

**Innovations and innovation  
policies in the Czech Republic:  
the case of Bohemian Regional  
Innovation Strategy**

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# European context for innovation

- The overall lagging of NMSs in innovation creation and implementation is well known.
- Comparison of innovation performance provides annually European Innovation Scoreboard (average number of patents registered by EPO of EU15 standardised per capita equals to 450, while in Czech Republic the corresponding figure is only 11, in Hungary 18).
- What makes situation even worse is the fact that the Czech R&D lags more behind the EU average in case of its outputs than in the case of R&D inputs (financial and personal resources).
- Therefore, the challenge is not only to increase significantly inputs but especially an efficient usage of all resources.
- The key contemporary challenges in the sphere of innovation and knowledge economy in Europe have been summarized by J. Bachtler into following way:

- „Five priority objectives were proposed for public action to encourage an effective, pan-European innovation system:
- (a) coherent innovation policies;
- (b) a regulatory framework conducive to innovation;
- (c) encouragement for the creation and growth of innovative enterprises;
- (d) improvement of key interfaces in the innovation system;
- (e) a society open to innovation“. (Bachtler, 2005, p.4.)
- Innovation gap of the EU states in comparison to the most developed countries of the world according to Bachtler “reflects weaknesses in areas such as links between research and industry, the availability of early-stage finance, education and the business environment“ (Bachtler, 2005, p.6).
- All these weaknesses are at least twice more relevant for the Czech Republic and for its regions.

# The national context for innovation in the Czech Republic

- The current unsatisfactory situation is a result of many factors.
- Fundamental among them was the separation of R&D in communist countries from the democratic world which lasted for 4 decades.
- Other important reasons can be traced at the very beginning of the transition where many state owned institutes of applied research were privatized and as private units they were not able to remain on the market.
- Their bankruptcy or total reorientation of their activities was result of a
  - - radically changed market conditions,
  - - intensive competition from abroad
  - - and lack of know-how for management of innovation processes under new conditions.

- Secondly, in the case that the former state company was taken-over by foreign firm, foreign owners usually provided their own advanced technology and there was no need to keep inefficient research branch of privatized firm.
- Third, a strict separation of basic research pursued in Institutes of the National Academy of Sciences.
- In addition, the Academy had only limited links to universities, which were predominately concentrated on education.
- Moreover, neither Academy of Science nor universities were expected to come up with the results that would be commercialized.

- Finally, until now there is no clear competence over innovation system and policy at the governmental level, the responsibility is scattered among more than 20 institutions. The approach of the Government has started to change only gradually, also due to European pressure connected to Lisboa strategy.
- Recently, several governmental materials dealing more or less explicitly with innovations were elaborated. Prominent among them is “the Strategy of Economic Growth” and especially „The National Innovation Policy“ (both were adopted by the Czech Government in July 2005).
- These documents, esp. Strategy of Economic Growth should be a key strategic document for the next programming period for SFs support (i.e. key input into „NDP“).
- Consequently, on the basis of preparation of several strategic documents there is growing agreement among experts and decision-makers on key weaknesses of Czech innovation system:

# Key weaknesses of the Czech innovation system

- insufficient links between public research institutes and businesses, poor opportunities for mobility between industry and academia.
- insufficient evaluation of results of public R&D institutions with clear implications for their financing
- overcomplicated and improper general legislative framework (including tax system) plus poor law enforcement
- missing financial instruments conducive to innovations (venture capital funds etc.).
- insufficient marketing of both options opened by the existing governmental and EU support programmes for innovative actors and of the results of innovative processes (innovations, patents).
- unclear competence over innovation policy among governmental bodies
- low share of university educated people (only 60% of EU average), low share of R&D employees (about half of EU average), low share of GDP allocated to R&D both by public and private sector.

