Regional Innovation Strategies in the Czech Republic

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Abstract

Lately, the concept of innovation has become a development mantra in the fierce global competition. Competition is not limited to firms; it is also relevant for territories. An observed trend which is not surprising is the number of support tools that have been developed to reinforce the position of territories and their actors in the innovation processes. Clusters and regional innovation systems are the most important of them. However, both are rather underdeveloped in the CEE countries, including the Czech Republic. Faced with this situation, a number of Czech regional authorities (Regions) took measures to stimulate the process of creating cluster and regional innovation system (RISs). Hence, strategic planning in the form of regional innovation strategies has become an overarching concept. So far, eleven Czech Regions have elaborated on RISs and analysis of these documents was the main focus of this article. The main finding of this paper is that, there is an increasing quality of RISs in the Czech Republic. Moreover, some common and some differentiated features of RISs were also identified. Consequently, the paper emphasizes numerous problems of RISs that is perceived as a key barrier towards real regional innovation system.

Key words: Regional innovation strategy, regional innovation system, cluster, innovation, Czech Republic

1 INTRODUCTION

Innovations as an output of learning and knowledge creation processes are regarded as a fundamental element of firms' competitiveness strategies in the current era of globalisation (e.g. Asheim & Coenen, 2005; Dohse, 2007; Tödtling & Trippl, 2005; Waxell & Malmberg, 2007; Pavelková & Jirčíková, 2008; Skokan, 2007; Žižka, 2008). To survive on the market, firms are forced to innovate escaping the devastative competition from cheap countries (Porter, 1990). There are several traditional factors which influence learning and knowledge creation, including investments in basic R&D inputs and R&D institutional framework (Crescenzi, Rodríguez-Pose & Storper, 2007). However, spatial relations attract more and more attention in innovation processes nowadays. In this regard, some authors claim that diffusion of innovations is strongly localized, regionally bounded, process (Girma & Wakelin, 2007; Tödtling & Trippl, 2005), that characteristics of territory influence competitiveness of its economic subjects (Porter, 1990) and that a number of high-tech industries show a high degree of spatial concentration (Gertler & Vinodrai, 2009).

There is a consensus now that innovations arise through interactions between actors with complementary knowledge (see e.g. Bathelt, Malmberg & Maskell, 2004; Maskell, 2001; Waxell & Malmberg, 2007). Spatial closeness facilitates such interactions, especially exchange of non-codified, tacit, knowledge. In addition, face to face communication is upheld as a basis of trust-building, stimulating actors' interactions (Storper & Venables, 2004). In this way, terri-

tory gains its place in innovation processes. Based on both, formal and informal interactions, a store of specific knowledge is created from which local actors may draw necessary information if they share local communication schemes (local buzz). Subsequently, a suitable combination of knowledge enables innovations (Bathelt et al., 2004). Nevertheless, note that external inputs are crucial as well to prevent lock-in of innovation processes (see e.g. Asheim & Coenen, 2005; Sturgeon, van Biesebroeck & Gereffi, 2008; Tödtling & Trippl, 2005).

The abovementioned ideas resulted in several tools which were developed to support innovation processes. These tools include, among others, clusters and innovation systems. The fundamental goal of both is to stimulate innovations through close cooperation between actors in the territory. Note that clusters accentuate cooperation of actors in one industry while innovation systems in more industries, thus representing a hierarchically higher structure than clusters. Not surprisingly, clusters and regional innovation systems have attracted attention in development agendas of territories at different geographical levels. The regional level in the Czech Republic is no exception in this regard. On the contrary, Czech regional administrative units try to actively grasp the opportunities and stimulate innovation processes through close cooperation between actors in the territory. In this way, strategic planning, through regional innovation strategies (RISs hereafter), became an overarching framework to coordinate these activities. And just in this direction this article is oriented.

The main goal of this article is to asses the current state-of-the-art of RISs in the Czech Republic. Several attributes were selected in this regard, including the year of elaboration, actors involved in the elaboration process and others. A special attention is given to the relationship between clusters and RISs on one side and between RISs and regional innovation systems on the other, in accord with the theoretical assumption that clusters form the cornerstones of regional innovation systems. Methodologically, content analysis of the recent RISs was applied. The article is structured as follows. The second chapter summarizes the theoretical rationale of clusters and regional innovation systems. The third chapter analyzes RISs in the Czech Republic. The fourth chapter concludes.

