

## Draft Innovation Strategy of the Slovak Republic for 2007 to 2013

### 1. Analysis of the present situation

Innovation activities as the results of research and development in general are, in the European Union and in Slovakia alike, the drive of economic development, advancing the possibilities of future competitiveness in the form of new knowledge and increasing economy's efficiency and performance, particularly through SME's. States that invested significant funds in these activities in the past have presently advanced economies multiplying the effect of the investment in science and technology. The Slovak Republic cannot take a different course.

No comprehensive innovation strategy has been adopted in Slovakia. There is no comprehensive functioning innovation system that should comprise institutions, policies, programmes and tools creating conditions for the support to innovations increasing competitiveness of Slovak Republic's economy.

On the other hand, however, it should be noted that the Government of the Slovak Republic approved the European Council's conclusions of March 2005 and became intensely involved in their performance, considering innovation policy to be one of its priorities<sup>1</sup> that will contribute to the building of knowledge economy and thereby to economic growth. At the same time, it is true that the Slovak Republic has a relatively good research potential with the key problem being the conversion of this quality into outputs implementable in the practice and innovations, particularly at small and medium-sized enterprises.

Yet there are numerous deficiencies affecting the fulfilment of the Government's priority in the field of innovation that were characterised in the analysis of innovativeness support tools and in the innovation support environment analysis conducted by the Ministry of Economy of the Slovak Republic in 2005.

One of the decisive negative elements revealed by the analysis is the absence of a comprehensive form of the innovation strategy. Before 2006, there was no central body that would act as an umbrella for the issue of innovations. Specific measures were decided and implemented by different state administration bodies, particularly the Ministry of Education and the Ministry of Economy of the Slovak Republic and agencies controlled thereby. Such fragmentation of competences was causing low efficiency of the innovation system being characterised by insufficiently developed coordination and consulting mechanisms of the responsible institutions. Even though the solution of this problem was supposed to be assisted by the Government Council for Science and Technology, it should be noted that the research community as well as industrial associations participated in formulating the state science and technology policy rather than in the preparation of specific measures of the innovation policy. This then resulted in poor links between basic and applied research and the business sector. Likewise, the vertical coordination did not work – between the national and regional innovation system – that would enable the formation of initiatives responding to specific conditions of the regions in a “bottom-up” fashion.

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<sup>1</sup> See the document:

Manifesto of the Government of the Slovak Republic  
National Strategic Reference Framework of the Slovak Republic for 2007-13  
National Reform Programme of Slovakia for 2006-08;

Previous governments put greater emphasis on basic rather than applied research. Basic research is conducted primarily by institutions such as SAV and universities. Certain activities in this sphere are performed also by the Research and Development Support Agency whose competences cover also the management of state research and development programmes. The poor emphasis on applied research is the result of an inefficient coordination of individual state institutions and the fragmented environment of state support to innovativeness in the business sphere.

Pro-innovative measures, besides direct implementation of applied research results, started to be implemented only after 2000, involving implicit rather than explicit instruments. The number of explicit innovation measures is very low in comparison to other EU countries. The previous government enforced a policy focused on the improvement of the framework conditions for business environment, social development and reform processes rather than on specific interventionist measures. Until recently, science, technology and innovations were not included among top priorities. This happened only recently after the Competitiveness Strategy for the Slovak Republic until 2010 was adopted. One of the previous priorities was to attract as many foreign investors as possible in an effort to address the problem of high unemployment and growing imbalance in regions' economic strength. The support to the development of new technologies was not considered a pressing issue and this problem was expected to be solved by the inflow of foreign direct investment. As shown by the practice, foreign investors contributed to technology transfer rather than to the development of new innovations by investing in research and development.

The tools currently applied are mostly unsystematic, focusing on companies not having sufficient funds for innovations at their disposal. An examination of companies' innovativeness revealed the need for a greater application of proactive tools supporting the enterprises having sufficient funds but not innovating from various reasons – lack of knowledge on innovations and poor innovation management could be mentioned in particular as examples. On the part of the state, there is a lack of instruments supporting innovators' interactions and diffusion of innovations (such as R&D staff mobility schemes or those of innovative culture support). As for stimulating inter-company cooperation (innovators' interactions), the Government restricts itself to the support for establishing industrial zones and parks. However, most of the initiatives supporting cooperation among companies do not come “top-down” but rather “bottom-up” from various institutions of non-governmental nature (such as industrial associations or technology centres). Nearly no measures supporting innovativeness in the sphere of services are applied.

What occurred subsequently was the decrease of the number of employees in research and development, particularly in the public sector and at universities, and the job of a research fellow, particularly for young people, is becoming less attractive. They either leave abroad or seek success in another private sector, which is able to pay them better. The lack of finance in research and development is also linked to obsolete and insufficiently developed infrastructure for innovations and the need of its renewal. This eventually results in a much lower level of Slovak economy's added value compared to the original EU countries.

Increasing the spending on research and development on its own is not sufficient to resolve the existing problems. Before it is increased, it is necessary to reconsider the entire system of R&D financing, which is in urgent need of reconstruction and change. The objective of the scientific and technical infrastructure restructuring should be the achievement

of a higher quality and lower dependency of the institutions on public finance. This could be achieved, for example, by reflecting the demand for research and development on the part of companies, particularly SME's.