# Regional innovation strategies

- The RIS are often looked upon with a kind of suspicion not only due to all above mentioned factors stemming from the national context but also due to the fact that:
  - - are still oppressed by many other duties which are often of a very basic nature (shift of competence, finance...)
  - - self-governing regions are not having a clear competence in this sphere (i.e. innovation, R&D)
  - - the innovation base in a majority of the regions is quite weak,
  - - the culture of efficient usage of strategic/programming documents for steering the development is still in its infancy and strategic documents are still by many regional actors often considered as a mere exercise without any practical relevance
- Finally, the self-governing regions had to form their own networks and establish themselves among other relevant regional actors (i.e. mutual “learning of roles”).
- Nevertheless, according to the recently performed overview (June - July 2005) regional innovation strategies were elaborated in more than a half of Czech regions but in majority of them they are in their embryonic forms only.

# Bohemian Regional Innovation Strategy (BRIS - developed for the City of Prague)

- **Profile of the city**
- 1,2 mil. inhabitants Prague, 150% European per cap avg. of GDP, unemployment rate 3-4%.
- The dominant sector of the city is the service sector, which accounts for 80% of GDP and 75% of employment in Prague.
- The region is also highly attractive for foreign investors (DHL, Accenture, Siemens).
- Prague has a highly skilled workforce. The share of the total population holding a university degree is almost 20% (twice the national average).
- In Prague, there are about 80,000 university students, of whom almost 10,000 are studying for a PhD degree and about 5 500 members of teaching staff.

- In Prague, there are also 40 institutes of the Academy of Sciences of the Czech Republic and 50 other research institutes.
- Consequently, about a half of the scientific and research potential of the Czech Republic is concentrated in Prague.
- According to the European Cities Monitor, a survey of business attractiveness in Europe's top 30 cities since the 1990s, the city of Prague has risen from 20th place to 13th-14th place.
- Using the 4 criteria outlined in P. Larédo classification (institutional, economic, reg. knowledge base and connectivity) it seems from the above mentioned facts that Prague's main weakness is the lack of connectivity among relevant actors.
- Addressing this weakness was one of two basic principles on which elaboration of BRIS has been based (see below).

# Bohemian RIS

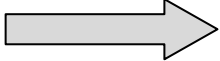
- The BRIS has been elaborated on the initiative of Technology Centre of Czech Academy of Science which wanted to use the opportunity offered by the EU funding available for elaboration of regional innovation strategies.
- The project tried to respect two basic principles:
  - - a focus on the needs of the region and respect for specific regional features,
  - - and building the consensus among important regional players in the field of innovation.
- In order to identify the requirements and specific features of the Prague region, several analytical studies were conducted. (field study at 490 enterprises and 60 research organizations in the field of innovation generation).
- The following strengths and opportunities were identified within the BRIS:

# Strengths:

- Prague as the centre of the Czech Republic – a high concentration of key entities involved in the innovation infrastructure (research and development, training sector, central institutions, consultancy and financial sector)
- A rich and diverse structure of companies
- A high standard and rich structure of intellectual capital
- Basis of the innovation support infrastructure
- Strategic interest in innovations at regional level (!?)
- Existence of venture capital funds
- Growing interest in SMEs from the banking sector
- Existence of basic financial schemes for supporting SMEs
- Proclaimed interest from the academic sphere in cooperating with the application sphere
- Attractiveness of the region for investors
- Strengthening of the hi-tech sector and a strong mid-tech sector.

# Opportunities

- Exploitation of the synergy generated by the high concentration of scientific, educational, industrial, entrepreneurial, and financial potential in the region
- Regional strategic plan promoting innovations and qualified workforce
- Support to the development of innovations in the framework of SPDs for the Objectives 2 and 3 and European support to innovations
- Increased political backing for innovations (from national level)
- Adoption of a national innovation policy and resulting changes in R&D and in public support of SMEs
- Standardization of the business, legislative and investment environment in the context of accession to the EU
- Use of qualitatively higher forms of FDI's tied to the hi-tech sector and cooperation with the research sector
- Promotion of Prague as a region with a wealth of intellectual capital.