2 TOWARDS REGIONAL INNOVATION SYSTEMS

There are various approaches how to define the term cluster. However, because the goal of this article is not to discuss this issue in depth we mention only four elements of the definition given in Waxell and Malmberg (2007). These elements include spatial agglomeration of economic activities in one industry, existence of functional links between these activities, the sense of belonging to the cluster and a reinforced ability of innovation. An emphasis on different elements creates various approaches how to understand the term and in this way cluster typologies are formulated (see e.g. Gordon & McCann, 2000).

From the institutional point of view, clusters consist of firms from same or related industries, and of research, financial and support organizations, creating horizontal and vertical dimensions of clusters (Waxell & Malmberg, 2007). The horizontal dimension perceives firms in clusters as competitors. Subsequently, each firm develops its own routines how to solve its problems. However, spatial closeness and interactions between firms in clusters enable to spur mutual learning processes resulting into innovations (see e.g. Maskell, 2001; Bathelt et

al., 2004). The vertical dimension is based on traditional business relations along production chains with two advantages for firms in clusters. First, clusters form a stable market attractive for specialized suppliers and customers. Second, clusters facilitate division of labour and specialization of involved firms. Altogether, innovation-friendly environment arises (see Maskell, 2001).

Regional innovation systems represent a hierarchically higher structure than clusters. Compared with clusters, regional innovation systems are characterized by more important role given to support organizations and by a higher number of involved industries (Isaksen, 2001; Tödtling & Trippl, 2005). Thus, clusters form a cornerstone of regional innovation systems (Tödtling & Trippl, 2005). Asheim and Coenen (2005) distinguish three fundamental parts of regional innovation systems – regional production systems based on existing knowledge, regional support systems of knowledge transfer and regional culture as an informal institutional context of the system. Cooke (2001) regards also the ability of regions to secure financial resources and the existence of links outside the region as critical factors of regional innovation systems.

Note that Cooke (2001) speaks about underdeveloped regional innovation systems in the EU countries, strongly dependant on public sector. This drawback is much more obvious in the CEE countries. In this regard, Ketels and Sölvell (2006) point at a low level of regional specialization, Szanyi, Iwasaki, Csizmadia, Illéssy and Makó (2010) at disaccord between spatial concentration of industries and cluster initiatives, and Radosevic (2002) at an early phase of regional innovation systems development. In the light of these problems, a number of regional authorities in the CEE countries initiated measures oriented towards an improvement of this situation. Traditionally, elaboration of RISs became the first step in this direction. Naturally, RISs cannot be perceived as a real regional innovation system but it is an indicator of understanding of this concept by the authority. Thus, research on RISs reveals some interesting facts on regional innovation systems as well. Let us turn our attention to the situation in the Czech Republic now.

3 REGIONAL INNOVATION STRATEGIES - CZECH REPUBLIC

Regions (*Kraje*) represent the main administrative unit at the regional level in the Czech Republic. There are fourteen Regions in the Czech Republic now, including the capital city of Prague. Eleven Regions already elaborated their strategic documents related to innovations, two Regions (Olomoucky and Vysocina) launched works on their strategic documents and only one Region (Central Bohemia) has not made any progress in this way so far. This chapter analyses the most recent strategic documents of the eleven Regions, considering selected attributes. The most important findings are discussed. Note that the term RIS is used hereafter denoting the strategic documents of particular Regions.

The year of elaboration

Two groups of Regions may be distinguished according to the year of elaboration of their RISs. The first group includes four Regions, RISs of which were elaborated between the years 2004 and 2006. The second group consists of the remaining seven Regions with RISs elaborated between the years 2008 and 2010 (see table 1). It is rather intuitive that the first generation of

RISs is outdated now with respect to the content of their analyses and proposals. Moreover, the methodological background of these documents is not in accord with the most recent trends.

Tab. 1 – RISs in Czech Regions, the year of elaboration. Source: own elaboration based on RISs of particular Regions

Year of elaboration	Regions
2004-2006	Pardubicky, Plzensky, Prague, Ustecky
2008-2010	Karlovarsky, Kralovehradecky, Liberecky, Moravia-Silesia, South Bohemia, South Moravia, Zlinsky

Actors involved in the elaboration process

A rather broad range of actors, in accord with the theoretical rationale of regional innovation systems, was incorporated in the elaboration process of practically all the RISs analyzed. Thus, actors from public (besides regional authorities, also Regional Development Agencies and CzechInvest), private (especially regional Chambers of Commerce) and academic spheres participated in the elaboration process (see table 2). It is noteworthy that several RISs were created in partnerships with foreign actors experienced in this way and that the year of elaboration is not a discrimination factor in this regard.

