP7 participation, licences statistics, use of structural funds assistance etc.), which was discussed on a special workshop this year. There, participants made modifications to the initial version and the result is presented in the table 4 below. Four domains were identified for Prague which combine areas that are both present strengths and future potentials. This is considered important (to begin with present strengths), bearing in mind that future S3 process may place more emphasis on the latter (future potentials).

Table 4: Draft specialization domains

Priorities	Life sciences	New media and Prague as a shop window	Emerging technologies	Prague – centre of services with high added value
Topics	Diagnostics Pharmaceutical and clinical research Biomaterials Molecular biology	Digital media Mobile applications Internet services Visualization and design Production and distribution of media products Tourism	Aerospace technologies Smart energy	IT-based services Business consultancy Research consultancy Technology services Qualified human resources Creative services

The result reflects the high share of services sector in Prague, two domains are clearly services oriented and remaining two bear a significant relevance for services sector as well. Topics presented in table 4 serve mainly as description of the domains, rather than as exhaustive list of all relevant sub-branches. This is an initial draft to kick-off further stakeholder discussion on specialization domains.

Also, for further discussion on the specialization domains, horizontal topics were identified across some or all domains as shown in table 5 below. For all domains, quality ICT and

sufficient pool of human resources is seen as a prerequisite for increasing performance. Security is seen important in terms of IPR and know-how protection, safety of data and in contribution of the domains to safety-related issues (cyber-security, energy security). Sustainability means e.g. long-term care of development of qualified human resources, continuous promotion of domains internationally and care of attractive business environment.

Table 5: Horizontal topics

Priorities	Life sciences	New media and Prague as a shop window	Emerging technologies	Prague – centre of services with high added value
Horizontal topics	ICT			
	Human resource development			
	Safety and security			
	Sustainability			
	Materials	---	Materials	---
	R&D Popularization	---	---	Innovation infrastructure Connectivity, Internationalization

Implementation context

Important fact is that Prague as a regional authority does not have any explicit power (derived from legislation) over R&D sphere, which fall under the remit of the Ministry of Education, Youth and Sports or entrepreneurship development, which falls under the remit of the Ministry of Industry and Trade. However, within its self-governing powers, Prague can intervene in areas which are of interest to the city. Therefore, the innovation strategy has two distinct dimensions:

- 1) Development of innovation environment in Prague requiring participation of many different partners.
- 2) Role of Prague regional administration in this process.

As major share of Czech Republic’s R&D&I capacities are located in Prague, central government and its agencies already intervene in Prague and support institutions and companies located here. On the other hand, Prague administration has not yet implemented any major innovation support strategy aside from SF operational programmes support and this year’s innovation voucher scheme pilot project. Therefore, it is important that the new regional innovation strategy will set a reasonable and sensible role for Prague administration in the area of innovation support.

Questions for peer-review discussion

After consideration of many possible questions, some often asked at previous peer-review workshops, we decided to ask the following ones, which currently represent open challenges to deal with in the course of finishing our RIS.

Prague offers R&D&I and educational capacities in many different branches. Though we understand why specialization should be sought, we feel need to setup measures to stimulate inter-disciplinary co-operation which can produce new unexpected combinations of branches.

=> *Question 1: How to use potential for inter-disciplinary co-operation?*

Given the large share of services sector on Prague employment and GDP, emphasis needs to be placed on its support requiring specific measures and tools. As services sector is often represented by large number of small companies or even self-employed individuals, what measures and tools can affect significant share of them to produce measurable effect? Which branches of services should be targeted to produce significant economic effects of support?

=> *Question 2: What support measures are suitable for services sector?*

Regarding the situation in R&D&I sphere in the Czech Republic, regional public sector innovation demand (for new non-existent solutions) can represent a suitable form of active participation of regional administration to stimulate R&D&I activities and investment.

=> *Question 3: Can you provide examples of innovation demand of regional public sector?*

While there is a thriving SMEs sector in Prague, communication with large companies is being neglected. Yet, these represent significant share on private R&D expenditure, help position regional economy in international value chains and offer highly qualified job opportunities.

=> *Question 4: How to approach large companies?*

Written by:

Jakub Pechlát

Head of Economic Analysis and Prognosis Unit

CITY DEVELOPMENT AUTHORITY PRAGUE
Strategy and Development Office

Vyšehradská 57

128 00 Praha 2

T: +420 236 005 677

M: +420 601 551 931

E: pechlat@urm.praha.eu

W: www.urm.cz/en/main