

Analysing regional innovation potential as the basis for forming the regional innovation strategy– the case of Banska Bystrica region

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Abstract: The regional innovation strategy is recognised as a powerful driver of economic development at regional level. Over the years the methodology of developing the regional innovation strategy has been broken down into three phases: 1) building up consensus, 2) analysing of the innovation potential in a region, and 3) formulating the regional innovation strategy. The core of our article is to present the content of the second phase of forming the regional innovation strategy aimed at a detailed analysis and evaluation of the regional innovation potential in Banska Bystrica Region. The stress will be given to a detailed analysis of economic potential and sector trends, to analysis of entrepreneurs needs, to analysis of technological offer and support to entrepreneurs and to analysis of the research and development state in a region of Banska Bystrica. Results of the analysis are of high importance and are viewed as the basic preconditions for definition of priorities and formulating the regional innovation strategy.

Key words: regional innovation strategy, the process of forming regional innovation strategy, analysis of regional innovation potential, SWOT analysis.

1 Introduction

The regional innovation strategy approach, which today is widely recognised as a powerful driver of economic development at regional level, began as an ambitious, unusual experiment. Its emphasis on systematic and strategic thinking was groundbreaking for its time. The development of a regional innovation strategy encourages regions to reach a consensus on medium- and long-term objectives and to design policy actions in order to meet them.

This process relies on a broad-based bottom-up approach combined with top-down input, incorporating all regional stakeholders. It opens the minds of many policy-

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makers to the actual needs of businesses and to their expectations and capacities with regard to innovation. Business requirements feed into a wider assessment of a region's needs and assets, often in the form of a formal SWOT analysis detailing the innovative capacity of the region in the wider, international context. The resulting data powers a dialogue organised around intelligence.

This open, free-flowing dialogue enables the stakeholders to develop a shared vision, the driving force behind the successful development and implementation of all policy actions. This integrated approach involves strengthening the bond between the public and the private sector to boost the region's innovation system and thereby increase productivity and competitiveness. But an innovation strategy is more than dialogue and words; it is a call to action. The potential benefits to all stakeholders and to the region as a whole are usually apparent early on in the process, a fact which helps to secure the active, long-term support of the various contributors.

While there is no unified methodology outlining how a regional innovation strategy should be taken forward, there is an underlying common philosophy. This is illuminated in the methodological guides published in the Innovation regional strategies website.

The aim of the article is to present the content of the second phase – Analysis – of forming the regional innovation strategy aimed at a detailed analysis and evaluation of the regional innovation potential in Banská Bystrica Region. The stress will be given to a detailed analysis of economic potential and sector trends, to analysis of entrepreneurs' needs, to analysis of technological offer and support to entrepreneurs and to analysis of the research and development state in a region of Banská Bystrica. Results of the analysis are of high importance and are viewed as the basic preconditions for definition of priorities and formulating the regional innovation strategy.

2 The Process of forming the regional innovation strategy in Banská Bystrica region

The Regional Innovation Strategy of the Banská Bystrica Region has been worked out in the sense of the European Union philosophy, which on the basis of the member states' experience, even prior to its enlargement in the year 2004, concentrates first of all on the development of small and medium-sized innovative enterprises but does not forget the task of big companies either.

The Regional Innovation Strategy has not come into existence as an isolated document but it is in compliance with basic strategic documents both at the

regional and national level and European level as well because the innovations become the center of their attention. When proposing the Regional Innovation Strategy the multinational documents formed the basic initial documents which were adopted by the European Union in the concept of the EU structural fund strategic planning, and the national documents influencing the functionality of the system supporting research, development and innovations in the framework of the state. It is in compliance with the „Slovak Republic Competitiveness till 2010 Programme“ (the so called Lisbon Strategy for Slovakia) and with the Innovation Strategy of the Slovak Republic. Following The National Strategic Referential Framework of the Slovak Republic for the years 2007-2013 the Regional Innovation Strategy of the Banska Bystrica Region is in accordance with the operational programme „Competitiveness and the Economic Growth“, with the operational programme „Research and Development“ and with the operational programme „Education“. At the same time this document is a detailed elaboration of Priority 2.1. The development of the knowledge-based economy and innovations, and of the programme of social, economic and cultural development of the Banska Bystrica Self-governing Region.