Another important negative phenomenon is the fact that the key relationship in the innovation system, i.e., the relationship between the research/education system and companies, is very poorly developed. When searching for reasons for the insufficient demand among companies for results of the research and development conducted by state institutions and their poor commercialisation, it is necessary to consider the issue of commercial application of public research and development.

The link between companies and the R&D system could perhaps be assisted by innovative co-financing schemes focused on the specific problems of the SME's, which are presently not fully focused on commercial use of science, while this should be the main criterion in the allocation of funds. As for the problem of commercialisation, there is a lack of international benchmarking of Slovak science and it fails to reach a forefront position in global research and development. Another negative consequence of the weak link between the production and research sphere is the insufficient supply of R&D results suitable for commercial use.

The analysis conducted implies a low mobility of science and research workers between science and industry as well as in the opposite direction, which would facilitate the knowledge transfer and the companies' ability to apply such knowledge in the practice. In Slovakia, the link between the corporate sphere and the research and education system is similarly poorly developed with the state measures failing to respond flexibly to this need.

Slovakia still lacks a fully developed favourable pro-innovative business environment, which is also indicated by poor innovativeness of companies. There is a lack of technology-oriented business segment that would become the basis for country's innovation dynamics. That is why greater support for the establishment and growth of innovative companies becomes a necessity. Until 2001, the institutional framework failed to offer innovation support schemes to business entities. At present, several such schemes have been developed. The problem is, however, that they are not accessible to all business entities. We therefore see it as a great challenge to improve the awareness of companies and the Slovak public on the support activities of the Government in the sphere of innovations, particularly concerning the existence of various innovation programmes and consulting and advisory organisations.

As for innovativeness<sup>2</sup>, Slovakia ranked low in 2005 in the last group of poorest performance countries of all EU countries. Among all member countries, Slovakia ended up last jointly with Portugal in this ranking. The most serious and growing problem of performance in innovations is the very low performance of companies in research and development and the resulting problem of low employment rate in high-tech service industries.

There are several reasons for poor innovativeness of companies and low private spending in research and development. The first one is the lack of capital, particularly venture capital, which concerns particularly the business sphere. Although the situation has recently improved, the capital markets in Slovakia continue to be underdeveloped. The persisting

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<sup>2</sup> Source: European Innovation Scoreboard 2005, Country Report 2005 for Slovak Republic

problems concerning availability of external capital are indicated also by the fact that companies innovate primarily using their own funds.

Another reason is that only a small percentage of companies consider innovativeness to be an important source of competitiveness. In other words, most of the companies in Slovakia do not realise or underestimate the importance of innovations in today's global economy. This fact involves an inherent risk that the companies will be unable to use the opportunities offered by, for example, EU innovation programmes, which is indicated also by the relatively insignificant participation of Slovak industry representatives in the Fifth and Sixth Framework Programmes. In other words, we face a poorly developed innovative culture. It is therefore necessary to develop human resources particularly in the field of innovation management.

The Government of the Slovak Republic decided to address the above-mentioned unfavourable situation and, in its Resolution No. 832/2006, item B 31 of 8 October 2006, on the draft update to the National Strategic Reference Framework of the Slovak Republic for 2007-13, it decided to “establish a Commission for coordination and evaluation of knowledge economy within relevant operational programmes and priority axes and, in cooperation with the minister of construction and regional development, to incorporate its final competences into the final version of the National Strategic Reference Framework of the Slovak Republic for 2007-13”.

The foundations of the horizontal coordination of innovations in the framework of the above-mentioned commission have been laid by Resolution No. 1090/2006 of 20 December 2006 on the Draft Statute of the Commission for Knowledge Society. Its role is defined as a coordinating, consulting and expert body of the Government of the Slovak Republic for the issues concerning **knowledge society development**, including the issues of knowledge society in the relevant operational programmes of the National Strategic Reference Framework for 2007-13 for the objectives “Convergence” and “Regional Competitiveness and Employment” and those of the National Strategic Rural Development Plan.

## SWOT analysis

Weaknesses	Strengths
<ul style="list-style-type: none"> <li>❑ Non-existence of a strategic policy in the field of support to innovations.</li> <li>❑ Persisting weak emphasis on applied research.</li> <li>❑ Low number of explicit innovation instruments in comparison to EU countries.</li> <li>❑ Lack of proactive system instruments in the innovation policy.</li> <li>❑ Lack of support instruments to stimulate innovation.</li> <li>❑ Low and still declining GDP percentage of research and development spending</li> <li>❑ Insufficiently developed system of science and technology funding.</li> <li>❑ Non-existent strong relationship between the research/education system and the business sphere resulting in an extremely low percentage of private investment in research and development.</li> <li>❑ Persisting low mobility of scientific research staff.</li> </ul> <p style="text-align: center;"><b>Poor innovativeness of companies and low private investment in research and development</b></p>	<ul style="list-style-type: none"> <li>❑ Relatively educated and skilled workforce representing a potential for innovations – their generation and wider use.</li> <li>❑ Persisting trend of a more general use of information technologies in all spheres of life.</li> <li>❑ Long-term intensive international cooperation in science and technology.</li> <li>❑ Existence of a Central Coordinating Authority for the development of knowledge society</li> </ul> <p style="text-align: center;"><b>Educated and skilled workforce representing a potential for innovations</b></p>
Threats	Opportunities
<ul style="list-style-type: none"> <li>❑ The system of state support will be unattractive for the private sphere.</li> <li>❑ Individual measures will not support active investments in innovations.</li> <li>❑ National innovation strategy and regional innovation strategies will not be developed.</li> <li>❑ Low use of research and development results from the state and public (higher education) sector by the private sector in the practice.</li> <li>❑ Insufficient quality of the education level of the human resources participating in the development of innovations.</li> </ul> <p style="text-align: center;"><b>Unstable economic growth and living standard lagging behind the EU</b></p>	<ul style="list-style-type: none"> <li>❑ Motivationally set-up system of support to innovations from public sources.</li> <li>❑ Development of human resources lifelong development.</li> <li>❑ Increased GDP percentage of public spending allocated to innovation support.</li> <li>❑ Highly active market-oriented cooperation of R&amp;D with the private sphere.</li> <li>❑ Unified approach and implementation of third-generation innovation.</li> <li>❑ Use of international cooperation, exchange of experience and know-how in the field of innovation and support tools to stimulate innovation.</li> </ul> <p style="text-align: center;"><b>Sustainable economic development through third-generation innovations</b></p>

