

# The Process of Forming the Regional Innovation Strategy

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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) defining priorities and action plan. The aim of the article is to present the regional innovation strategy as a driver of economic development in a region, to explain the content and the process of forming the regional innovation strategy and to give the view on practical approach to developing a regional innovation strategy in the Banska Bystrica region. Attention will be given to building up the consensus in Banska Bystrica region, to the detailed analysis and evaluation of regional innovation potential as the outcomes for forming the regional innovation strategy in Banska Bystrica region (stress is placed on a detailed analysis of economic potential and sector trends, on analysis of entrepreneurs needs, on analysis of technological offer and support to entrepreneurs and on 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 the definition of main priorities for increasing innovation capacity in the Banska Bystrica region. For each of the stated priorities system measures of the strategy are described together with the set of proposed pilot activities. The paper was elaborated as a part of VEGA project 1/0654/11, "Innovative small and medium enterprises as a part of knowledge-based economy in Slovakia".*

*Keywords: regional innovation strategy; the process of forming regional innovation strategy; consensus building up; analysis of regional innovation potential; SWOT analysis; priorities; measures and activities in regional innovation strategy*

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## 1 Introduction

The present stage of world economy development is influenced by the globalization process. The individual states and regions must cope with its impacts and create conditions for the continual restructuring of its own economy. One of the restructuring tools is formed by innovation processes which lead to the higher productivity and higher competitiveness. The innovation processes form the conditions for better market application of companies, resulting in the economic

development of regions and the state [7]. It is proved by the experience of advanced European regions for which the support of research, development and innovation belongs to the key priorities [2].

Several studies dealing with innovation confirm that the key to increased wealth and more a competitive economy is to be found at the regional level. This is because regions are closer to the companies, small and large, that are the engines of growth, and due to this proximity they are better placed to provide support and initiate dialogue with all the relevant actors (research institutions, universities, financing institutions, public agencies). Together they can form a common vision, mobilise all efforts to achieve that vision and respond quickly and flexibly to any needs that may arise. Immediate contact of regional administrative bodies with all relevant actors enables also better setting the programmes, schemes and supporting activities.

The regional innovation strategies are one of the main policy tools to support of innovation at regional level. The formulation of a strategy is perceived as a tool to deal with the future. The regionalization of the planning and running of the innovation process leads to the permanent validity of the regional structure activities [9].

The aim of this article is to present the regional innovation strategy as a powerful driver of economic development at a regional level, to formulate the basic steps in forming the regional innovation strategy and to give a practical view on the process of forming a regional innovation strategy in the Banská Bystrica region (Slovakia). The paper was elaborated as a part of VEGA project 1/0654/11, “Innovative small and medium enterprises as a part of knowledge-based economy in Slovakia“.

## **2 Regional Innovation Strategy – Driver of Economic Development at a Regional Level**

Innovation has been broadly recognized as an important factor in economic growth. The systems of innovation can be found at all levels of the economy, such as having a national, regional and sector perspective (2). There are several differences between national and regional levels. Compared to the national level, regions are important for the proximity of all actors and possibility to create social capital. Geographic proximity has the potential to create competitive advantages in terms of interaction, learning, access to skills and cooperation in development and business. Regional economies can be understood as the places of collective technological learning.

The strong interaction between learning, social capital and regional effects has been leading experts to pay more attention to the regional level of innovation, resulting in concepts such as industrial districts and innovative milieu and, more

recently, in regional innovation strategies. These concepts try to identify the precondition for the economic growth of regions, basically based on innovation and learning, and to identify some key issues related to innovation activities in the region. All concepts have shown the increasing importance of support for innovation.

According to Koschatzky and Gundrum regional innovation support has three major tasks (6):

- the activation of potential regional resources for the development and application of new technology,
- the inter-linkage of region-specific resources in regional innovation networks that comprise all the relevant actors in industry, science and policy, and
- the integration of regional networks into supra-regional technology cooperation systems.

The regional economy is a complex system which goes beyond the development of sector policies delineated in isolation. It involves more than specific efforts to increase spending on R&D, support to SMEs, or support to high-tech activities. It focuses on developing integrated approaches based on the characteristics of different territories. It establishes networks of institutions and stakeholders, creates space for them to develop constructive dialogue and uses their inputs in the decision-making process. This approach of this “third generation” innovation is newly supported by the European Commission. It is not considered a linear process that starts with research, eventually leading to development translated later into growth in the territories that have more capabilities. That is a product of policy-mix including several bodies and stakeholders in which the territories, their specificities and conditions are paramount. On the other hand, specialization is very important to gain regional competitive advantage. Functioning innovation systems include strong input suppliers and demanding customers, and firms which compete with each other for customers but also cooperate (6).