Tab. 2 – RISs in Czech Regions, selected types of actors participating in the elaboration process and explicitly mentioned in the RISs. Source: own elaboration based on RISs of particular Regions

Type of actor	Regions
Regional authorities	All Regions
Local authorities	Kralovehradecky, Prague, South Moravia
Regional Development Agency	Karlovarsky, Liberecky, Moravia-Silesia, Pardubicky, Plzensky, South Bohemia, South Moravia, Zlinsky
CzechInvest	Karlovarsky, Kralovehradecky, Liberecky
Chamber of Commerce	Karlovarsky, Kralovehradecky, Liberecky, Moravia-Silesia, South Bohemia, South Moravia, Ustecky, Zlinsky
Universities	Kralovehradecky, Liberecky, Moravia-Silesia, Pardubicky, South Bohemia, South Moravia, Ustecky, Zlinsky
Academy of Science	Plzensky, Prague
Foreign partners	Plzensky, Prague, Ustecky, Zlinsky

Links to other strategic documents

The RISs analyzed are not the only strategic documents related to the theme of innovations. There are also various European, national and other regional documents related to the theme. Thus, the third attribute was focused on the question how the links to these strategic docu-

ments are considered in particular RISs. Our findings point at the fact that in most cases the links of RISs to relevant European, national and regional strategic documents were sufficiently described and the position of RISs in the labyrinth of strategic documents at the European, national and regional level clearly determined. Note that the links to other strategic documents were omitted in one RIS (Moravia-Silesia) at all and that only regional level was considered in two RISs (Karlovarsky, South Bohemia).

Methods applied in analytical parts of RISs

Various methods were applied in analytical parts of the RISs analyzed. Generally, all RISs were based on the elaboration of socioeconomic analysis, using hard statistical data focused especially on economy of the Regions including enterprise environment, and financial and institutional R&D support tools. In most cases, a questionnaire survey in firms was realized to reveal their needs related to innovations. The findings from the analytical parts of RISs were traditionally summarized in the form of SWOT analysis; only two RISs (Karlovarsky, Moravia-Silesia) applied less common tree-of-problems in this regard.

Terminology and content of strategic parts of RISs

Strategic parts of the RISs analyzed are similar in their hierarchical arrangement. Nevertheless, there are various terms used to label the levels of the hierarchy in particular RISs; such as vision, mission, strategic areas, measures, priorities, strategies, global goals, specific goals, strategic goals, activities, pilot projects and others (compare with Hájek, Grebeníček & Hubáčková, 2008). Moreover, the number of priorities at the highest level of the hierarchy in particular RISs is different and ranges from 2 to 7 items. However, four are the most common number of priorities at the highest hierarchical level. We regard such a number as the most suitable trade-off between integrity and clarity. The content of priorities at the highest level of hierarchy is in particular RISs more or less similar. Five themes are common in this regard, and they include development of human resources, development of support infrastructure, development of support services, strengthening of cooperation and stimulation of R&D institutions. Naturally all the themes are related to innovations (see table 3).

Tab. 3 – RISs in Czech Regions, priorities at the highest hierarchical levels. Source: own elaboration based on RISs of particular Regions

Priority at the highest level	Regions
Human resources	Karlovarsky, Liberecky, Moravia-Silesia, Pardubicky, Plzensky, Prague, South Moravia, Zlinsky
Support infrastructure	Pardubicky, Plzensky, Prague, South Bohemia, Ustecky, Zlinsky
Support services (enterprise environment)	Karlovarsky, Kralovehradecky, Liberecky, Prague, South Bohemia, South Moravia
Cooperation of actors	Karlovarsky, Kralovehradecky, Liberecky, Moravia-Silesia, Prague, South Moravia, Ustecky, Zlinsky
Stimulation of R&D institutions, transfer of technologies	Kralovehradecky, Liberecky, Moravia-Silesia, Plzensky, Prague, South Bohemia, South Moravia, Zlinsky