The European Commission distinguishes between first-, second- and third-generation innovation policies. First-generation innovation policy was focused on legal, regulatory and financial framework of innovation activities. The second-generation innovation policy is actually the present innovation policy emphasising a system approach and the importance of innovation supporting infrastructures. To fulfil the objectives of the National Strategic Reference Framework of the Slovak Republic for the Years 2007-13, it is necessary to make a

transition to the third-generation innovation policy whose task is to make innovation an integral part of all policies.

Based on the conclusions of the analysis we can state that the Slovak Republic took steps particularly in the first-generation innovation policy. However, the present innovation system is failing in its key task – in the transformation of new knowledge into improved materials, products, processes, technologies and services. In other words, only a very small progress occurred in the second-generation innovation policy. As for the third-generation innovation policy, there is no coordination of the responsible ministries on the highest level and the competences in the sphere of innovation are fragmented.

This implies that the Slovak Republic presently faces the challenge of modernising its innovation system and creating an innovation strategy that will offer, in accordance with the objectives of the Competitiveness Strategy for the Slovak Republic until 2010, adequate solutions to increase the country's innovativeness, building knowledge economy and ensuring economic growth, particularly through the growth of MSP's performance.

Under the conditions of the global economy, it appears unsustainable for Slovakia to continue pursuing strategies based on low-cost economy using presently still existing comparative competitive advantages of low costs (low wages, advantageous exchange rate, etc.). Particularly the growing competition of countries having cheap labour quickly devalues these temporary comparative advantages.

On the basis of the said facts it is therefore obvious that Slovakia must focus on sources of advantages that are generated, already now, on the basis of knowledge economy, i.e., growing innovation potential of enterprises, quality of human resources, research and technology, which are considered to be the key factors of European competitiveness growth.

## 2. Strategic objective of Slovakia's innovation strategy until 2013

**Innovations will become one of the main tools of knowledge economy development and ensuring high economic growth of the Slovak Republic with the objective of achieving the level of the most advanced economies of the European Union**

In the period of 2007-13, a national innovation system will be created in the Slovak Republic including regional innovation structures. Regional innovation structures (incubators, innovation centres, schemes, consulting centres and other elements) will create the basic structure aimed at sustainability of the Slovak Republic's knowledge-based development.

On the basis of these prerequisites, the following will be achieved in 2013:

- ❑ a positive trend in the development of innovative processes reflected in the economy and social area,
- ❑ number of projects successfully implemented,
- ❑ innovations will contribute 25% to the gross domestic product increase in the given year (presently the contribution is about 8%)
- ❑ over 50% of companies in industry and services, particularly SME's, will be of innovative nature (according to EC reports, only 13% of SME's introduced new products to the market with 32% of the existing products having been innovated in the period of 2002-04).
- ❑ the competitiveness will improve, particularly that of small and medium-sized enterprises,
- ❑ over 5% of enterprise innovation proposals will result from university research, public research and SAV (presently the percentage of innovation proposals coming from university and academic environment is less than 1%).

### **Priorities of the Slovak Republic's innovation strategy**

Priorities of the innovation strategy are set to respond to the main deficiencies stemming from insufficient support to innovative activities, particularly for the SME's, and, at the same time, to comply with key national-level strategic documents, especially the National Strategic Reference Framework ("NSRF"). On the European level, it is primarily the Innovation Strategy for the EU<sup>3</sup> that includes a roadmap of ten years for its implementation.

#### ***Priority No. 1: High-quality infrastructure and an efficient system for innovation development***

**Goal: Transparent and efficient mechanism ensuring stimulation and dissemination of third-generation innovations**

In this priority, the main emphasis is put on creating conditions for growth of innovation activities, particularly at SME's, by creating a high-quality infrastructure and support system for them. This primarily includes the law and other implementing regulations necessary to create a high-quality legislative framework. An important step will be the establishment of a professional support agency as a general partner in the field of support to innovations. Its operation requires a system of support tools that the agency will be implementing in the practice. Support to innovations in its entire spectrum must be regularly

<sup>3</sup> Document COM (2006) 502 final and document ECFIN/EPC (2006) REP/55905 rev. 1

monitored and evaluated with the objective of maximising the effectiveness and efficiency of support mechanisms.