New understanding of innovation in the last years has showed the importance of a systemic approach and has led to a more integrated approach by implementing measures in the area of innovation. The regional innovation strategy is one of the main policy tools for the support of innovation at a regional level. The drawing up the regional innovation strategy comes from the explicit need to have a basic document which can cover the problems of innovation in the framework of a concrete region because innovation represents one of the main tools for establishing the knowledge-based economy, which is a basic pre-requisite for achieving the Lisbon Strategy objectives, not only at the national, but also at the regional level [16].

The regional innovation strategy approach, which today is widely recognised as a powerful driver of economic development at the 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 [11].

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-makers to the actual needs of businesses and to their expectations and capacities with regard to innovation [3]. 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 innovation capacity of the region in the wider, international context. The resulting data powers a dialogue organised around intelligence.

This open, free-flowing dialogue enables 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 [17].

While there is no single 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 process of forming the regional innovation strategy can in general be divided into three phases [17]:

*Phase 1:*

Consensus-building – the establishment of managing and executive units of the project, an information campaign, achieving the consensus between those involved in the regional and innovation development, establishing 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 innovation, an analysis of a technological offer, the identification of shortcomings and barriers, SWOT analysis.

*Phase 3:*

Defining priorities and action plans, formulating the regional innovation strategy – draft of strategic fields of the regional innovation strategy, of priorities and measures, the formulation of the Action plan and a set of pilot activities, draft of principles for the regional innovation strategy implementation, working out the monitoring and evaluation system.

### **3 The Process of Forming the Regional Innovation Strategy in Banska Bystrica Region**

The Regional Innovation Strategy of the Banska 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 larger companies either.

The Regional Innovation Strategy of the Banska Bystrica region has not come into existence as an isolated document, but rather it is in agreement with basic strategic documents both at the regional and national level, and at the European level as well, because innovation has 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 innovation in the framework of the state. It is in agreement 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 with the title “The development of the knowledge-based economy and innovation, and of the programme of social, economic and cultural development of the Banska Bystrica self-governing region” [12]. The process of forming the regional innovation strategy in Banska Bystrica region had three phases.

#### **3.1 Consensus-Building – Phase 1**

The main aim of the first phase was to establish the project organizational structure. The management of the project consists of the steering committee, project coordinator and the project partners’ representatives. It was built up in such a way that it represents and ensures the principle of consensus and partnership in the region, which is an inevitable condition for the draft and especially for the implementation of the regional innovation strategy.

The main task of the steering committee is to ensure the successful implementation of regional innovation strategy project. The members of steering committee (19 members) represent the project in specific areas of their activities, decide the strategic objectives and orientation of the project, represent institutional support, facilitate achievement of regional consensus among key institutions in the region and evaluate achievement and strategy heading.

The project coordinator is in charge of managing the strategy of the preparation, implementation and evaluation of the regional innovation strategy project. The expert groups are an important mechanism for building regional consensus. They joined representatives of the public and private sector at the following tasks: a) assessing and commenting on the preliminary results of analysis, b) analyses results evaluation and recommendations for the development strategy, c) working out the specific parts of the regional innovation strategy, d) drafting priorities, measures and possible pilot activities on the basis of the analyses results.

The expert groups were thematically focused on five fields [12]:

- building up the innovation awareness in the region,
- management of human resources for research, development and the innovation development,
- cooperation among science, research, development and industry,
- financing of research, development and innovation development and legislative system,
- infrastructure for support of research, development and innovation development.

### **3.2 Analysis of the Innovation Potential of Banska Bystrica Region – Phase 2**

With the aim of identifying the Banska Bystrica region's needs and specific features, the following surveys were conducted during the year 2007:

- a) analysis of economic potential and sector trends,
- b) analysis of entrepreneurs' needs,
- c) analysis of technological offer and support for entrepreneurs:
- d) SWOT analysis of the innovation potential in the Banska Bystrica region.

The analyses mutually confront the sides of supply and demand in the field of innovation 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 innovation.