The process of forming the regional innovation strategy could be in general divided into three phases:

Phase 1: Consensus building up – establishment of managing and executive units of the project, information campaign, achieving the consensus between those involved in the regional and innovation development, establishing the coordinated cooperation with the project partners, specifying the project goals and preparation of the detailed working plan.

Phase 2: Analysis – a detailed analysis of the regional innovation system; an analysis of the enterprises innovation needs, an analysis of services and institutions for supporting and financing the innovations, an analysis of a technological offer, identification of shortcomings and barriers, SWOT analysis.

Phase 3: Definition of priorities and action plans, formulating regional innovation strategy – draft of strategic fields of the Regional Innovation Strategy, of priorities and measures, formulation of the Action plan and set of pilot activities, draft of principles for the Regional Innovation Strategy implementation, working out the monitoring and evaluation system.

The core of our article is to present the content of the second phase „Analysis“ aimed at a detailed analysis and evaluation of the regional innovation potential in Banska Bystrica Region.

3 Analysis of innovation potential of Banska Bystrica Region

With the aim to identify the Banska Bystrica region's needs and specific features, the following surveys during the year 2007 have been conducted:

- analysis of economic potential and sector trends,
- analysis of entrepreneurs' needs,
- analysis of technological offer and support to entrepreneurs:
 - research and development organizations, universities,
 - support and advisory services for entrepreneurs,
 - analysis of rights concerning the objects of the industrial property,
- analysis of the research and development state.

The analyses mutually confront the sides of supply and demand in the field of innovations in the Banska Bystrica Region. They have been completed with terrain survey at enterprises and research and development organizations with the aim of identifying needs, barriers and recommendations in the field of creation and utilization of the innovations.

a) Analysis of economic potential and sector trends

The main aim of the analysis was to qualify basic economic characteristics of the Banska Bystrica region, to analyze the sector structure of the economy, efficiency of individual branches and their importance for the region economy development.

The Banska Bystrica Region is the largest of all the regions in Slovakia. It is situated in southern part of the central Slovakia. The dominating industry branch in the region is metallurgy (from the viewpoint of revenues and employment) which represents over 60 % of the total industry export of the region. Further important sectors are pulp and paper industry, pharmaceutical industry, woodprocessing industry, engineering industry and manufacture of building materials. The northern part of the region features rather high degree of industrialization. The southern part of the region is a basis of the wood-processing industry and other branches complementary to the agriculture. Forest industry, logging and wood processing are also of a great importance.

The economy structure of the Banska Bystrica Region has been characterized in recent years by gradual strengthening of the service industry and ongoing decline in agriculture. In the branches of industry and building a rather distinct recovery could have been seen in last two years. There are 15 enterprises from our region put on the Hi-tech sector. Prevailing number of enterprises in the region, however, work in the sphere of lower technological level, 74 % of enterprises are of L-tech and ML-tech areas.

b) Analysis of innovation needs of enterprises

During the above mentioned research on the sample of 333 companies were identified the attitude towards innovations, rate and need of innovation introduction, main sources of innovations, cooperations at innovation activities, factors limiting the innovation activities and the option of the enterprises – in what they would need help and what in their option the Innovation Strategy of the Banska Bystrica Region should contain. The questionnaire survey was completed with personal discussions at 34 enterprises and with a workshop with 20 engineering enterprises where the possibilities of creating an engineering cluster were discussed. The most enterprises were addresses from the industry sector (67 %) because it is generally known that there arise the highest number of innovations and innovation solutions. Return of the questionnaires (87 %) especially from the side of engineering companies proves that this branch belongs to those which have the highest innovation potential in our region.