***Priority No. 2: High-quality human resources***

**Goal: Highly competent, professional human resources with international experience, making the greatest possible contribution to the development of private-sector innovation activities**

The business sector, particularly through SME's, is generally considered to be the carrier of innovations. Fulfilment of this task requires professionally trained, educated and creative human resources. A priority area of the innovation strategy therefore must be the education and gaining experience and knowledge concerning applied research and new innovation methods that can be implemented in the business sphere. It is also important to develop effective and efficient communication on the topic of innovations.

***Priority No. 3: Efficient tools for innovation***

**Goal: Reach a situation where innovations form integral part of as many business activities as possible, particularly at SME's**

The most widespread support instrument in the field of innovation in Slovakia is the technology transfer. Other tools are nearly unknown or used to a minimum extent or marginalised as a side component of state support programmes.

However, to reach the NSRF objectives, it is necessary to stimulate innovation activities through a broad spectrum of both direct and indirect instruments. Direct instruments, in addition to subsidies to support applied research and innovation activities, include subsidies towards various innovation activities such as licence purchase, protection and registration of intellectual property, support to new design and innovative services.

Indirect instruments include, for example, loans, guarantees, seed and venture capital or other instruments enabling better access of companies to funding, particularly for SME's. Fulfilment of the above-mentioned goal requires activation of both public and private funds.

In the framework of the National Innovation System and regional innovation strategies, it will be necessary to take over partial policies sponsored by individual ministries (particularly the Ministry of Economy, Ministry of Education, Ministry of Labour, Social Affairs and Family) and higher territorial units in the field of innovation strategy and innovation policies.



### 3. Measures of the Slovak Republic's innovation strategy

The following part presents appropriate relevant measures representing opportunities for change of the present situation. Selected measures are furnished with international examples and rely on successful application elsewhere in the world.

#### *Measures within priority No. 1*

#### **Measure 1.1: Financial support to establishment of innovation centres**

**Measure objective: Use the potential of research and development institutions to the benefit of Slovakia's economy**

The measure is focused on the improvement of cooperation among the private sector, primarily SME's, universities, scientists, and researchers, by creating appropriate conditions and room for mutual active penetration of individual sectors with the purpose of reaching mutually beneficial multidisciplinary research aimed at the practice.

#### **Task:**

Develop rules of the support scheme aimed at the provision of funds to support the establishment of innovation centres. As a priority, the applicants should be research institutions in cooperation with universities, business entities, particularly SME's in cooperation with universities, or associations from the given field. Grant allocation should have the following characteristics:

- a) co-financing using own funds (at least 30%),
- b) clear partner relationships between business sector and research institutions,
- c) limited period of support from public budgets (e.g., 3 years),
- d) activities aimed at applied research, pre-production development and its implementation in the practice and the respective information transfer and education.

#### **Measurable indicators:**

- number of innovation centres,
- number of projects successfully implemented,
- added value of projects implemented,
- proportion of public and private funds per centre.

**Responsible:** Ministry of Economy of the Slovak Republic

**Deadline:** 30 September 2007

#### **Thematic and financial links to the NSRF, OP Competitiveness and Economic Growth**

- Measure 1.2: Support of common services for entrepreneurs

#### **Examples from abroad**

Inspiration can be drawn from the Swedish competence centres that started to be formed in 1995 as an initiative of the National Board for Technological and Industrial Development. There are presently 28 competence centres at 8 universities involving cooperation of about 220 industrial companies. Currently, the competence centres are managed through the VINNOVA Agency (Swedish agency for innovation systems <<http://www.vinnova.se>>) that manages the system as a joint venture with the Swedish Energy Agency (<http://www.steam.se>), which is a government financial partner in five competence centres focused on the energy sector.

The basic motivation to establish competence centres in Sweden was the knowledge that active

participation of industry in the academic research brings mutual benefits. At the same time, active cooperation between a research team and industrial enterprises in a common R&D project seems to be the most effective way of achieving harmony between academic research and industrial needs as well as of effective transfer of new knowledge into practice. As a priority, competence centres are established at individual universities, which also manage them. The centres are financed with a total amount of EUR 60 million and the percentages of individual entities in funding are as follows: industrial enterprises 40%, academic partners 30%, Agency for Innovation Systems 30%. The financial support from Agency's funds is maximum EUR 0.7 million a year per competence centre.

**Measure 1.2: Establishing a central information portal aimed at the support to innovativeness in the business sphere**

**Measure objective: Ensure maximum availability of comprehensive information on innovations**

The measure is aimed at extending the Central Information Portal for Research & Development with innovation, examples of innovative strategies and description of possibilities in obtaining funds. The objective of the portal will be not only to integrate information with a focus on innovation but it will also include information on institutions providing support to innovation. The measure addresses the lack of proactive system instruments in the innovation policy.

**Task:**

Become actively involved in the creation of the information portal aimed at support to research, development and innovation. The responsibility for establishing the portal for science, research and innovation rests with the Ministry of Education of the Slovak Republic. To reach the full functionality of the portal also in the field of innovation it is necessary that the Ministry of Economy ensure cooperation of all competent authorities and institutions involved in support to innovation.

**Measurable indicators:**

- portal hit count,
- measure of visitors' satisfaction with portal contents.

**Responsible:** Ministry of Economy of the Slovak Republic

**Deadline:** within 14 days after approval of the Innovation Strategy by the Government of the Slovak Republic

**Thematic and financial links to the NSRF, OP Competitiveness and Economic Growth**

- Measure 1.2: Support of common services for entrepreneurs

**Examples from abroad**

To intensify the exchange of member states' experience in regional innovation policy, the EU has established the Innovating Regions portal <<http://www.innovating-regions.org>>, which could become the source of inspiring ideas also for Slovakia.