The results of the innovation potential analysis created the basis for formulating the SWOT analysis of the innovation potential in the Banska Bystrica region.

#### *a) Analysis of Economic Potential and Sector Trends*

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

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

The economic structure of the Banska Bystrica Region has been characterized in recent years by a gradual strengthening of the service industry and ongoing decline in agriculture. In the branches of industry and building, a rather distinct recovery can be 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 the lower technological level; 74% of enterprises are of L-tech and ML-tech areas [13].

#### *b) Analysis of the Innovation Needs of Enterprises*

On a sample of 333 companies, the above-mentioned research identified the attitude towards innovation, the rate and need of innovation introduction, the main sources of innovation, the level of cooperation in innovation activities, the factors limiting innovation activities and the options of the enterprises – in what they would need help and what in their opinion 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. Most of the enterprises addressed were from the industry sector (67%) because it is generally known that it is here that the highest number of innovations and innovative solutions arise. The return rate 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 [13].

According to survey results of the enterprise innovation needs analysis, it can be stated that:

- Enterprises understand what innovation is and its positive influence on company development, but over 60% of them do not have 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 said that a lot of companies are not able to orientate themselves in the problems of innovation, and that 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 structural funds and from the government.
- Internal sources, information from clients and customers and internet were considered by the enterprises the most important information sources for innovation activity. Astonishing is underestimation of the importance of information sources from universities, public research institutions, 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 to be the partners who contributed the most from the point of view of innovation development; the weakest cooperation was developed with the government institutions, with competitors and with universities.
- The enterprises showed the greatest interest in future cooperation in innovation activities with advisory companies, innovation centres and universities.
- Inconsistent results concerning the present and future interest of enterprises in cooperation with universities and research institutions originates from the insufficient mutual communication, from the psychological barrier especially of small entrepreneurs to address the universities with the aim of solving the problem together.
- A lack of own financial sources and the high costs of innovation prevent them from innovation activities. The enterprises need the greatest assistance in the area of financing innovation activities, and in support for export and education.

### *c) Analysis of Technological Offer*

The analysis of technological offer 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 information on the institutions responsible for innovation development in the region and on supporting organizations for entrepreneurs, in order to identify the offer of these organizations for the application sphere and the extent of commercialization of research and development outputs and the extent of cooperation of research and development organizations with the entrepreneurial sphere. A further aim was to gain information on support and financing for research, development and innovations and on the main obstacles to applying creativity in the field of research and development activity and in the 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 activity in the sphere of rights to intellectual property.

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

#### *Results of R&D Organizations Analysis*

- Research and development results in the addressed organizations are directed especially to large enterprises (30%), less to smaller and medium-sized enterprises.
- Questioned organizations execute the transfer of the results into the production and entrepreneurial sphere by means of cooperation agreements, sales of made-to-order solutions and by the execution of joint projects. The transfer of intellectual property by means of franchising operations is used only sporadically.
- The utilization of the research, development and innovation results of the questioned organizations in the entrepreneurial sphere had a rising tendency from the year 2004 up to the year 2006. 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 was 60%.

#### *Results of the Analysis of Supporting Organizations for Entrepreneurs*

Nowadays there is a sufficient number of organisations in the Banska Bystrica region providing services for entrepreneurs. However, only a few of them provide services for research, development and innovations as well. The geographic coverage of the territory by these organisations reflects the industrial strength and the entrepreneurial background of individual areas.

As regards the element structure, we mean especially Regional business centres/Business innovation centres/Centres of first contact – there are 6 of them and they have been working for a long time (from 6-14 years) in our region. Further, there are the regional offices of Chamber of Industry and Commerce (2), industrial unions and associations and regional development agencies as well. In the Banska Bystrica self-governing region trade communities and associations work as well, and especially active are 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 for supporting the innovation in the region. In accordance with the

response evaluation it should focus its measures and tools on creating a complex regional system of innovation support so that it contains:

- Creating an institutional network of innovation support in the region.
- Creating regional financial tools for supporting innovation. 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 national financial tools.
- On the basis of the innovation potential analysis it is possible to formulate the SWOT analysis of the innovation potential in the Banska Bystrica region.

*d) SWOT Analysis of the Innovation Potential in the Banska Bystrica Region*

The SWOT analysis is the starting point for defining the priority fields as a basis for the future establishing of the Regional Innovation Strategy of the Banska Bystrica region. The main results of the second phase “Analysis“ are summarized briefly as follows [12].