According to survey results of enterprise innovation needs analysis it may be stated:

- The enterprises understand what the innovations are and their positive influence on the company development, but over 60 % of them do not have the innovation strategies elaborated.
- A high percentage of companies stated, that they introduced product, process, marketing or organizational innovations in the years 2004-2007. After the personal consultations, however, it could be stated that a lot of companies are not able to orientate themselves in the problems of innovations and they confuse this notion with any step bringing them profit.
- Financial support from foreign sources was gained by very few enterprises, most of them gained the financial assistance from the structural funds and from the government.
- The internal sources, information from clients and customers and internet were considered by enterprises the most important information sources for the innovation activity. Astonishing is underestimation of the importance of information sources from universities, public research institutions and consultants, commercial laboratories or research and development institutes.
- Suppliers of equipments, materials, components and software as well as clients and customers were considered by the enterprises the most contributory partners from the viewpoint of innovation development, the weakest cooperation was developed with the government institutions, with competitors and universities.
- The enterprises showed the greatest interest in the future cooperation in the innovation activities with the advisory companies, innovation centres and universities.
- The inconsistent results concerning the present and future interest of enterprises in cooperation with universities and research institutions

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originate from the insufficient mutual communication, from the psychological barrier especially of small entrepreneurs to address the universities with the aim of common solving the problem.

- Lack of own financial sources and high costs of innovations prevent them from innovation activities. The enterprises need the largest assistance in the spheres of financing the innovation activities, support of export and education.

c) Analysis of technological offer

The analysis of technological offer has consisted of these two parts:

- analysis of organizations dealing with research and development (R&D),
- analysis of supporting organizations for entrepreneurs.

The aim of this analysis was to gather the information on institutions responsible for the innovation development in the region, on supporting organizations for entrepreneurs, to identify the offer of these organizations for the application sphere, the extent of commercialization of research and development outputs and the extend of cooperation of research and development organizations with the entrepreneurial sphere. Further aim was to gain information on supporting and financing the research, development and innovations and on main obstacles to applying the creativity in the field of research and development activity and in creation of innovations.

The survey showed that most organizations dealing with research and development in our region are from the engineering sphere (46 %), chemical and pharmaceutical industry (18 %), electrical industry, ICT (18 %) and forestry (18 %). It is especially the industrial research and development linked with specific manufacturing enterprises. Its highest innovation potential is also confirmed by an activity in the sphere of rights to objects of intellectual property.

There are two universities in the region of Banska Bystrica. Matej Bel University offers a classical university spectrum of educational possibilities of study in the field of education, social, economic and law sciences, arts, natural sciences, information sciences, mathematics, ICT and social services. Technical University in Zvolen as a top research and development and educational institution fulfils its main task in mutually closely connected fields of study and research in forestry, woodprocessing, ecology, environment and other related fields.

The results of R&D organizations analysis.

- The research and development results in the addressed organizations are headed especially to large enterprises (30 %), less to small and medium-sized enterprises.
- The questioned organizations execute the transfer of the results into the production and entrepreneurial sphere by means of cooperation agreements, sale of made-to-order solutions and by execution of common projects. Transfer of know-how by means of franchising operations concerning the objects of the intellectual property is used only sporadically.

- Utilization of the research, development and innovation results of the questioned organizations in the entrepreneurial sphere had from the year 2004 up to the year 2006 the rising tendency. In 2006 the average value of research, development and innovation results utilization out of the number of implemented outputs into the entrepreneurial sphere reached the value of 66 % and the average estimated utilization rate of these results in 2007 is 60 %.

Results of Analysis of supporting organizations for entrepreneurs

Nowadays there is a sufficient number of subjects in the Banska Bystrica Region providing services for entrepreneurs. However, only few of them provide services for research, development and innovations too. The geographic coverage of the territory with these subjects copy the industrial strength and the entrepreneurial background of individual areas.

From the viewpoint of subject structure we mean especially RPIC/BIC/CPK – there are 6 of them and they have been working for a long time (6-14 years) in their regions. Further there are SOPK regional offices (2), industrial unions and associations and regional development agencies as well. In the Banska Bystrica Self-governing Region trade communities and associations work too, especially active is the Regional constituent of the Slovak Trade Chamber and the Trade community of Zvolen. It is important that the respondents understand the Regional Innovation Strategy which is being prepared as a system of supporting the innovations in the region. In accordance with the response evaluation it should focus in its measures and tools on creating a complex regional system of innovation support so that it contains:

1. Creating an institutional network of innovation support in the region.
2. Creating a new subject – innovation centre (an alternative is charging an existing organization, e.g. a research institute or a university with new tasks) as an innovation background and a covering organization for entrepreneurs and those providing services to entrepreneurs.
3. Creating regional financial tools for supporting the innovations. The aim of this measure should be the proposal and creation of regional financial tools in such a way that they supplement and widen the nationwide financial tools.