The portal includes information aimed at support to innovativeness. It provides services in information research, experts from various areas, provides a database of study stays, potential partners, information on conferences being organised, participating regions, publication activity, etc. The portal includes descriptions of various innovation strategies, the latest documents, policies and strategies.

### **Measure 1.3: Creating high-quality legislation for the development, support and evaluation of innovations**

**Measure objective: Creating clear rules for the innovation activity support from public funds**

The measure is aimed at the drafting of an Innovation Act and relevant implementing regulations. The measure addresses the absence of a legislative framework that would comprehensively define the system of innovation development and support – designing and creating infrastructure, the competences for establishing an environment conducive to innovation development, the responsibility for the creation and implementation of support instruments, the tools, forms and conditions for the provision of state subsidies, and an evaluation system.

#### **Task:**

Prepare an Innovation Act as one of the fundamental instruments for innovation development.

#### **Measurable indicators:**

- the existence of the Innovation Act,
- the existence of subordinate legislation relating to the Act.

**Responsible:** Ministry of Economy of the Slovak Republic

**Deadline:** 31 May 2007

### **Measure 1.4: Introduction of regular evaluation through indicators of innovative environment development**

**Measure objective: Ensure clearly and transparently documented efficiency of support to innovations**

The measure is aimed at creating a system of regular evaluation of innovation development in Slovakia addressing the existing lack of proactive system instruments in the innovation policy.

#### **Task:**

Develop uniform criteria and an evaluation system of support in the field of research, development and innovation. The system will uniformly evaluate the efficiency of public fund spending on the basis of innovativeness indicator monitoring. Each public fund beneficiary, Agency or responsible ministry will be preparing end-year evaluation of fund spending. In the framework of the evaluation system, we propose to deal with two types of indicators:

- a) national-level indicators,
- b) indicators concerning the companies themselves and the business environment.

#### **Measurable indicators:**

- the existence of the innovation evaluation system in the Slovak Republic.

**Responsible:** Ministry of Economy of the Slovak Republic in cooperation with the Ministry of Education of the Slovak Republic

**Deadline:** 30 September 2007

#### **Examples from abroad**

The indicators described below are used in general to evaluate the innovation environment in OECD countries on the national level and serve as an audit tool for the use of both public and private funds in the field of innovations.

- spending on human resources (total public spending on education) as a GDP percentage;
- total research and development spending as a GDP percentage;
- science and technology graduates – total – third-level science and technology graduates per 1000 residents aged 20 – 29;
- science and technology graduates – female graduates – third-level science and technology female graduates per 1000 residents aged 20 – 29;
- science and technology graduates – male graduates – third-level science and technology male graduates per 1000 residents aged 20 – 29;
- EPO patents – number of patent applications to the EU Patent Office per million residents;
- venture capital investments – in the initial phase – relative to the GDP percentage, investment stage analysis;
- venture capital investments – expansion and relocation – relative to the GDP percentage, investment stage analysis;
- information technology spending as a GDP percentage;
- level of young people's education – total – percentage of population of 20 to 24 years of age with complete second level education – secondary school;
- high tech exports – exports of high technologies as a percentage of total export.

#### **Measure 1.5: Establishing an implementing agency for innovation support and development (ISDA)**

##### **Measure objective: Ensure the existence of a competent innovation development sponsor**

The Ministry of Economy of the SR considers it necessary to create a specialised institution that will deal with the implementation of support in the field of innovation and its evaluation. The measure is aimed at addressing one of the main weaknesses of the innovation process in Slovakia, which is the non-existence of an umbrella implementation body for innovation support and development that would be a sufficiently competent partner to all involved sectors of research and development.

##### **Task:**

Expand (transform) the competences of some of the existing agencies managed by the Ministry of Economy. The agency will be preparing background documents for the Ministry of Economy for the development of an innovation strategy and for draft innovation programmes. It will further be preparing background documents for public tenders for the presentation of draft innovation programmes and cooperating with the Ministry of Economy in the performance of selection and approval procedures. The process details of such procedures will be provided for by special regulation to be prepared by the Ministry. It will also be supervising the authority for drawing the funds allocated and regularly evaluating the efficiency of funds spent. The agency's tasks will include, for example, provisions for training and promotion in the field of innovation business activities assuming the cooperation with the Ministry of Education and with the Ministry of Labour, Social Affairs and Family.

The Agency's task may also be the implementation of structural funds, in particular, the implementation of the Competitiveness and Economic Growth Operational Programme ("OP C&EG"). With respect to the OP C&EG, the development of innovations and the

implementation of structural funds are addressed by the RIC (Regional Innovation Centres), which will be supported in the OP C&EG through measure 1.2, Support of Common Services for Entrepreneurs.

**Measurable indicators:**

- approved statute of the innovation support and development agency (logical yes/no),
- transformed agency (yes/no),
- number of projects managed by the agency,
- number of activities supported by the agency.