Financing	Liberecky, Plzensky, Prague, Ustecky
Progressive industries	Kralovehradecky, Plzensky
Regional development, image	Plzensky, Prague

Implementation process of RISs

The implementation phase represents a cornerstone for a final success of particular RISs. Thus, our analysis focused on the assessment of the implementation process specification of the RISs analyzed. Our findings show that the implementation process specification was a part of all the RISs analyzed. However, the quality of these specifications was different. In some cases, only rough outlines of the implementation process were sketched out with a brief description of financing or monitoring. These are the problems especially of older RISs (Plzensky, Prague). The second generation of RISs in the Czech Republic considers these aspects in more details.

Clusters and RISs

The final attribute considered in our analysis deals with the relationship between clusters and RISs. In the theory, clusters are regarded as a cornerstone of regional innovation systems. Thus, we anticipate that clusters should be firmly positioned also in the RISs analyzed. Our findings point at a bit ambivalent conclusion in this respect. On one side clusters are mentioned in some form in both, analytical and strategic parts of RISs. However, some problems may be identified as well, especially:

- The measures related to clusters are connected with a vague implementation process. Thus, mapping and formal establishment of clusters (cluster initiatives) are suggested but further cluster development is less obvious.
- Several RISs mention distrust and lack of interest of firms to participate in innovation support tools such as clusters (e.g. Pardubicky, Karlovarsky, South Moravia; compare with Hájek et al. 2011 for the Zlinsky Region). One RIS (Moravia-Silesia) gives the thread to cluster development related to grant-dependence. Thus, clusters try to grasp public grants with no efforts for further development.

Altogether, the relationship to clusters creates two groups of RISs (see table 4). The first group includes the RISs with a strong position and integrity of clusters, in accord with the theoretical understanding of regional innovation systems. Thus, these RISs may be denoted as examples of good practice. The position of clusters in the second group of RISs is less obvious.

Tab. 4 – RISs in Czech Regions, position of clusters in RISs. Source: own elaboration based on RISs of particular Regions

Position of clusters	Regions
Examples of good practice	Karlovarsky, Kralovehradecky, Moravia-Silesia, Zlinsky
Other RISs	Liberecky, Pardubicky, Plzensky, Prague, South Bohemia, South Moravia, Ustecky

4 CONCLUSION

The concept of innovation has become a development mantra in fierce global competition of these days. To innovate or to die may be regarded as an oversimplified slogan in this direction. This slogan has also its spatial dimension. Competition is not limited to firms it is relevant also for territories. Not surprisingly, a number of support tools were developed to reinforce the position of territories and their actors in innovation processes. Clusters and regional innovation systems belong to the most important of them. However, both are rather underdeveloped in the CEE countries, including Czech Republic.

Facing this situation, a number of Czech regional authorities (Regions) took measures to stimulate process of cluster and regional innovation system creation. Strategic planning in the form of RISs has become an overarching concept in this way. Thus, eleven Regions have elaborated RISs so far and they became a subject of our analysis. The most important findings may be summarized as follows:

- There are both, common and different features of the RISs analyzed. Thus, terminology and content of strategic part are different in particular RISs while emphasis on partnership is the same. Nevertheless, a set of typical priorities may be found in strategic parts of the RISs analyzed and just this set may be used as a starting point for elaboration of new or updating of existing RISs.

- There are differences in the quality of the RISs analyzed. Especially the older RISs may be understood as outdated from both, content and methodological viewpoints. However, this finding points at the increasing quality of relatively new RISs in the direction of regional innovation systems. The more recent RISs accentuate the relevant theoretical aspects of this concept, such as the position of clusters or emphasis given on partnerships and external links.

- Although the more recent RISs are in accord with the theoretical rationale of regional innovation systems, only their successful implementation process may create a real innovation system with all fruitful benefits. Nevertheless, several problems may be identified in this regard. First, our analysis point at rather unclear interest of firms to participate in the tools such as clusters or regional innovation systems. But just firms are the most relevant actors of these tools. Second, the implementation schemes are either vague or too ambitious, especially with respect to financial means. Subsequently, a number of measures are not realized (see Hájek, Novosák & Hovorková, 2011 for the Zlinsky Region). Third, question remains whether endogenous potential of regions is sufficient to create a real innovation system (e.g. lack of progressive industries in the Zlinsky region).

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