*Strengths:*

- 1 Interest of the regional administration in supporting an entrepreneurial and innovation environment in the region.
- 2 Technical University, National Forestry Centre and Institute of Forest Ecology as an 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 The existence of basic and applied research and state testing laboratories.
- 5 An educated labour force.
- 6 Secondary and vocational school system network.
- 7 A sufficient number of supporting, advisory and consultancy centres for entrepreneurs.
- 8 Traditions and potential in industrial production, mainly in the engineering, wood processing, metallurgy, glass, chemical and food-processing industries.

*Weaknesses:*

- 1 Enterprises and R&D institutions have not elaborated any innovation strategies or long-term visions of development.
- 2 Low orientation of SMEs towards 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 a fear of innovation; orientation towards existing and conservative customers and on achieving short-term profit.

*Opportunities:*

- 1 Integration into international collaboration.
- 2 Orientation of EU policies for support for research, development, innovation, and information technologies.
- 3 The dynamic growth of the economy of the Slovak Republic.
- 4 Possibility to use finances from structural funds and other funds of the 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 Unfavourable demographic development.
- 2 Drain of highly qualified labour force to other regions of the Slovak Republic or abroad.
- 3 Persisting lack of interest in technical education.
- 4 Misunderstanding of the need for clustering of companies.
- 5 Insufficient government investment in R&D.
- 6 Rising energy prices, dependence on foreign suppliers.

### **3.3 Priorities, Measures and Activities for Regional Innovation Strategy Implementation - Phase 3**

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

*Priorities:*

*A Innovation policy and culture in the region*

Innovations are a tool of competitiveness of a company and the whole region in the conditions of a knowledge-based economy. The Banska Bystrica region must create an innovation-stimulating environment and integrate the support for innovation into its strategic plans and policies in the scope of the Program of Economic and Social Development. To put strategic plans into practice, it

is necessary to create a new innovation culture, which includes the opinions, motivations and attitudes towards innovation, as well as the behaviour of subjects in the scope of innovation process [5]. To achieve this aim three main measures were formulated and for every measure concrete activities were formulated.

Measures:

- 1 Creating regional innovation awareness. The aim of this measure is to increase the innovation culture and innovation awareness of all innovation elements of the region as a group, and therefore to increase the quality of business environment. The main activities recommended were: the organization of conferences, seminars and workshops about innovation, the creation of business web-portals containing information about innovation, media support for innovation development, etc.
- 2 Increasing awareness in the field of intellectual property rights. The aim of the measure is to increase the awareness and understanding of the importance of innovation protection and the reasons for protecting intellectual property. The main activities recommended were: publishing promotional materials about intellectual property protection and the promotion of intellectual property through an innovation web-portal, etc.
- 3 Support for innovation development by the regional government. The aim of this measure is to create framework conditions for innovation development in the region. The main activities are: to incorporate the priorities and measures of a regional innovation policy into the regional and national strategic programmes, to create a system for promoting, monitoring and updating the regional innovation policy.

#### *B Human Resources for Innovation*

Human and intellectual capital is the most important prerequisite for creating and implementing innovation. Managerial, scientific, technical, economic and entrepreneurial skills and knowledge run through the whole innovation process [10]. The level of the citizens' education impacts positively on the prosperity of the region as a whole. Its progressive increase should be one of the main priorities of the long-term orientation of the Banska Bystrica region. For this priority three main measures were formulated.

Measures:

- 1 Support of lifelong education and career counseling. Fast progress in science and technology in past decades and the development of knowledge-based economy has caused changes in the labour market demands for workforce qualifications. Higher employee flexibility, including graduates and those with further education, is required. In scope of this measure it is therefore recommended to support activities for the development of lifelong education [1]. These activities were suggested: to create educational courses according to practical needs, to

propose the strategy of lifelong education in the region and to change the forms of lifelong education – transfer to learning organization.

- 2 Improvement of the conditions in the field of creativity and technical skills at schools. The aim of this measure is to increase the number of candidates applying for the study of natural sciences and technical fields, to lead students to creative thinking and to develop innovative and business knowledge and skills among graduates of higher education. The main suggested activities are: to organize thematic seminars for teachers and students with the aim of making science and technology more attractive, to prepare teachers and students for starting their own businesses, to set up an original organisation – an educational facility (institution) for children, teenagers, and parents, in order to influence the thinking of mainly the young people towards creativity.
- 3 Support for updating the curriculum according to practical needs. The aim of this measure includes supporting activities to improve and integrate the readiness of all school graduates with the needs of the workforce market.