**Responsible:** Ministry of Economy of the Slovak Republic

**Deadline:**

- a) approved statute of the innovation support and development agency and an explanatory report including the rules for its operation  
30 June 2007
- b) transformation of the agency  
30 September 2007
- c) the launch of the activity  
as of 1 January 2008

***Measures for Priority No. 2***

**Measure 2.1: Support to communication tools aimed at the promotion of innovativeness**

**Measure objective: Popularise innovations for the largest possible group of the involved entities and for the public**

The measure is aimed at the support to relevant communication on the topic of innovation. The basic communication tools suitable for the support to increasing awareness of innovation may include:

- a) competitions aimed at innovations, which will evaluate the best research teams or research workers who contributed to the development of knowledge in the field of applied research,
- b) support to exchange of international experience through seminars, permanent conferences, internet conferences or conferences supporting information on applied research and development,
- c) conducting public relation campaigns aimed at the support to innovative activities using also mass communication media.

The measure addresses the lack of proactive system instruments in the innovation policy and the persisting low mobility of scientific research workers.

**Task:**

Call a competition, with external experts as assessors, aimed at appraisal of high-quality results in the field of innovations that will be immediately introduced into practice. The prizes may be of financial but also non-financial nature, such as study stays, technical equipment, participation in international conferences, etc. The target group should not be only research and development workers but also enterprise sphere workers and we propose to include also amateur inventors. Organise a long-term public presentation campaign of innovation business activities results.

**Measurable indicators:**

- number of projects enrolled,
- number of winning project activities implemented,
- number of seminar and conference participants,
- increasing awareness of innovations (statistical survey),
- number of presentation activities conducted

**Responsible:** Ministry of Economy of the Slovak Republic

**Deadline:** a) preparation of the competition rules  
31 March 2008  
b) calling the competition  
annually on 31 July starting from 2008  
c) Public relation activities on running basis starting from 2007

**Thematic and financial links to the NSRF, OP Competitiveness and Economic Growth**

- Measure 1.2: Support of common services for entrepreneurs

**Measure 2.2: Supporting the increase of human capital quality through educational activities, mobility and knowledge transfer**

**Measure objective: Ensure efficient support to acquiring experience and new knowledge in the field of applied research and innovation**

The measure is aimed at entrepreneurs, research workers, students with exceptional growth potential, development workers who would be supported through scholarships, targeted vouchers (innovation vouchers), grants supporting education and scientific activity, through stays abroad with the purpose of gaining experience and new knowledge concerning applied research, or new innovation methods implemented in both business and public sphere. The measure addresses the persisting low mobility of scientific research staff, entrepreneurs and their employees with respect to innovations.

**Task:**

Develop a draft programme to support co-financing of educational activities and mobility with the purpose of gaining new knowledge and exchanging international experience in the field of innovation. The grant applicants should include business entities, research institutions, universities and individuals. The grants may be in the form of supporting the participation in conferences, seminars, specialised exhibitions aimed at innovation, scholarships, support to educational stays or support to educational and scientific activity.

**Measurable indicators:**

- number of educational activity participants,
- number of individual educational activities conducted.

**Responsible:** Ministry of Economy of the Slovak Republic in cooperation with the Ministry of Labour, Social Affairs and Family

**Deadline:** draft programme – 31 March 2008  
call – annually on 31 December starting from 2008

**Thematic and financial links to the NSRF, OP Competitiveness and Economic Growth**

- Measure 1.2: Support of common services for entrepreneurs

## *Measures for Priority No. 3*

### **Measure 3.1: Innovation and technology transfers**

**Measure objective: Ensuring an increase of business entities' innovation activities to reach the level of advanced EU countries**

The measure is aimed at increasing innovation activities of the business sector, focusing particularly on the growth of added value, increasing economic efficiency of doing business, reducing and eliminating negative environmental impacts, creating new jobs and mobilising funds.

The measure addresses the poor innovativeness of companies and low private investment in innovations, the insufficient transfer of research results into the business sphere, the low quality of managerial experience and skills on the part of the entrepreneurs as well as on the part of the research and development sphere, and the low percentage of research, development and innovation spending in GDP.

#### **Task:**

Prepare a system of innovation activity support, including progressive technology transfer and venture capital, from public funds, EU sources and private sector sources.

When creating specific tools to support the development of venture capital, it will be necessary to make full use of the experience and best practices from countries achieving best results in this field. Besides the USA, these include, in particular, the UK, Ireland, and Israel.

#### **Measurable indicators:**

- the number of venture capital funds,
- the number of projects successfully completed,
- the amount of venture capital,
- the percentage of private sources in the funds.

**Responsible:** Ministry of Economy of the Slovak Republic in cooperation with the Ministry of Labour, Social Affairs and Family

**Deadline:** On running basis with annual evaluation as at 30 September

#### **Thematic and financial links to the OP Competitiveness and Economic Growth**

- Measure 1.1: Innovation and technology transfers

#### **Examples from abroad**

Examples concerning the provision of support in this area indicate that this is a very frequently used tool of explicit policy.

##### **France**

The French government implemented the SOFARIS FR9 programme, which provides guarantees to share capital investors investing capital in higher-risk projects or capital allocated to launching business. Sofaris provides also guarantees for loans to SME's up to the amount of 50% of their liabilities.

##### **Belgium**

The Walloon Government invests funds in common university investment venture capital funds with

the purpose of increasing the extent of university research commercialisation and provides guarantees to venture capital for the development of university research spin-offs.

**United Kingdom**

The support to venture capital focuses on generous tax initiatives and measures aimed at funding and support of private venture capital.

The measures are suitable for companies focusing on the high tech development or the support to regional development of venture capital.

To improve the use of venture capital, the UK government announced seven pilot programmes providing intensive, targeted consulting to small enterprises so that they are comprehensively "investment ready". The UK High Technology Fund is of relevance in this respect.