- SWOT  7 strategic areas and 14 priority actions
- **The 14 proposed priority measures within BRIS are:**
- A.1 Support to the formation and development of sectoral clusters
- A.2 Support to progressive and hi-tech branches in the region
- B.1 Strengthening TT, commercialization 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.1 Training system for a dynamic labour market
- C.2 Lifelong learning for a knowledge-based economy
- D.1 Development of a regional innovation infrastructure
- D.2 Qualified consulting and services for innovation
- E.1 Public financial support to innovation, entrepreneurship and building the innovation infrastructure
- ***E.2 Stimulation of the use of commercial resources for innovation***
- F.1 Innovation culture and framework conditions for innovations
- F.2 Coordination of activities and strategic management of regional development in the field of innovation
- G.1 Cooperation with EU regions and transfer of time-tested practices
- G.2 Prague – national initiation and innovation centre

# Personal opinion about the key priorities

## • **I. Themes to be addressed by the national level**

- general legislative environment for business
- enforcing the links between basic and applied research (e.g. financial incentives) **(SFs)**
- introduction of sound evaluation criteria for public research institutes with implications for their financing **(SFs)**
- marketing of innovations, patents but also of National Innovation Policy itself **(SFs)**
- strengthening the financial mechanisms for innovations (“seed” capital, venture capital etc.) **(SFs)**
- elimination / moderation of current de-motivating working conditions for R&D employees, esp. the young ones.

## II. Themes for regional level

- Establishment of links of innovating multinationals located in Prague with the endogenous firms as 60% of R&D private expenditures are provided by foreign firms in the Czech Republic, (this situation has some resemblance to the situation of Wales which economy was also lifted by arrival of global firms - Cooke, 2004).
- Strengthening the links between public research institutions, private firms and other actors relevant for innovations (bottom up approach) **(SFs)**
- Shift of focus of public support from the institutions to projects aiming at delivering of desirable changes (Public support is often oriented to institutions with „correct“ name like „Science and Technology Park“ or “SMEs incubator” instead of on support of desirable activities leading to measurable changes). **(SFs)**
- Marketing of both BRIS and innovations created in Prague **(SFs)**.
- When looking at the document “Bohemian Regional Innovation Strategy” as a whole, several key weaknesses can be identified:

# Key weaknesses of BRIS

- Not sufficiently developed analytical part, there is no serious attempt to identify the sectors with the largest innovation potential;
- the ordering of items within the SWOT analysis should follow their relevance.
- Analytical part is rather of traditional nature without focusing on softer issues related to connectivity dimension (interactions among the subjects including their types and ways of measurements, identification of potential leaders, why some existing bodies are on the contrary to other regions not functioning, what are the routines that prevent standard support mechanism to function effectively etc.).
- Missing clear priorities, the strategy is “to improve everything”.
- Completely missing link to budget of City of Prague
- Excessive focus on SMEs despite the fact that most relevant innovative actors are (research) branches of large foreign firms.
- Unjustified focus on building of a new innovation infrastructure (to establish Prague RDA, centres of excellence, science and technology park, incubators for new enterprises) instead of “forcing” the existing institutions by available and perhaps newly designed instruments to fulfil their role more effectively.

# Key weaknesses of BRIS

- Improper selection of priority areas for support (for example, among the priority projects is support to Prague's "educational gastronomic cluster" which potential role in innovations is rather dubious)
- Missing clear responsibility (and time-schedule) for implementation of actions and for monitoring
- Insufficient focus on raising awareness about BRIS both among relevant actors and among the public
- Moreover, when using typology of Heidenreich (2004) the BRIS is of institutional type and is suffering from typical feature of these innovation systems, i.e. a systematic discrepancy between research and innovation.
- In such regions "Investment in education and training, research and development, technology transfer and marketing will not automatically "produce" innovations" (Heidenreich, 2004, p. 366).
- To sum up, perhaps the largest merit of elaboration of BRIS is initiation of a mutual communication among relevant partners and putting the issue of innovations on the agenda.

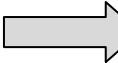
# Policy implications:

- Creation, transfer and implementation of innovations are rather complex phenomena.
- Therefore, it is unlikely that a simple approach to solution of problems could be formulated.
- However, the analysis of existing weaknesses of innovation systems and policies in the Czech Republic suggests, that there are several key barriers:
- These are:
  - - deficiencies of general business environment,
  - - lack of cooperation among relevant partners.
  - - lack of awareness about the real strengths of the regions
  - - and underestimating of significance of human resources
- Unfortunately, these topics can not be easily addressed by a specific project.
- Therefore, limited innovation capabilities of the regions in question are a result of deep rooted failures in many interrelated spheres. Consequently, sudden and radical improvement of existing situation is unlikely, which does not mean that it is not worth of attempting.