### *C Cooperation in Innovation Development*

An innovation process of a higher quality in an enterprise will not work without intensive cooperation with research and development organizations and with universities. This cooperation belongs to the signs of knowledge-based economy and is a source of company and regional competitiveness. Economic theories and experience show that another source can be regional clusters, because they significantly contribute to a higher application of innovations [8]. Cooperation in the innovation development will not work without multinational cooperation in solving science and technical tasks, without the exchange of best practices as well as the reciprocal exchange of research and development staff. For this priority three main measures were formulated.

Measures:

- 1 Support of cooperation between R&D and practice. The aim of this measure is to increase the number of small and medium enterprises involved in research and development activities on a regional, national and multinational level, as well as the higher use of research and development capacities for small and medium enterprises in the region. The main suggested activities are as follows: to organize thematic workshops for entrepreneurs with the participation of universities, research and development institutions, and supporting organizations for entrepreneurs; to more effectively promote research and development programmes for small and medium enterprises; to support the participation of small and medium enterprises in R&D programmes and others.

- 2 Support for partnership-building, networks and clusters. The aim of this measure is to create effective networks and partnerships with the emphasis on innovation and enterprise development, with the aim of increasing the competitiveness of the Banska Bystrica region and of stimulating the cooperation of small and medium enterprises in the scope of branch clusters. The aim of suggested activities is to improve conditions for initiating and creating clusters by promoting a common awareness of the benefits and possibilities of creating clusters; to integrate small, medium and large companies in the clusters, as well as companies with foreign capital, research and development, and educational and consulting organizations; to work out a methodological guide and financial support for feasibility studies and the creation and operation of the clusters, and others.
- 3 Strengthening of international cooperation and mobility. The aim of this measure (as well as the aim of suggested activities) is to utilise and enhance international cooperation in the field of innovation with to the goal of adopting acquired information on practical skills and reliable methods used by more developed European regions to the regional innovation system. For the effective development of Banska Bystrica region, continuous monitoring and comparison of this region to those developed European regions is necessary, as well as is following trends in the field of innovation support. Therefore by this measure the participation of the Banska Bystrica region in international projects and networks for innovation support and transfer of the best practices is recommended.

#### *D Support of Innovative Companies*

The implementation of innovations proceeds in companies. Therefore a healthy and well-operating business sector is one of crucial assumptions of innovative performance in the region. Small and medium enterprises are generators of new jobs and they play an important role in the innovation process. On the other hand, they have limited access to information, scientific knowledge and especially to financial sources for innovation. These companies generate qualified jobs directly in the region and favourably influence the development of progressive industries [9]. One of the most effective and economically most beneficial ways of implementation research and development outcomes into practice is the foundation of new and innovative small and medium-sized enterprises. Therefore five measures were formulated.

Measures:

- 1 The foundation of new, innovative small and medium-sized enterprises. The subject of this measure is to support the creation of innovative small firms and spin-off companies in progressive industries in the region, to create a system for supporting new, innovative companies in developing

programmes, and incubation services for starting companies, including their financing. Suggested activities were recommended: to support the creation of innovative small and medium enterprises and spin-off companies in progressive industries of the region, to implement spin-off programmes (incorporating the education of potential businessmen, services for starting businessmen, support incubation for starting companies, financial aid for new and starting companies) and to organize innovation competitions and award innovation prizes.