**Latvia**

Latvia, in the framework of the Single Programming Document for structural funds, prepared a Programme for the Establishment of a Venture Capital Market in Latvia. This programme will create a fund of funds in the total amount of €15 million. Of this amount, €10 million is from the ERDF and €5 million is from the state budget.

**Luxembourg**

In 2002, Luxembourg introduced start-up loans, which constitute a funding tool for innovative businesses. These are direct loans designed to establish or take over a SME. The objective is to enable entrepreneurs who do not have sufficient funds available to establish a new or take over an existing enterprise.

**Israel**

In 1990, a YOZMA programme was launched in Israel with the state providing investments up to the amount of 40% of the fund's registered capital and maximum US\$ 8 million in 20 investment funds. The conditions were that at least one of the fund partners be a foreign investment company with proven experience in venture investment, that the fund invest primarily in new high-tech companies, and that the finance go through local banks. Private investors of the fund had the possibility to buy state shares at the face value. In the course of 5 years, virtually all state shares were bought out. The market thus created initiated the establishment of 130 new funds in the course of 10 years in the total value of US\$ 4 billion.

### **Measure 3.2: Support of common services for entrepreneurs**

#### **Measure objective: Improving innovative environment**

The measure is designed to increase the competitiveness of business entities through supporting the applied research and innovation activities in businesses from public funds, EU funds and private sphere funds, i.e., through co-financing selected activities related to the introduction of innovations for technologies, procedures, products or services. When introducing innovations in the practice, entrepreneurs may apply for funds also towards compensation of the costs of experts in the relevant field.

The effort is also to restore the business activity in the context of balanced regional development, including revitalisation of former industrial sites.

In the framework of the measure, support will be provided towards the development of business infrastructure in brown industrial park refurbishment (eligible costs including also environmental audits, rehabilitation of contaminated industrial locations, etc.), incubators for starting entrepreneurs and sole traders in the field of industry and services, and incubators focused on innovative business, supporting the building of innovation business centres for entrepreneurs in the form of cooperation among universities, research and development organisations and the business sector with the purpose of improving access to highly technical information, to applied research results, to new advanced technologies, to innovation, will contribute to economic growth and improvement of the competitiveness of industry and services.



The measure will include also the development of clusters, which will create conditions for cooperation of the business sector with universities, business and innovation centres in certain industries and services depending on the development potential in the regions.

**Task:**

Develop a system of tools increasing innovativeness of companies and the innovative culture with the objective of intensifying cooperation of business entities with the research and development base.

**Measurable indicators:**

- ❑ number of projects supported
- ❑ added value resulting from projects implemented
- ❑ number of companies established within the projects supported

**Responsible:** Ministry of Economy of the Slovak Republic

**Deadline:** On running basis with annual evaluation as at 30 September

**Thematic and financial links to the OP Competitiveness and Economic Growth**

- Measure 1.2: Support of common services for entrepreneurs

**Measure 3.3: Support of innovation activities in enterprises**

**Measure objective: Speeding up the introduction of innovations into practice**

The measure is focused on the support to activities in the field of innovation related to the process of research and development result transfer into practice. This will include, in particular, the support to registration of patents, protection of intellectual property, building quality management systems, certification, and progressive technology transfer.

The measure addresses also the problem of insufficient investment in know-how transfer, low level of intellectual property protection, poor level of investment in progressive technologies, which has a significant impact on Slovak economy's performance and competitiveness.

The objective of the measure is also to build an accreditation and certification system focused on increasing quality of production, which will enable greater involvement of Slovak entities in international cooperation.

Expansion to international markets requires adoption of rules in the field of standards and quality, product safety, technical standardisation, testing, accreditation, certification, protection of industrial and intellectual property, industrial design, and quality policy. In the Slovak Republic, these areas are harmonised with EU regulations. They include also an increase of awareness of protection of and compliance with consumer rights.

**Task:**

Develop a grant scheme to support know-how transfer, intellectual property protection, building quality management systems, certification, licence purchase and progressive technology transfer.

Support will continue to be provided to grant schemes supporting the building of quality management systems, or schemes providing support to innovative entrepreneurs in the preparation of their companies for certification, or the certification, pre-certification and re-certification process itself, and other related activities.

An important part of this tool will be the programme supporting spin-off activities in the enterprise as well as in the academic and research sphere. This will enable new ideas formed in companies, universities or research institutes to find their way into the life of a new company.

This kind of tool will enable to support the implementation of innovation projects' results, for which the authors lack sufficient own funds and for which it is not guaranteed that they would bring immediate profits and thus are not suitable for a support through indirect financial tools.

**Measurable indicators:**

- number of European/triangular patents supported,
- number of certification processes supported,
- number of licences acquired,
- added value resulting from projects implemented,
- number of spin-off companies.