4 SWOT analysis of innovation potential in Banska Bystrica Region and the priorities for increasing of innovation potential in Banska Bystrica Region

The SWOT analysis is the starting point for defining the priority fields as a basis for the future setting of the Regional Innovation Strategy of the Banska Bystrica

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Region. The main results of the second phase „Analysis“ are summarized shortly as follows.

Strengths

1. Interest of regional administration in supporting entrepreneurial and innovation environment in the region.
2. Technical University, National Forestry Centre and Institute of Forest Ecology as a R&D basis for wood-processing and ecology.
3. Matej Bel University as a centre for education in the area of social and natural sciences.
4. Existence of basic and applied research and state testing laboratories.
5. Educated labour force.
6. Secondary and vocational school system network.
7. Sufficient number of supporting, advisory and consultancy centres for entrepreneurs.
8. Traditions and potential in industrial production, mainly in engineering, wood-processing, metallurgy, glass, chemical and food-processing industry.

Weaknesses

1. Enterprises and R&D institutions have not elaborated any innovation strategies or long-term visions of development.
2. Low orientation of SMEs in existing possibilities of financial support for enterprises.
3. Limited financial and human resources for innovation in SMEs.
4. Low awareness of cooperation need.
5. High share of production with low added value.
6. Financial and moral undervaluation of well-educated technical labor force.
7. Insufficient linkage between R&D and enterprises.
8. Persisting traditional thinking and fear of innovation, orientation on existing and conservative customers and on achieving a short-term profit.

Opportunities

1. Integration into international collaboration.
2. Orientation of EU policies on support of research, development, innovation, information technologies.
3. Dynamic growth of the economy of the Slovak Republik.
4. Possibility to use finances from structural funds and other funds of EU in the programming period 2007-2013.
5. Dynamic development of IKT.
6. Involvement of Regional government into coordination of innovation process in the region.

Threats

1. Non favourable demographic development.

2. Drain of highly qualified labour force to other regions of the Slovak Republik or abroad.
3. Persisting lack of interest in technical education.
4. Misunderstanding of need for clustering of companies.
5. Insufficient investments in R&D from government.
6. Growing prices of energies, dependence on foreign suppliers.

On the basis of accomplished analysis, EU methodology, experiences of developed European regions, terrain researches and work of expert groups, the proposal of *five priorities for the increasing of innovation capacity of Banska Bystrica Region* has arisen. For each of stated priorities there are described system measures of the strategy, together with the examples of proposed pilot activities.

Priorities:

A. *Innovation policy and culture in the region*

Measures:

1. Creating of regional innovation awareness.
2. Increasing of awereness in the field of intellectual property rights.
3. Support of innovation development by regional government.

B. *Human resources for innovation*

Measures:

1. Support of lifelong education and career consultancy.
2. Improvement of conditions in the field of creativity and technical skills at schools.
3. Support of updating of curriculum according to the needs of practice.

C. *Cooperation in innovation development*

Measures:

1. Support of cooperation between research and development and practice.
2. Support of partnerships building, networks and clusters.
3. Strengthening of international cooperation and mobility.

D. *Measures: Support of innovative companies*

1. Foundation of new, innovative small and medium enterprises.
2. Support of existing innovative companies.
3. Support of technology transfer.
4. Support of creation, protection and using of intellectual property objects.
5. Establishment of regional financial instruments for support of innovation.

E. *Regional infrastructure for innovation*

Measures:

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1. Creation of institutional framework for support of innovation activities in the region.
2. Support of building infrastructure and advisory services for innovation.

Conclusions

New understanding of innovations in the last years has showed on the importance of system approach and has led to more integrated approach by developing measures in the area of innovations. Over the years the methodology of developing the regional innovation strategy has been broken down into three simple measures: 1) build consensus, 2) analyse the potential and the needs and 3) develop strategy. The measures mentioned above are just broad outlines of a comprehensive methodological system. The methodology ensures that a regional innovation strategy is not an end in itself, but can evolve into a powerful tool for innovation and growth. A regional innovation strategy is not „just a piece of paper“. It epitomises the combined will of a region´s social and economic actors to pursue a common goal and shape the future of their region.

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