- Despite all the imperfections, the BRIS can be considered as an attempt to launch the learning process how to achieve urgently needed changes/improvements.
- However, the fundamental question is whether this strategy will be implemented or will stay idle as many other strategic documents in the Czech Republic.
- Therefore, in this context, as a simple indicator of progress of implementation of BRIS might serve an existence of at least a very basic monitoring and evaluation of implementation of BRIS as this is the fundamental preconditions for further progress.
- Functional monitoring and evaluation would provide a platform for meeting the partners, their mutual discussion and would be a signal that there is still at least some commitment to the outlined innovation strategy and a social energy to deal with new challenges.

# Main challenges for the next programming period

- Context in NMSs (Czech Republic) – the needs are significantly different from EU 15 (huge internal debt in infrastructure, environment etc., but also different institutional context -level of trust, ability to cooperate, respect to legislation etc.).
- Of principal importance for the Czech Republic is a need to shift **gradually** the priorities within the cohesion policy.
- Currently, the top priority of the state is the removal of basic deficiencies in the sphere of transport and environmental infrastructure (upgrading of railway network, construction of motorways, elimination of old environmental loads, etc.).
- All these spheres require huge amount of resources and remedy of these deficits would take also considerable time.
- A specific problem typical for the Czech Republic but also for several other NMS is the dilapidation of panel housing estates and their gradual devastation with serious economic and social consequences.

- Also in case of regional and local development strategies there is a need to move from currently dominating stress on technical infrastructure towards the business support (which is just now starting but is mostly limited to building of industrial zones) and especially towards the development of human resources (retraining, life-long learning etc.).
- On the other hand, radical shift of priorities in case of both national and regional level in favour of softer measures would not be justified as there is neither proper supply nor demand. (Danger of discreditation).
- In addition, many activities, esp. in the sphere of innovations are of a pilot nature in the Czech context  high risk x over-bureaucratic procedures of SFs.
- Therefore, there is significant danger for absorption capacity and esp. danger of limited real impact.

- There are several major problems related directly to the supporting programmes in the Czech Republic.
- These are:
- excessive fragmentation of public policies and programmes,
- insufficient focus and weak strategic contents of programmes,
- and finally institutional shortcomings and inadequacies within the process of programming.
- These difficulties concern practically to all programmes irrespective of their purposes, regardless their Czech or EU origin.

- Fundamental weakness which significantly limits absorption capacity is the fact that in the Czech Republic there are no sufficiently strong development organizations that would be capable to design, prepare and implement large integrated projects that would achieve measurable changes/improvements.
- Consequently, the most important issue determining the absorption capacity is the readiness of the final beneficiaries and of end users to prepare relevant projects.
- Since the SFs programmes brought in several new types of interventions there was very limited awareness about the demand for these interventions as well as about possible outcomes of such interventions (⇒ sharp differences in demand for different measures)

# Current phase of preparation for next period (2007-2013)

- Currently, discussion about number, focus and responsibility over OPs for the new programming period (within the elaboration of NDP).
- Approach to tackling the innovations is one of key problems: proposals range from 1 OP to 3 OPs.
- The variant of 3 OPs can be considered as the worst scenario: 1 OP Industry (MTI), 2 OP Innovation (MTI), 3. R&D (Ministry of Education)
- Seemingly formal/technical issue but serious implications in practice:
  - 1) Fragmentation! 2) In conflict with need to close the gap between basic research (Ministry of Education) and applied research (MTI).
- Therefore, preferably, there should be a single OP covering Innovation, R&D and industry - opportunity to start real discussion and cooperation about relevant institutions.
- (In any case problem with Prague – coherence between OPs and „SPDs“).

# Conclusions

- Relatively modern conception of National Innovation Policy (key input into OP Innovations) versus real implementation.
- Many problems of systemic nature.
- One could have easily the institutions with proper name but they would not function as envisaged.
- Perhaps the main relevant recent change is opening the debate over innovations (in addition in connection to usage of SFs).
- But still other more pressing (visible) issues, therefore, real progress likely to be rather slow..