- 2 Support for existing innovative companies. During the implementation of this measure, sectors of small and medium enterprises, which can play an important role in the growth of regional competitiveness and by development of knowledge-based economy, will be identified. It is vital for these sectors that they be provided with specific development, financial and infrastructure programmes. Activities were recommended to process the main regional development trends in the high-tech sector using for example the methodology “technology foresight”, to support chosen high-tech sectors with the use of grants, tax and other incentives, to increase the attractiveness of the region for investors in high-tech and other industries of the knowledge-based economy, and to give assistance to small and medium-sized enterprises with marketing activities.
- 3 Support for technology transfer. The transfer of technology and knowledge represents an intermediary link between research and development organizations and application sector [4]. Services in technology transfer, including the search and evaluation of commercial potential of R&D inputs, the development of these inputs to commercially applicable form and their implementation either using licensing or the creation of spin-off companies, are not developed in our region yet. The development of presented process assumes an improvement in R&D marketing activities and the motivation of researchers towards practically focused research. The measure also involves the training of specialists in particular services, defining research and development supply and the creation of a database containing demand and supply for research and development outcomes.
- 4 Support for the creation, protection and use of intellectual property. The aim of this measure is support of innovative activities applying European principles in the protection of intellectual property (to develop services in the area of intellectual property protection and assistance with licensing activities, to establish methods for entrepreneurs and R&D employees and procedures for the formal and informal protection of intellectual property).
- 5 The establishment of regional financial instruments for the support of innovation. Financing is a weak point in the innovation process, not only in our region. The system of public support assigned to small and

medium enterprises is not developed enough and unable to adequately resolve financing for innovative processes [8]. Financing is also a limiting factor in the creation of an innovation infrastructure and supporting services for innovation. The aim of the suggested activities is the design and creation of regional financial instruments that would properly supplement state financial instruments. Investments should concentrate on the creation of an innovation infrastructure, the operation of their particular units and consultancy for small and medium enterprises. Support assigned to business should include providing grants and loans, including loan security and other fees. This aid will be directed towards financing pre-manufacture stages and towards the purchase of licenses and intellectual property protection. It is necessary to support programmes for assisting financing innovations with the use of commercial resources for e.g. Risk Capital, Business Angels, etc.

#### *E Regional Infrastructure for Innovation*

Only a small part of small and medium enterprises possess sufficient know-how for the realization of all activities of the innovation process; therefore it is necessary to fill this gap with services of specialised consulting organisations. A tangible infrastructure is also vital for the development of innovation, for e.g. sufficient incubator spaces, including equipment, innovation centres, etc. To achieve this priority two measures were formulated.

Measures:

- 1 The creation of an institutional framework for the support of innovation activities in the region. There are currently in our region enough organisations providing services for entrepreneurs. However, only a part of them also provide services for research, development and innovation. The measures recommend working out a feasibility study of the establishment of a network of subsidiary institutions, so they can effectively and at an expert level provide suitable scientific services, such as scientific and technical information, information about norms, EHK regulations, and consulting in the fields of intellectual property, marketing, implementation of new products into production, technology foresight, etc.
- 2 Support for building infrastructure and advisory services for innovation. The experiences of European regions significantly confirm the positive role a well-functioning tangible infrastructure plays in the creation and exploitation of innovation. It includes mainly technological incubators, technology and innovation centres and scientific parks. Technology incubators represent effective tools for assistance to emerging innovative businesses [15]. It is also vital to support the establishment and development of technology and innovation centres. One perspective is



the support for building a scientific park, which is still missing in the region. And important is also support for the existing network of supporting organisations, such as regional business centres, business innovation centres and centres of first contact.

### **Conclusion**

A new understanding of innovation over the last years has confirmed the importance of a systematic approach and has led to a more integrated approach to developing measures in the area of innovation. One of the main policy tools for the support of innovation at the regional level are regional innovation strategies. The regional innovation strategy is viewed as a powerful driver of economic development in regions. The objective of a regional innovation strategy is to encourage and facilitate new ideas and innovation through the creation, diffusion and exploitation (or commercialisation) of new knowledge. The regional government authorities can directly intervene through the supply of R&D, education and capital that match the needs of local firms and which increase the absorptive capacity and innovative capability of firms.

The development of a regional innovation strategy is viewed as an opportunity for regional actors and firms to engage in a process of collective learning which can introduce new thinking about traditional problems and potential solutions. What this viewpoint reflects is that instead of settling for top-down handling, regional innovation strategy projects strive for a bottom-up approach. Actions developed as a part of an innovation strategy emerge as a result of research and broad-reaching discussion with the relevant actors within the region.

To increase the probability of policy success, the regional innovation strategy needs to account for the region-specific context because it provides opportunities but also sets limits to what can be achieved. Strategy should take the history of the region as a basic starting point and identify regional potentials and bottlenecks accordingly. To avoid regional lock-in, it is crucial that the strategy be open to newcomers and new policy experiments.

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 the strategy. The priorities, measures and activities 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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