**Responsible:** Ministry of Economy of the Slovak Republic

**Deadline:** On running basis with annual evaluation as at 30 September

<b>Thematic and financial links to the OP Competitiveness and Economic Growth</b>
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| <ul style="list-style-type: none"><li>• Measure 1.3: Support of innovation activities in enterprises</li></ul> |
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#### 4. Identification of financial sources for the implementation of the Slovak Republic's Innovation Strategy

Measure number	Measure	Source	Budget chapter
<b>Priority No. 1: High-quality infrastructure and an efficient system for innovation development</b>			
Measure 1.1	Financial support to establishment of innovation centres	SB (ERDF), SF, CIP	MoE SR
Measure 1.2	Establishing an information portal aimed at the support to innovativeness in the business sphere	SB, SF	MoEdu SR, MoE SR
Measure 1.3	Creating high-quality legislation for the development, support and evaluation of innovations	SB, EEA	MoE SR
Measure 1.4	Introduction of regular evaluation through indicators of innovative environment development	SB, SF, EEA	MoE SR
Measure 1.5	Establishing an implementation agency for innovation support and development (ISDA)	SB, SF (TA)	MoE SR
<b>Priority No. 2: High-quality human resources</b>			
Measure 2.1	Support to communication tools aimed at the promotion of innovativeness	SB, SF (ERDF)	MoE SR
Measure 2.2	Supporting the increase of human capital quality through the financing of educational activities, mobility and knowledge transfer	SB, SF (ESF)	MoE SR
<b>Priority No. 3: Efficient tools for innovation</b>			
Measure 3.1	Innovation and technology transfers	SB, SF (ERDF), CIP	MoE SR
Measure 3.2	Support of common services for entrepreneurs	SB, SF (ERDF), CIP	MoE SR
Measure 3.3	Support of innovation activities in enterprises	SB, SF (ERDF), CIP	MoE SR

Abbreviations: SF – structural funds, ESF – European Social Fund, ERDF –European Regional Development Fund, SB – state budget, TA – technical assistance, EEA – European Economic Area, CIP – Competitiveness and Innovation Framework Programme, MoE SR – Ministry of Economy of the Slovak Republic, MoEdu SR – Ministry of Education of the Slovak Republic

**5. Quantification of financial sources for the implementation of the Slovak Republic's Innovation Strategy  
(mil. SKK)**

Measure number	Measure	2008	2009	2010
<b>Priority No. 1: High-quality infrastructure and an efficient system for innovation development</b>				
Measure 1.1.	Financial support to establishment of innovation centres	25	30	35
Measure 1.2.	Establishing an information portal aimed at the support to innovativeness in the business sphere	1	1	1
Measure 1.3.	Creating high-quality legislation for the development, support and evaluation of innovations	1	1	1
Measure 1.4.	Introduction of regular evaluation through indicators of innovative environment development	5	5	5
Measure 1.5.	Establishing an implementation agency for innovation support and development (ISDA) (including activity)	20	15	15
<b>Priority No. 2: High-quality human resources</b>				
Measure 2.1.	Support to communication tools aimed at the promotion of innovativeness	5	5	5
Measure 2.2.	Supporting the increase of human capital quality through the financing of educational activities, mobility and knowledge transfer	3	3	3
<b>Priority No. 3: Efficient tools for innovation</b>				
Measure 3.1.	Innovation and technology transfers	80	80	80
Measure 3.2.	Support of common services for entrepreneurs	60	60	55
Measure 3.3.	Support of innovation activities in enterprises	100	100	100

Items for measures 1.1 to 2.2 represent the sources of state budget from the chapter of the MoE SR  
 Items for measures 3.1 to 3.2 represent co-financing to EU funds

## **6. Legislative impacts of the strategy**

Considering the fact that the issue of innovation has not been legislatively provided for until now, it will be necessary to make an amendment to Act No. 575/2001 on the Organisation of Government Activities and the Organisation of Central State Administration, particularly in Section 6 concerning the competences of the Ministry of Economy of the Slovak Republic, and extend the said section with the competence in the field of innovations. At the same time, this competence will have to be provided for systematically with respect to the personnel and funding.

### **Innovation Act and relevant implementing regulations**

Draft Innovation Act will respond to the needs stemming from the fact that this issue has not been paid appropriate attention in the Slovak Republic until now. Act No. 172/2005 on the Organisation of State Support to Research and Development amending and supplementing certain laws does not deal with the issue of innovation at all. The Innovation Act will bring a new element to the field of Slovak Republic Government competence in the support of sustainable economic growth and competitiveness of the Slovak economy defining the roles of authorities with competences in the field of innovation. The draft law has been prepared with the support of the professional community and foreign experts having knowledge in the field of innovation. To address the details stemming from the law, it will be necessary to prepare also relevant implementing regulations.

### **Innovation Support and Development Agency**

In accordance with the draft Innovation Act and with reference to the proposed amendment to Section 6 of Act No. 575/2001, the central government body (the owner) for innovation development will be the Ministry of Economy, which may entrust the performance of certain tasks in the field of innovation to another organisation established within its competences. Following up the proposed Measure 1.6, the newly established Innovation Support and Development Agency (ISDA), on the basis of its statute approved by the Ministry of Economy, or on the basis of an authorisation, will conduct, autonomously or in cooperation with the concerned entities of the Slovak Republic's national innovation system, all activities stemming therefrom.

### **Programmes, grant schemes, measures supported from Structural Funds**

Programmes, grant schemes and measures for the implementation of EU Structural Funds constitute an important part of lower-level standards. As most of the Innovation Strategy measures are focused on co-financing from Structural Funds, the adoption of these instruments needs to be timed so that they can be smoothly implemented starting from the new budget period of 2007-13. The innovation strategy is broadly and progressively designed to offer a sufficient scale of tools. Many of them are new, not used in Slovakia previously. The financial instruments (direct forms of assistance) proven in the previous period along with the new financial instruments are expected to enable accelerating the development of innovation in the Slovak Republic.